VisionLabs LUNA PLATFORM 5

User interface manual

v.5.67.0

Contents

1 Glossary

Term	Description
Age category (group)	A group of people that is within a specified range of ages. In accordance with the age periodization of the World Health Organization, groups 18–44 (young adults), 45–60 (middle-aged adults), 61–75 (older adults) are distinguished
Attributes	Age, gender, automatically determined by the system
Authorization	A security mechanism to determine access levels or user privileges related to system resources
Avatar	A visual representation of the face that can be used in the user interface
Best shot	A frame of the video stream, in which the face is captured in the optimal angle for further use in the face recognition system
Biometric sample (sample)	Analog or digital representation of biometric characteristics prior to biometric feature extraction and descriptor generation
Descriptor	A binary data set prepared by the system based on analyzed characteristic. It is a composite vector of person's face attributes
Candidate	Applicant for similarity with the reference
Cross-matching	Many-to-many comparison (M:N). In the context of this document, comparing multiple lists
Task	A task that is created by a user and runs in the background. In LUNA PLATFORM 5 UI, tasks include cross-matching, export, batch processing, batch import, and batch identification
Detection	FaceStream entity that contains the coordinates of face or body and the estimated value of the object that determines the best shot
Event	Detection recorded by the system with the extraction of attributes by the handler
Exchangeable image file format (EXIF)	A standard for embedding technical metadata in image files that many camera manufacturers use and many image-processing programs support
Extraction	A descriptor extraction procedure
Face recognition	A set of methods for collecting, processing, and storing data of person's face images for identity recognition or identity confirmation using mathematical methods

Term	Description
Faces	Changeable LUNA PLATFORM 5 objects that contain information about one person
Handler	Image processing entry points that characterize the image processing procedure and define the LUNA PLATFORM 5 algorithms used for this
Handling policy	A set of rules (policies) for image processing
Identification	Search for the most suitable descriptor by comparing the vectors of face features with a list of similar descriptors in the database (one to many)
List	A set of faces in the LUNA PLATFORM 5 system, combined automatically or manually according to a certain criterion
Liveness	A software method to confirm the vitality of a person by one or several images in order to prevent spoofing attacks
LUNA PLATFORM 5 (LP5)	VisionLabs automated facial recognition system designed to process, collect, analyze, store, and compare biometric data obtained from facial images
Matching	A procedure of matching descriptors for the purpose of comparison
Physical access control system (PACS)	A set of hardware and software tools aimed at controlling the entrance and exit in order to ensure safety and regulate visits to a particular facility
Reference	Object (attribute, face, body, face and event external IDs, event track ID, descriptor) that is compared/verified with the candidate.
Similarity	Probability characteristic in the range from 0 to 1, characterizing the level of similarity of subjects of biometric data
Spoofing attack	Substitution of a real person for a fake image (for example, a photograph) to deceive the system
Track	Information about object's position (face or body of a person) in a sequence of frames

2 Introduction

This document describes the purpose and functions of the LUNA PLATFORM 5 UI user interface (hereinafter referred to as Interface) version v.5.67.0.

> All information provided in the documentation is for informational purposes only. The use of the product may vary significantly depending on various factors (case, legality of use, compliance with the law and regulatory requirements, etc.) and depends on individual circumstances.

3 Overview

LUNA PLATFORM 5 UI is a user interface that provides user interaction with LUNA PLATFORM 5 for operating with events and lists.

LUNA PLATFORM 5 UI allows the user to capture and view events according to a customized policy. For example, when identifying persons using control lists, user can search among events for a certain period of time by various attributes and photographic image of a person.

The main functions of LUNA PLATFORM 5 UI are presented below:

- display detection and object recognition events (faces, bodies);
- display information about the temperature of a person, filter events by temperature;
- search through the archive of events;
- create, view and edit face cards containing information about a person's face;
- create, view and edit lists;
- identify faces, bodies and uploaded photo images by lists;
- face and body verification;
- verify person's identity;
- create and configure handling policies;
- verification of compliance of the photo with the requirements of biometric standards;
- create tasks (cross-matching of lists, export of faces, bodies and events, batch processing of photo images, batch import of photo images, batch identification of photo images, batch deleting faces from the list);
- evaluate existing photo images for compliance with the ISO/IEC 19794-5:2011 standard;
- show information about user accounts;
- show information about the status of connected components and systems;
- show information information about available licenses;
- show information information about plugins imported into LUNA PLATFORM 5.

4 System requirements

4.1 Hardware requirements

To get started with LUNA PLATFORM 5 UI, make sure you can meet the following hardware requirements.

Resource	Minimum	Recommended
CPU	Intel Core i3, 2nd Generation AMD Athlon X4 860K	Intel Core i3, 4th Generation and above AMD Ryzen 3 and above
RAM	2 GB	4 GB and above
Display resolution	1024 px (for example, 1024x768), 1920px (for example, 1920x1080)	-

4.2 Software requirements

To get started with LUNA PLATFORM 5 UI, make sure you can meet the following software and Internet connection requirements.

Resource	Recommended
Supported web browser	Google Chrome (version 109.0 and above); Microsoft Edge (version 109.0 and above); Mozilla Firefox (version 109.0 and above).
	It is recommended to update your browser to the latest version. Check browser updates: • Google Chrome: chrome://settings/help; • Microsoft Edge: edge://settings/help; • Mozilla Firefox: Go to the browser menu Menu → Help → About Firefox.

Installing and configuring the above software is beyond the scope of this document.

5 Working with interface

5.1 Authorization in interface

Create account using a POST request "create account" to the API service, or using the Admin service. When creating the account, you must specify the following data: login (email), password and account type.

The Interface is accessed by logging in to the website at `<host:5000/ui>` in a web browser. Authorization form is launched when you log first time into LUNA PLATFORM 5 UI (Figure 1). For authorization in the Interface, enter your credentials (email and password) in the appropriate fields and click the "Login" button.
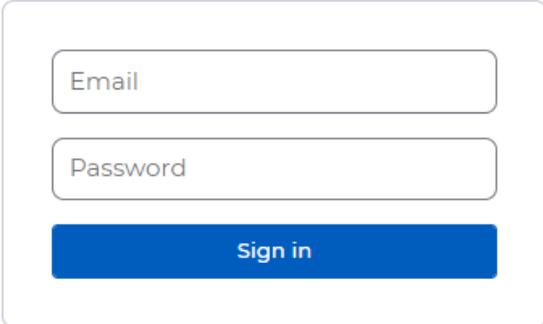
Figure 1: Authorization form

When logged in, the user is taken to the "Last events" section (Figure 2).
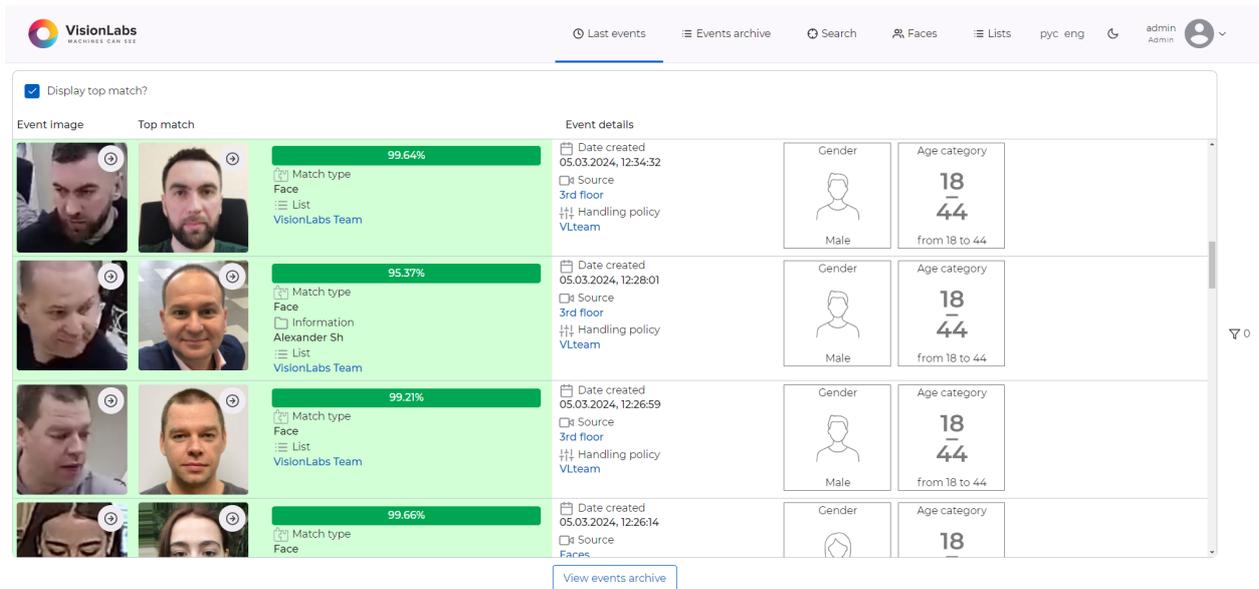
Figure 2: Interface screen after successful authorization ("Last events" section)

5.2 Switching the interface theme

The Interface allows you to customize the color theme. Fot this, click on the icon in the top main menu:

- ☾ to activate night mode or dark theme;
- ☼ to activate day mode or light theme.

5.3 Sign out of account

To log out of your account, click the arrow ∨ on the right of the user's name. Click the "Exit" button (Figure 3).
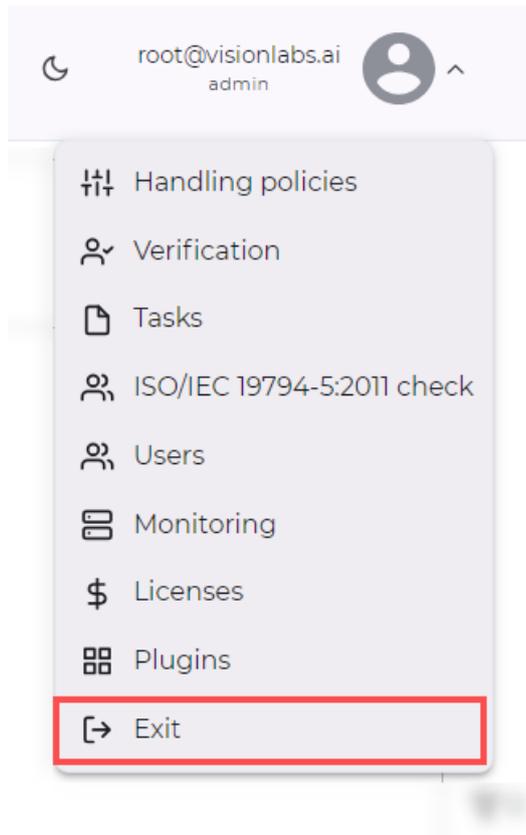
Figure 3: Logout

After clicking on the "Exit" button, the user is moved to the authorization form.

6 Interface sections

Switching between which is carried out in the main menu bar and in the drop-down menu (Figure 4).

The main menu consists of the "Last events", "Events archive", "Search", "Faces" and "Lists" sections.

The drop-down menu consists of the following sections: "Handling policies", "Verification", "Tasks", "ISO/IEC 19794-5:2011 check", "Users", "Monitoring", "Licenses" and "Plugins".

To expand the drop-down menu, click the arrow ⌄ on the right of the user's avatar.

Purpose of the sections of the main menu:

- "Last events" displays the last 30 events, and it is possible to filter events by various parameters.
- "Events archive" displays all events recorded by the Interface and it is possible to filter events by various parameters.
- "Search" allows user to search faces, bodies and events by the following parameters:
    - by external face ID;
    - by face image;
    - by body image;
    - by Face ID from LP5;
    - by event ID from LP5.
- "Faces" allows users to create, edit, and delete a faces.
- "Lists" allows users to create, edit, and delete lists.

Purpose of the sections of the drop-down menu:

- "Handling policies" allows user to create, delete, and edit policies (handlers);
- "Verification" allows user to create, delete, edit, and test verifiers. Verifiers are used to quickly compare two faces: by face photo and face ID, external ID, attribute, event, and display the test result;
- "Tasks" allows user to create, delete, and view tasks: cross-matching (comparison of two lists of faces), export of faces or events, batch processing of a photo archive according to a specific policy, batch import of an archive with photo images of faces into the list, and batch identification of an archive with photo images by faces or events.
- "ISO/IEC 19794-5:2011 check" allows to check photo image for compliance with the ISO/IEC 19794-5:2011 standard.
- "Users" shows the list of user accounts created in LUNA PLATFORM 5.
- "Monitoring" shows status of the connected services, modules, components, and systems.
- "Licenses" shows status of the available licenses;
- "Plugins" shows status of plugins imported into LUNA PLATFORM 5.
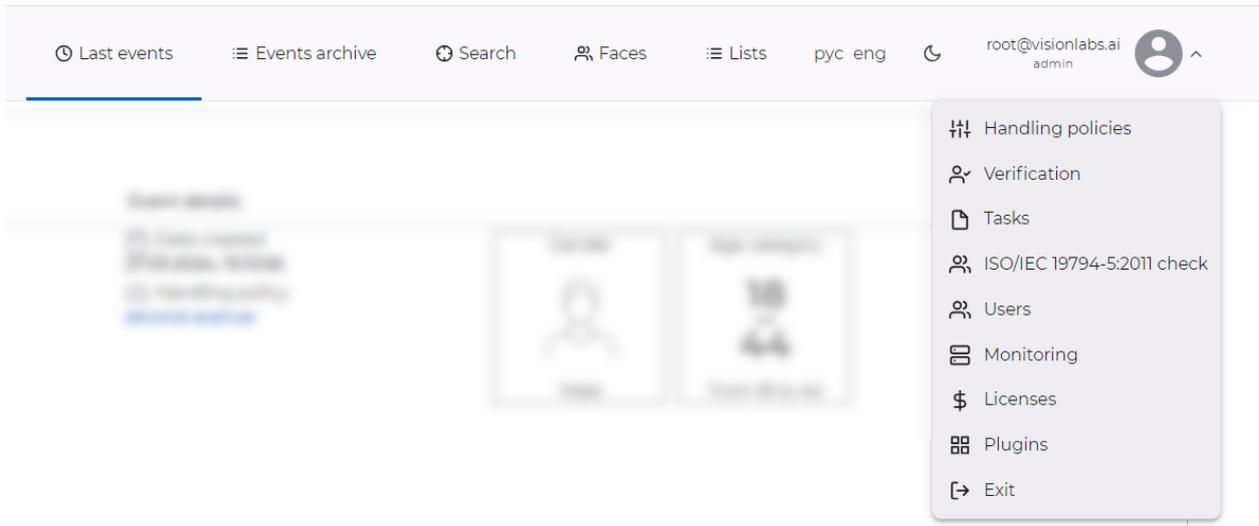
Figure 4: Sections of the Interface

7 Last events section

The "Last events" section displays detection and object (faces, bodies) recognition events, and records identification events using lists.

The general view of the "Last events" section is shown below (Figure 5).

The section displays the last 30 events within the settings of handling policy for processing incoming images of the video stream, terminals, REST requests, etc. Receiving and displaying events is performed with minimal delays in near real time.

At the bottom of the screen, there is a "View events archive" button which leads to "Events archive" section

Figure 5: "Last events" section

The filter icon (1), which is located on the right, hides the block with filtering settings. The page shows the following event data (2):

- "Event image"
  - a photo image of the face from the video stream;
  - a photo image of the body from the video stream;
- "Top Match"—the column is shown if the "Display top match" checkbox is active (3). If no matches are found for a photo from an event, then the column with the top match for this event will remain empty. The "Top match" includes:
  - reference photo images of the face and/or body;
  - value of similarity of the identified face with the reference (in percentage terms and with the color coding of similarity thresholds);

- "Match type"—the type of object (face or event), according to which the similarity of the identified face/body with the reference was found;
- "External ID"—external identifier of the face, the field is shown if such an ID is available (for "Face" in "Match type");
- "User data"—information from the database, linked to a person from the control (for "Face" in "Match type");
- "List"—the name of the list to which the person is attached (for "Face" in "Match type");
- "Date created"—date and time of fixing the event (for "Event" in "Match type");
- "Source"—the name of the event source that recorded the event (for "Event" in "Match type");
- "Handling policy"—the name of the handler, according to which the reference photo image of the body was processed (for "Event" in "Match type").
- "Event details" shows the available event data:
  - "Date of created"—date and time of event registration;
  - "Source"—the name of the event source that recorded the event;
  - "Handling policy"—the name of the handler, according to which the reference photo images of the face/body were processed
  - "Metadata"*—button for uploading arbitrary user data in JSON format, the filed is shown if such data was added to the event (for "Event" in "Match type").
  - Face attribute, if found:
    * "Gender"—gender based on face image;
    * "Age category"—the age of the detected person;
  - Body attributes, if found:
    * "Upper body colors"—an indication of the color of the clothes of the human body upper part;
    * "Lower body colors"—indicating the color of the human body upper part;
    * "Headwear"—the presence or absence of a headdress, if it is defined.
    * "Backpack"—the presence or absence of a backpack, if it is defined.

*All detailed capabilities and limitations of the "Metadata" field are specified in the "Administrator Manual" of LUNA PLATFORM 5 in the paragraph 6.9.4 "Events meta-information".

7.1 Last events filtering

The Interface allows you to filter last events (2 in Figure 5) to find and display necessary events (Figure 6).

User can quickly find an event among the last 30, as well as set a limit for displaying new events on the screen.
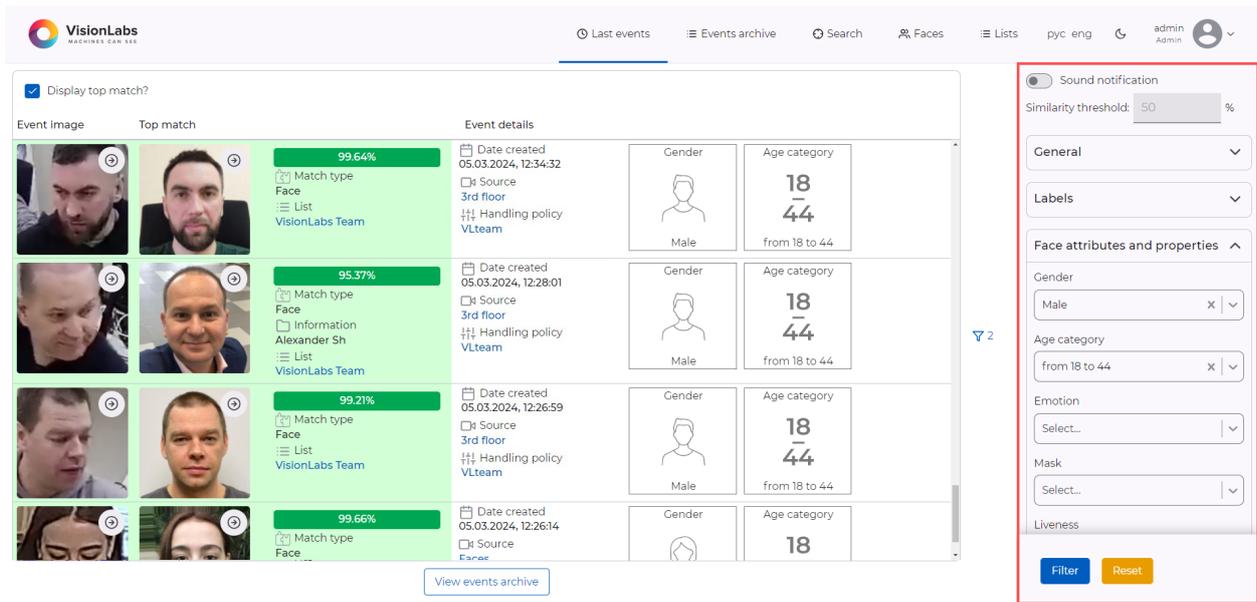
Figure 6: Filter application to display the latest events: gender — male, age from 18 to 44

When a user clicks on the 🔻 icon (1 in Figure 5) on the "Last events" page, a menu with settings and filters opens. The number next to the icon shows the number of applied filters. A short description of the elements and parameters of the filter block on the "Last events" page is presented below (Table 1).

Table 1. Filters available to the user to search for last events

Name	Description
Event details	
"Sound notification" toggle and "Similarity threshold" parameter	Allows user to configure sound alerts about detection of an object that is not below the specified value of the "Similarity threshold" field
General	
Source	Select one or more sources from the list of available ones;
Handling policies	Handling policy names, according to which the face or body in the image was processed. One or several handling policies can be selected for searching.

Name	Description
Tags	Selection of one or more tags. For example, the "Temperature"* tag, is intended for displaying information about the temperature of the human body, filtering events by temperature. "Temperature": • Abnormal—very low or very high body temperature of a person, which may indicate an incorrect setting of the thermal imaging camera (the event will be highlighted in red); • Normal—normal human body temperature range; • Increased—above the specified normal human body temperature range (the event will be highlighted in red);
Labels	
Label	Label name (labels are rules by which the comparison is made);
Similarity,%	Lower and/or upper limits of similarity for displaying faces identified by the lists;
Face attributes and properties	
Gender	Gender of a person to be detected, determined by the image of a face: • Female; • Male; • Not estimated;
Age category	Age range of a person to be detected, determined by the image of a face: • below 18; • from 18 to 44; • 45 to 60; • above 60;

Name	Description
Emotion	Emotion of a person to be detected: • Anger; • Disgust; • Fear; • Happiness; • Neutral; • Sadness; • Surprise; • Not estimated; A combination of several values is possible;
Mask	Indication of the presence of a mask: • Missing; • Medical mask; • Occluded; • Not estimated; A combination of several values is possible;
Liveness	Liveness status selection: • Spoof; • Real; • Unknown; • Not estimated; A combination of several values is possible;
Deepfake**	Liveness status selection: • Fake; • Real; • Not estimated; A combination of several values is possible;
Body attributes and properties	
Upper body colors	Top clothing color specification: • Undefined; • Black/Blue/Green/Grey/Orange/Purple/Red/White/Yellow/Pink/Brown/Beige/Khaki/Multicolored; • Not estimated; A combination of several values is possible;

Name	Description
Lower body type	Bottom clothing type specification: • Undefined; • Trousers; • Shorts; • Skirt; • Not estimated; A combination of several values is possible;
Lower body colors	Bottom clothing color specification: • Undefined; • Black/Blue/Green/Grey/Orange/Purple/Red/White/Yellow/ Pink/Brown/Beige/Khaki/Multicolored; • Not estimated; A combination of several values is possible;
Shoes color	Shoe color specification: • Undefined; • Black; • White; • Other; • Not estimated; A combination of several values is possible;
Headwear	Headdress specification: • Absent; • Present; • Undefined; • Not estimated; A combination of several values is possible;
Headwear colors	Headdress color specification: • Undefined; • Black; • White; • Other; • Not estimated; A combination of several values is possible;

Name	Description
Backpack	Backpack presence specification: • Absent; • Present; • Undefined; • Not estimated; A combination of several values is possible;
Sleeve	Sleeve length specification: • Short; • Long; • Undefined; • Not estimated; A combination of several values is possible;
Gender by body	Gender of a person to be detected, determined by the image of a body: • Female; • Male; • Undefined; • Not estimated; A combination of several values is possible;
Age category by body	Age range of a person to be detected, determined by the image of a body: • below 18; • from 18 to 44; • 45 to 60; • above 60;

Location

City Area District Street House number Longitude(-180…180); Accuracy (0…90); Latitude(-90…90); Accuracy (0…90);	Event location

Other

Name	Description
Comma-separated track IDs	Specifying track IDs
Add filter by meta***	Allows you to fill in a set of blocks to create a filter by the "meta" field. The number of meta filters is unlimited. The following blocks are required to be filled in when creating a filter by meta: • Key—the full path to the required meta field connected with events. • Value—any valid value for the meta field. • Type—selection of the data type stored in this meta field. The data type displays available operators and converts values into the desired data type when sent to the API. • Operator—select operators for a given data type from the list. Operator type depends on the selected data type (for more details see LUNA PLATFORM 5 API, "get events" section)

*Color coding of temperature values:

- increased temperature values will be marked in yellow;
- abnormal temperature values will be marked in red;
- normal temperature values will be marked in green.

See the LUNA Access documentation for more information on setting of temperature ranges.

**Deepfake license required

***For advanced users

The user selects one filter or a combination of filters and clicks on the "Filter" button for the applied filters to be applied.

To reset the applied filters, click on the "Reset" button.

The applied filters will affect the appearance of new events on the screen.

To collapse "Filters", click on the filter icon ▽ on the right side of the screen.

7.2 Event details

Click on an arrow button on the face or body from the event image (Figure 5) to open a page with detailed event data (Figure 7).

Figure 7: Detailed event data

When an event contains data on the detection of both a face and a body, you can switch between these data on the page with event details. If an event contains detection data for only one object, such as a face, then there will be no detection data for another object.

The the page with event details consists of four blocks. The description of the elements of the page is presented below (Table 2).

Table 2. Elements and parameters of the "Event details" page

Name	Description
Event details	
Event information	
Date created	Date and time of event recording
Event	"Event ID" — when clicked on ⧉, the value is copied to the clipboard

Name	Description
Track	"Track ID" — when clicked on ⧉, the value is copied to the clipboard
Handling policy	Name of the policy by which the image processing in the video stream is performed. Clicking on the name of the policy opens the form for editing its parameters
Source	Name of the source that recorded the event with the face Clicking on the name of the source, a real-time image of the stream from the source opens
Tags	Name of tags by which the event is filtered
Liveness	Result of the Liveness check for person identification purposes (KYC)
Deepfake	Result of the Deepfake check to determine face replacing
Metadata	Uploading arbitrary user data in JSON format, if available
Location	Event location data: "City", "Area", "District", "Street", "House number", "Coordinates (latitude)", "Coordinates (longitude)"
Detection	If equipped: face and/or body detection
Find similar: events	Clicking on events 🔍 opens a page in a new tab and searches for evens by the Event ID where the face/body was recorded
Find similar: faces	Clicking on faces🔍 opens the page in a new tab and searches for similar faces by the Face ID For face detection only
Photo image of a face and/or body from a video stream	Normalized image. When clicked on: • ⊕ the biometric sample opens in a new tab; • ••• the face/body detection track opens; • 🖼 the full frame from the video stream opens;

Name	Description
Attributes	Face attributes: • "Gender"—gender of a person; • "Age category"—specification of age category. Hover the cursor over the card to find out the exact age of the person determined from the face image; • "Emotion"—emotion of a person that was detected • "Mask"—indication of the presence of a mask Body attributes: • "Gender by body"—gender of a person; • "Age category by body"—specification of age. Hover the cursor over the card to find out the exact age of the person determined from the face image; • "Upper body"—specification of the type and color of clothing of the upper body. • "Lower body"—specification of the type and color of clothing of the lower body. • "Headwear"—specification of the type and color of the headwear. • "Shoes color"—specification of the shoe color. • "Accessories"—specification of the presence or absence of a "backpack"

Name	Description
Additional properties	Face properties: • Head tilt angle (roll); • Head tilt angle (pitch); • Head rotation angle (yaw); • Eye direction (pitch); • Eye direction (yaw); • Light; • Dark; • Blur; • Specularity; • Illumination • Mouth state; • Eye state; • Definition of attributes and properties of the face/body is set in the handler settings
Best match (type - "Event" or "Person")	Similarity value of identified face/body with the face/body from control list/event (in percentage);
Find similar: events	Clicking on events 🔍 opens a page in a new tab and searches for evens by the Event ID where the face/body was recorded
Find similar: faces	Clicking on faces🔍 opens the page in a new tab and searches for similar faces by the Face ID For face detection only
Photo image of a face and/or body	Reference photo image of the face or body (sample) or no photo. When clicked on • ⊕ the biometric sample opens in a new tab; • → face details opens • ⋯ the face/body detection track opens; • 🖾 the full frame from the video stream opens

Name	Description
Face attributes	Face attributes: • "Gender"—gender of a person; • "Age category"—specification of age category. Hover the cursor over the card to find out the exact age of the person determined from the face image; • "Emotion"—emotion of a person that was detected • "Mask"—indication of the presence of a mask Body attributes: • "Gender by body"—gender of a person; • "Age category by body"—specification of age. Hover the cursor over the card to find out the exact age of the person determined from the face image; • "Upper body"—specification of the type and color of clothing of the upper body. • "Lower body"—specification of the type and color of clothing of the lower body. • "Headwear"—specification of the type and color of the headwear. • "Shoes color"—specification of the shoe color. • "Accessories"—specification of the presence or absence of a "backpack"

Name	Description
Additional properties	Face properties: • Head tilt angle (roll); • Head tilt angle (pitch); • Head rotation angle (yaw); • Eye direction (pitch); • Eye direction (yaw); • Light; • Dark; • Blur; • Specularity; • Illumination • Mouth state; • Eye state; • Definition of attributes and properties of the face/body is set in the handler settings
"Matches"	List of matches with a detected face and/or body
Event photo	"Face" type—an avatar, sample, or no photo image. Similarity value of identified face with the face from control list (in percentage) "Event" type—detection (photo image of a face from a video stream). Similarity value of identified face or body with the face or body from the event (in percentage)
Type	• Face; • Event
Date created	Date and time of the biometric sample of the face or body creation from the identification event
Label	Label name. Labels are the rules by which the comparison is made
Additional information	"Face" type — "Information", "Lists", "External ID". "Event" type — "Handling policy", "Source" with the ability to go to the handling policy editing page and view the stream from the source in real time
(→) | When	clicked, the face or event details opens

The external ID is used to integrate LUNA PLATFORM 5 UI with external systems, to transfer data to other

systems in order to analyze and quickly respond to an event.

8 Events archive section

The "Events archive" section is designed to display all events of face and body detection as well as recognition and search for events in archive.

Receiving and displaying new events in the event archive is performed with minimal delays in near real-time.

General view of the "Events archive" section is shown below (Figure 8).
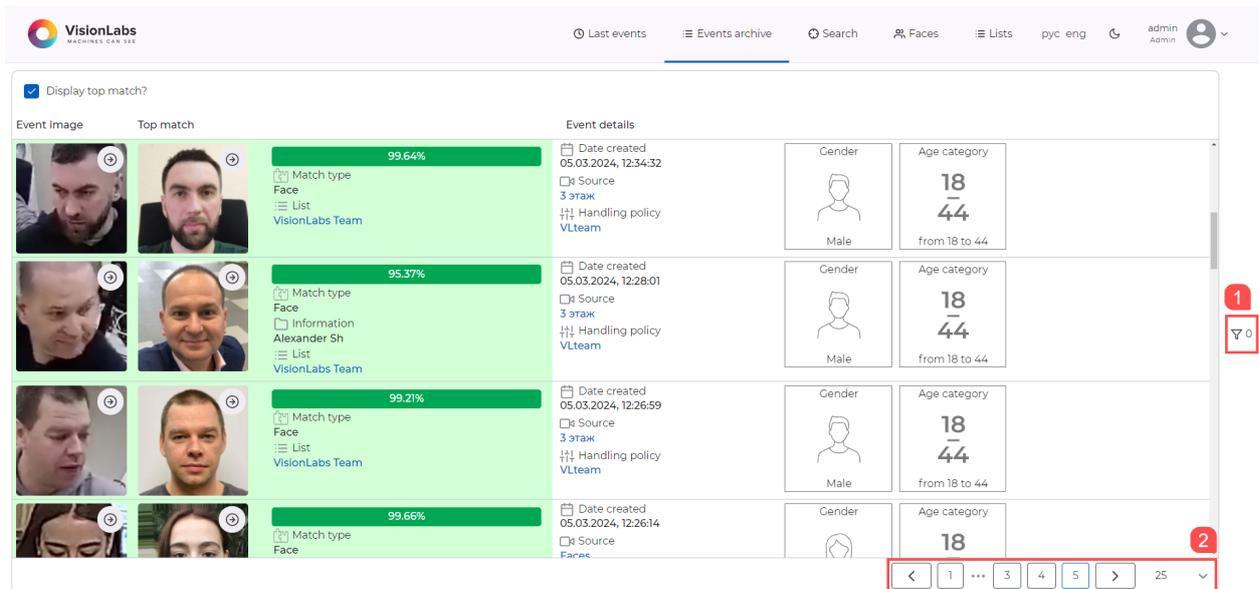
Figure 8: "Events archive" section

If there are no filters applied (1), the Interface displays the latest detection and identification events identical to those presented in the "Last events" section, as well as events created earlier.

The number of events displayed on the page is set by the switch in the lower right corner of the page. There can be 10, 25, 50 or 100 events in total on one page (2).

The displayed data is identical to the data in the "Last events" section.

> If no filters are set, only events from the last 30 days are displayed.

Click on a line to open a page with event details.

Click on a reference photo of a face from the control list to open a page with face details.

8.1 Archived events filtering

The Interface allows you to filter archived events (1 in Figure 8) to find and display necessary events.

With filters (Figure 9) user can quickly find an event among the last, as well as set a limit for displaying new events on the screen.
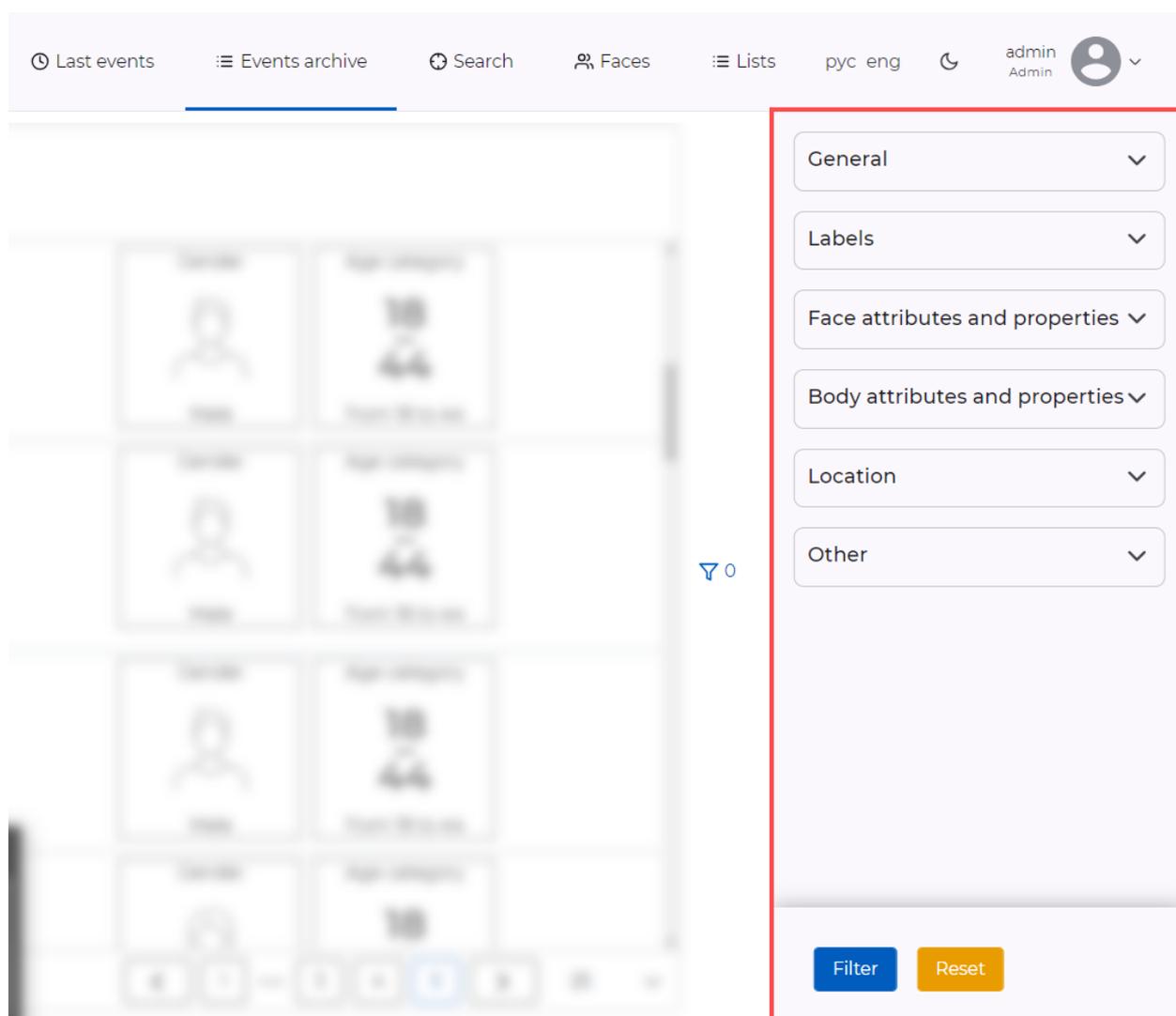

Figure 9: Filters for searching archived events

A short description of the elements and parameters of the block with filters in the "Events archive" section is presented in the table (Table 3).

Table 3. Filters available to the user to search for archived events:

Name	Description
General	
Date from	Start of the search period by date and time of the event;
Date to	End of the search period by date and time of the event;

Name	Description
Source	Event source that recorded the event. Select one or more sources from the list of available ones;
Handling policies	Handling policy names, according to which the face or body in the image was processed. One or several handling policies can be selected for searching.
Tags	Selection of one or more tags. For example, the "Temperature" tag, is intended for displaying information about the temperature of the human body, filtering events by temperature. "Temperature": - Abnormal—very low or very high body temperature of a person, which may indicate an incorrect setting of the thermal imaging camera (the event will be highlighted in red); - Normal—normal human body temperature range; - Increased—above the specified normal human body temperature range (the event will be highlighted in red);
Event ID	Identifiers of detection and attribute extraction events.Values are separated by commas, for the correct search must be specified in full;
External events ID	External identifiers of events. Values are separated by commas, for the correct search must be specified in full;
Labels	
Label	Label name (labels are rules by which the comparison is made);
Similarity,%	Lower and/or upper limits of similarity for displaying faces identified by the lists;
ID of objects with maximum match result	The ID of the top similar object (event or face) from matching results (match policy, values are separated by commas, for the correct search must be specified in full);
Face attributes and properties	
Gender	Gender of a person to be detected: - Female; - Male; - Not estimated;

Name	Description
Age category	Lower and/or upper limits of age of a person to be detected: • Under 18; • From 18 to 44; • 45 to 60; • Over 60;
Emotion	Emotion of a person to be detected: • Anger; • Disgust; • Fear; • Happiness; • Neutral; • Sadness; • Surprise; • Not estimated; A combination of several values is possible;
Mask	Indication of the presence of a mask: • Missing; • Medical mask; • Occluded; • Not estimated; A combination of several values is possible;
Liveness	Liveness status selection: • Spoof; • Real; • Unknown; • Not estimated; A combination of several values is possible;
Deepfake	Liveness status selection: • Fake; • Real; • Not estimated; A combination of several values is possible;
Face IDs from events	Face IDs of persons that are created in the LUNA PLATFORM 5 system as a result of a detection event and extraction of attributes. Values are separated by commas, for the correct search must be specified in full;

Name	Description
Body attributes and properties	
Upper body colors	Top clothing color specification: • Undefined; • Black/Blue/Green/Grey/Orange/Purple/Red/White/Yellow/Pink/Brown/Beige/Khaki/Multicolored; • Not estimated; A combination of several values is possible;
Lower body type	Bottom clothing type specification: • Undefined; • Trousers; • Shorts; • Skirt; • Not estimated; A combination of several values is possible;
Lower body colors	Bottom clothing color specification: • Undefined; • Black/Blue/Green/Grey/Orange/Purple/Red/White/Yellow/Pink/Brown/Beige/Khaki/Multicolored; • Not estimated; A combination of several values is possible;
Shoes color	Shoe color specification: • Undefined; • Black; • White; • Other; • Not estimated; A combination of several values is possible;
Headwear	Headdress specification: • Absent; • Present; • Undefined; • Not estimated; A combination of several values is possible;

Name	Description
Headwear colors	Headdress color specification: • Undefined; • Black; • White; • Other; • Not estimated; A combination of several values is possible;
Backpack	Backpack presence specification: • Absent; • Present; • Undefined; • Not estimated; A combination of several values is possible;
Sleeve	Sleeve length specification: • Short; • Long; • Undefined; • Not estimated; A combination of several values is possible;
Gender by body	Gender of a person to be detected, determined by the image of a body: • Female; • Male; • Undefined; • Not estimated; A combination of several values is possible;
Age category by body	Age range of a person to be detected, determined by the image of a body: • below 18; • from 18 to 44; • 45 to 60; • above 60;

Location

Name	Description
City Area District Street House number Longitude(-180…180); Accuracy (0…90); Latitude(-90…90); Accuracy (0…90);	Event location
Other	
Comma-separated track IDs	Specifying track IDs
Add filter by meta***	Allows you to fill in a set of blocks to create a filter by the "meta" field. The number of meta filters is unlimited. The following blocks are required to be filled in when creating a filter by meta: • Key—the full path to the required meta field connected with events. • Value—any valid value for the meta field. • Type—selection of the data type stored in this meta field. The data type displays available operators and converts values into the desired data type when sent to the API. • Operator—select operators for a given data type from the list. Operator type depends on the selected data type (for more details see LUNA PLATFORM 5 API, "get events" section)

*Color coding of temperature values:

- increased temperature values will be marked in yellow;
- abnormal temperature values will be marked in red;
- normal temperature values will be marked in green.

See the LUNA Access documentation for more information on setting of temperature ranges.

**Deepfake license required

***For advanced users

The user selects one filter or a combination of filters and clicks on the "Filter" button for the applied filters to be applied.

To reset the applied filters, click on the "Reset" button. To collapse Filters, click on the filter icon ▽ on the right side of the page.

9 Search section

The "Search" section is designed to search by photo, event (event ID), and face (face ID: "External ID", "Face ID"). This section displays all detection face and body recognition events that match the search conditions. General view of the "Search" section is shown below (Figure 10).

Figure 10: "Search" section

The "Search" section contains the following blocks:

- Search options:
    - "Photo" — search by uploaded photo image:
        * field for uploading a photo image;
    - "Event" — search by registered event in the system:
        * "Event ID" — identifier of the event of detection and attribute extraction;
    - "Face" — search by registered face in the system:
        * "External ID" — external face identifier;
        * "Face ID" — face identifier that is created in the LUNA PLATFORM 5 system as a result of a detection event and attribute extraction;
- Searching results:
    - "Events":
        * "Display search image" checkbox — disable if you need to hide the column with the original photo;
        * "Search result";
        * "Search image";
        * "Details";

- – "Faces":
    - * "Display search image" checkbox — disable if you need to hide the column with the original photo;
    - * "Search result";
    - * "Search image";
    - * "Details";
- Filters.

A short description of the elements and parameters of the filter block in the "Search" section is presented in the table (Table 4).

Table 4. "Filters" block elements description

Name	Description
Search events	
Date from	Start of the search period by date and time of the event;
Date to	End of the search period by date and time of the event;
Source	Event source that recorded the event. Select one or more sources from the list of available ones;
Handling policies	Handling policy names, according to which the face or body in the image was processed. One or several handling policies can be selected for searching.
Liveness	Liveness status selection: • Spoof; • Real; • Unknown; • Not estimated; A combination of several values is possible;
Tags	Selection of one or more tags. For example, the "Temperature" tag, is intended for displaying information about the temperature of the human body, filtering events by temperature. "Temperature": • Abnormal—very low or very high body temperature of a person, which may indicate an incorrect setting of the thermal imaging camera (the event will be highlighted in red); • Normal—normal human body temperature range; • Increased—above the specified normal human body temperature range (the event will be highlighted in red);

Name	Description
Event ID	Identifiers of detection and attribute extraction events. Values are separated by commas, for the correct search must be specified in full);
External events ID	External identifiers of events. Values are separated by commas, for the correct search must be specified in full);
Similarity is not less than, %	The similarity value is not lower than the specified one, in percent;
Labels	
Label	Label name (labels are rules by which the comparison is made);
ID of objects with maximum match result	The ID of the top similar object (event or face) from matching results (match policy, values are separated by commas, for the correct search must be specified in full);
Face attributes and properties	
Gender	Gender of a person to be detected: • Female; • Male; • Not estimated;
Age category	Lower and/or upper limits of age of a person to be detected: • Under 18; • From 18 to 44; • 45 to 60; • Over 60;
Emotion	Emotion of a person to be detected: • Anger; • Disgust; • Fear; • Happiness; • Neutral; • Sadness; • Surprise; • Not estimated; A combination of several values is possible;

Name	Description
Mask	Indication of the presence of a mask: • Missing; • Medical mask; • Occluded; • Not estimated; A combination of several values is possible;
Liveness	Liveness status selection: • Spoof; • Real; • Unknown; • Not estimated; A combination of several values is possible;
Deepfake	Liveness status selection: • Fake; • Real; • Not estimated; A combination of several values is possible;
Face IDs from events	Face IDs of persons that are created in the LUNA PLATFORM 5 system as a result of a detection event and extraction of attributes. Values are separated by commas, for the correct search must be specified in full;
Body attributes and properties	
Upper body colors	Top clothing color specification: • Undefined; • Black/Blue/Green/Grey/Orange/Purple/Red/White/Yellow/ Pink/Brown/Beige/Khaki/Multicolored; • Not estimated; A combination of several values is possible;
Lower body type	Bottom clothing type specification: • Undefined; • Trousers; • Shorts; • Skirt; • Not estimated; A combination of several values is possible;

Name	Description
Lower body colors	Bottom clothing color specification: • Undefined; • Black/Blue/Green/Grey/Orange/Purple/Red/White/Yellow/Pink/Brown/Beige/Khaki/Multicolored; • Not estimated; A combination of several values is possible;
Shoes color	Shoe color specification: • Undefined; • Black; • White; • Other; • Not estimated; A combination of several values is possible;
Headwear	Headdress specification: • Absent; • Present; • Undefined; • Not estimated; A combination of several values is possible;
Headwear colors	Headdress color specification: • Undefined; • Black; • White; • Other; • Not estimated; A combination of several values is possible;
Backpack	Backpack presence specification: • Absent; • Present; • Undefined; • Not estimated; A combination of several values is possible;

Name	Description
Sleeve	Sleeve length specification: • Short; • Long; • Undefined; • Not estimated; A combination of several values is possible;
Gender by body	Gender of a person to be detected, determined by the image of a body: • Female; • Male; • Undefined; • Not estimated; A combination of several values is possible;
Age category by body	Age range of a person to be detected, determined by the image of a body: • below 18; • from 18 to 44; • 45 to 60; • above 60;

Location	
City Area District Street House number Longitude(-180…180); Accuracy (0…90); Latitude(-90…90); Accuracy (0…90);	Event location
Other	
Comma-separated track IDs	Specifying track IDs

Name	Description
Add filter by meta***	Allows you to fill in a set of blocks to create a filter by the "meta" field. The number of meta filters is unlimited. The following blocks are required to be filled in when creating a filter by meta: • Key—the full path to the required meta field connected with events. • Value—any valid value for the meta field. • Type—selection of the data type stored in this meta field. The data type displays available operators and converts values into the desired data type when sent to the API. • Operator—select operators for a given data type from the list. Operator type depends on the selected data type (for more details see LUNA PLATFORM 5 API, "get events" section)

Search faces

Date from	Beginning of the search period by date and time of face creation
Date before	End of search period by date and time of face creation
External events ID	External event identifiers. To correctly search for the value indicated separated by commas and in full;
Similarity is not less than, %	The similarity value is not lower than the specified value, in percent
Lists	Selecting a list in which to search for a face
User data	Information about the person from the database (if available)

*Color coding of temperature values:

- increased temperature values will be marked in yellow;
- abnormal temperature values will be marked in red;
- normal temperature values will be marked in green.

See the LUNA Access documentation for more information on setting of temperature ranges.

**Deepfake license required

***For advanced users

To search by face or body image, select the "Photo" section, click on the field to upload an image from your computer, or drag and drop a photo into this field.

Image file requirements:

- *.jpeg, *.png or *.bmp format;

- image size no less than 320x250 and no more than 3840x2160 pixels;
- image may contain one or more people;
- image must have a person's face or body.

When loading a photo image containing many faces and/or bodies, the Interface detects all faces and/or bodies in the image, then displays them to the right of the loaded photo image and displays the number of detected faces and/or bodies (Figure 11). To reset the image, click on ✕ .
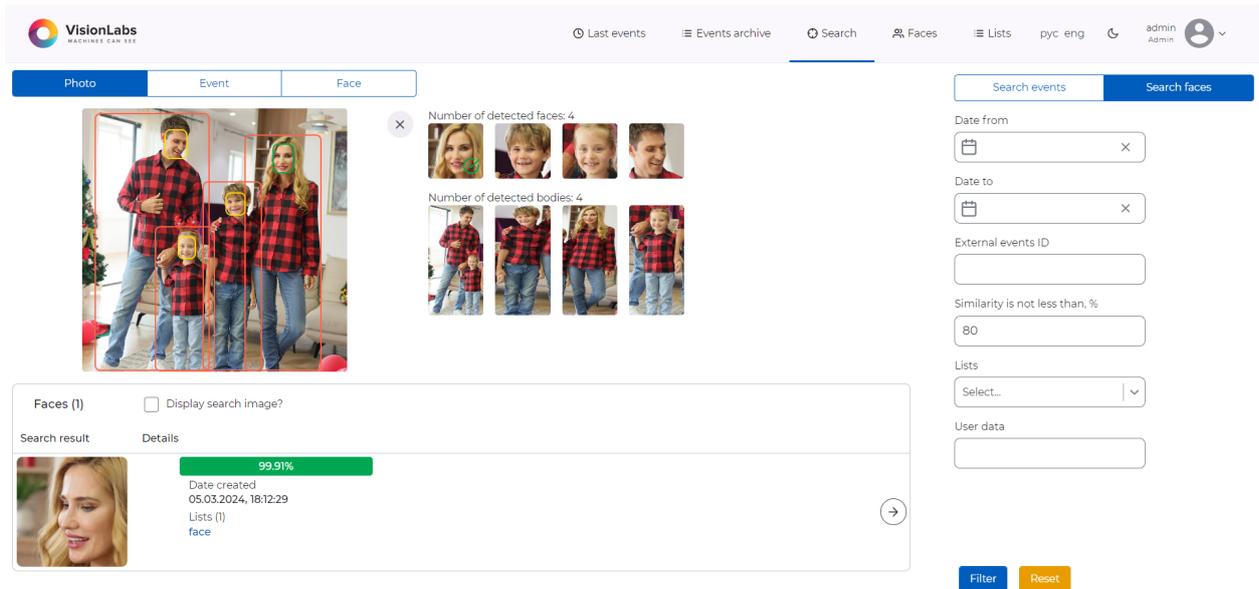

Figure 11: Photo image with multiple faces

To find similar faces or events with the face or body, select one face or body by clicking on it on the uploaded photo image. Then, in the filter block, select the necessary search options and click "Filter". To reset the parameter values, click the "Reset" button. The search results will be displayed at the bottom of the page (Figure 12).
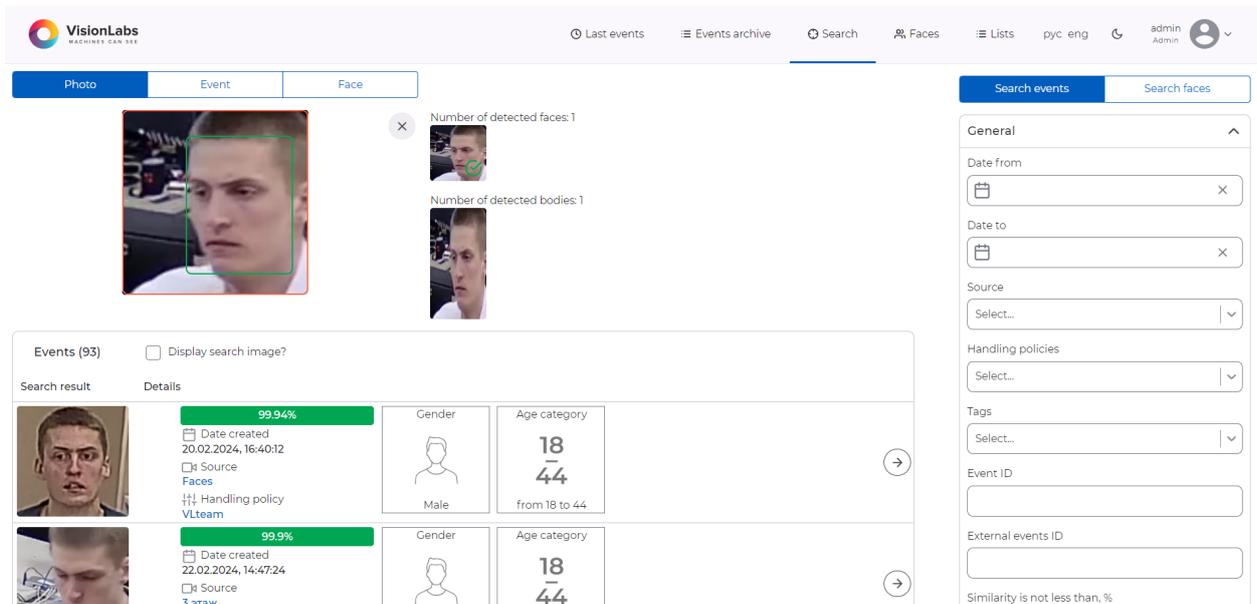
Figure 12: "Search" section. Search by events

The description of the elements of the search results block is presented in the tables (Table 5 and 6).

Table 5. Elements and parameters of the search results, if "Search events" is selected in the block with filters:

Name	Description
Search result	The face and/or body of a person from the event that is the most similar to the one selected in the uploaded photo
Search image	Normalized photo image of a person's face or body from the uploaded photo. Displayed if the "Display search image" checkbox is enabled
Details	• The similarity value of the reference face or body from the uploaded photo with the face or body from the event • Date created—date and time of the event creation; • Source—the event source that captured the event; • Handling policy—policy according to which the event was recorded
Face attributes, if a face is selected as the search object	• Gender—specification of gender (male/female), determined by the face from the event; • Age category—age determined by the face from the event;

Name	Description
Body attributes, if a body is selected as the search object	• Upper body colors—specification of the person's color top clothing in the photo from the event; • Lower body colors—specification of the person's color bottom clothing in the photo from the event; • Headwear—specification of the presence of person's headwear in the photo from the event; • Backpack—specification of the presence of person's backpack in the photo from the event;
→ | Go to	the "Event details" page

Table 6. Elements and parameters of the search results, if "Search faces" is selected in the block with filters:

Name	Description
Search result	The face of a person from the event that is the most similar to the one selected in the uploaded photo
Search image	Normalized photo image of a person's face from the uploaded photo. Displayed if the "Display search image" checkbox is enabled
Details	• The similarity value of the reference face from the uploaded photo with the face from the database • Date created—of adding a photo with a face to the database; • Lists (amount) — lists to which the person is attached • External ID — external face identifier; • Information — information from the database, linked to a face ;
→ | Go to	the "Face details" page

10 Faces section

The "Faces" section is intended for viewing, creating and deleting faces. The general view of the "Faces" section is presented below (Figure 13).
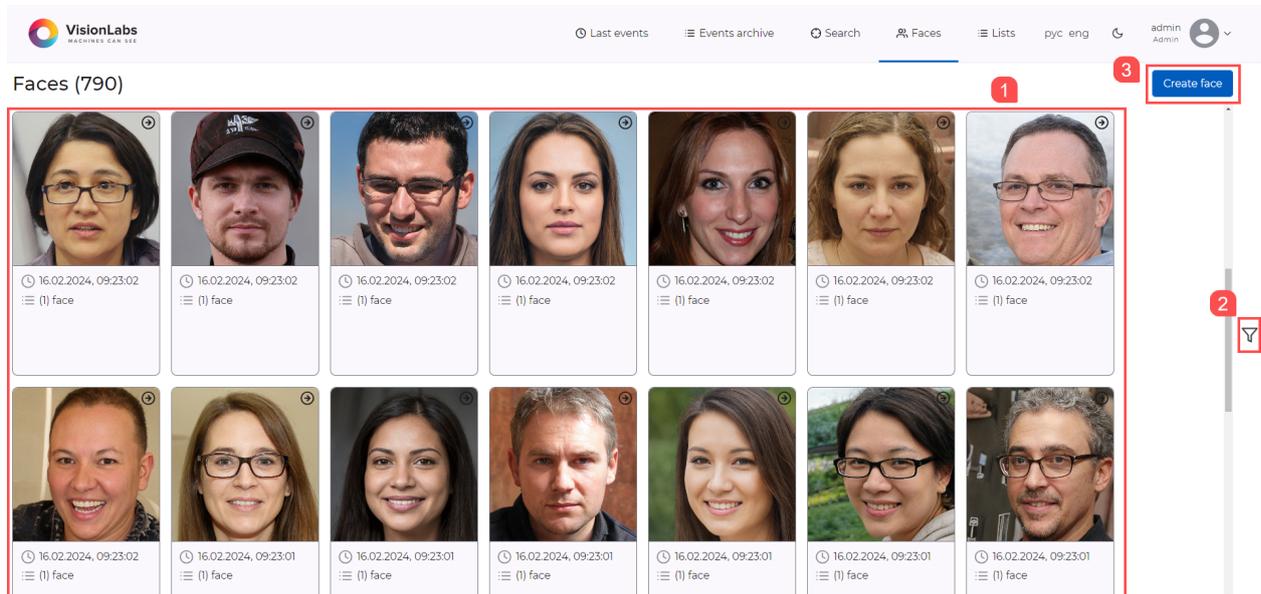

Figure 13: "Faces" Section

The "Faces" section contains the following elements:

- List of faces (1):
    - Photo of the face;
    - Information, such as the temperature of the person whose face is in the photo;
    - Date and time of creation of the face;
    - Lists that contain the face;
    - Face ID;
- Filters (2);
- Button to open the face creation form. (3)

Click on the filter icon ⑂ to find events by (Figure 14):

- Lists;
- Date of creation;
- External ID;
- Face ID;
- Information.
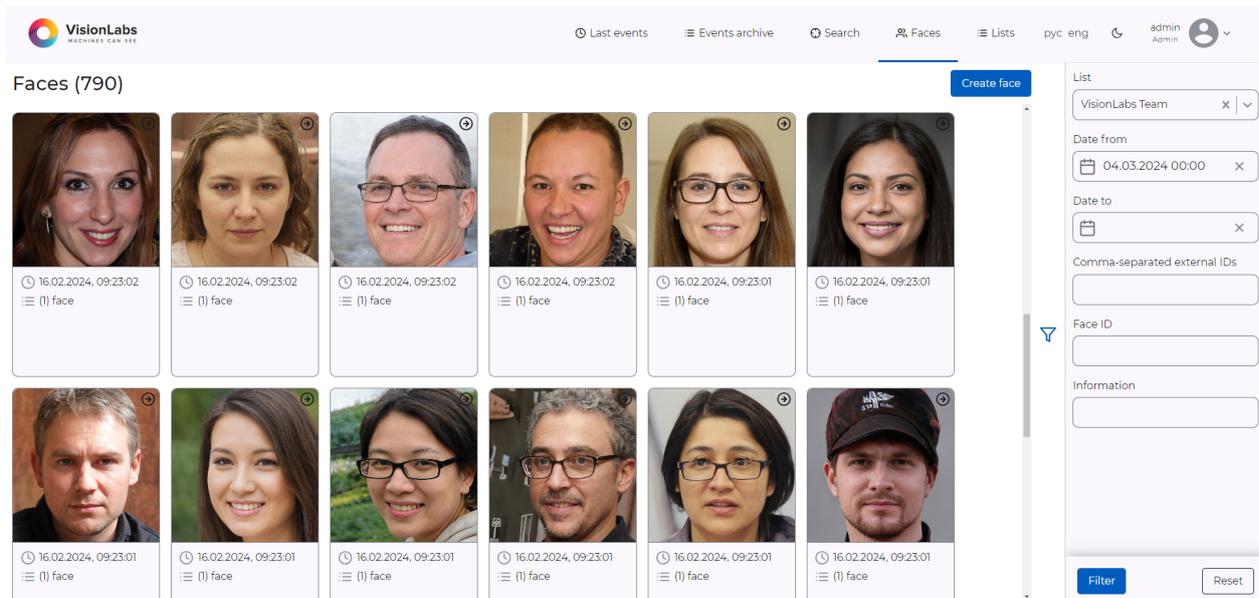
Figure 14: Filtering in the "Faces" section

Click on ⊕ from the list of faces to go to the face details.

10.1 Creating face

To add a new face, click on the "Create face" button in the upper right corner of the section page. The general view of the window for creating a face is presented below (Figure 15).

Figure 15: Form for adding a face

Enter the required information:

- Field for uploading a photo of a person — avatar (required to be filled out). There may be one face or several ones in the photo. If there is more than one face in the photo, then after uploading you have to select which face to be added in the list/lists — the selected face will be highlighted with a green frame. You can add more than one person via batch import;
- "Information" — information about the person;
- "External ID" — external identifier of the person;
- "Lists" — the name of the list to which the person will be added (multiple lists can be selected);
- "Check photo image quality for compliance with the ISO/IEC 19794-5:2011 standard" — the photo will be added to the list only after passing the ISO/IEC 19794-5:2011 verification.
- ✕ — button for resetting the uploaded photo image.

Image file requirements:

- *.jpeg, *.png or *.bmp format;
- image size no more than 15 MB and no more than 3840x2160 pixels;
- image may contain one or more people;
- image must have a person's face.

Fill in the fields and click the "Save" button. A message about the successful face creating will appear on

the screen.

10.2 Face details

To open the page with face details click on the arrow button on the face image from the "Top match" column in the "Last events" section or in the event details. The "Face details" page consists of two blocks (Figure 16).
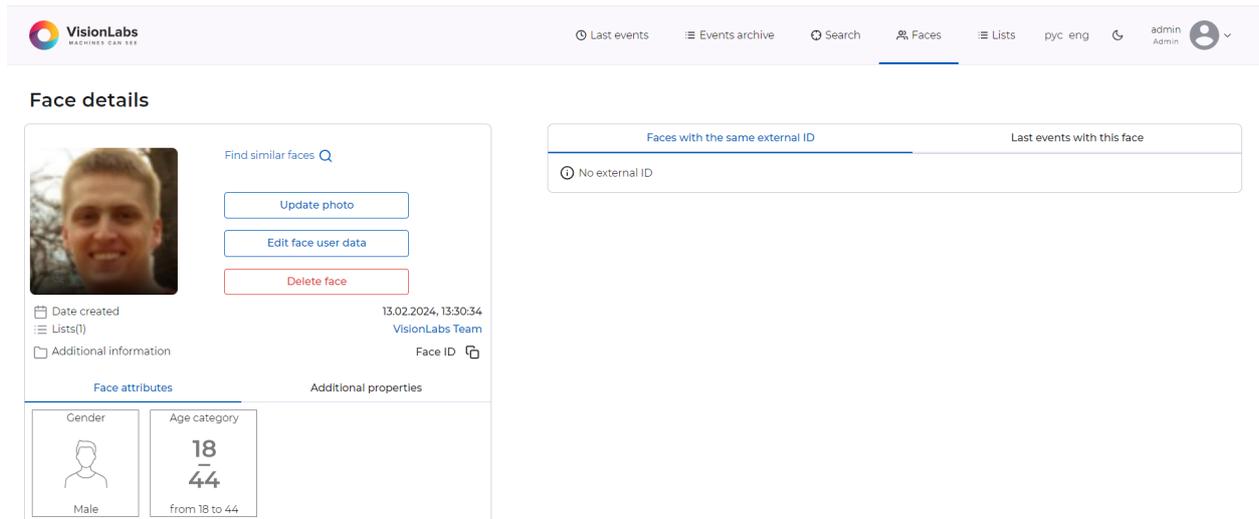

Figure 16: Face details

Descriptions of page elements are presented below (Table 7).

Table 7. Elements and parameters of the face details page

Name	Description
Photo image of a face	Avatar is a biometric sample that is created when uploading a photo image to the list (to the LUNA PLATFORM 5 system): when clicked on ⊕ the biometric sample opens in a new tab
Find similar faces 🔍 | When	clicked, a search for faces by face ID is performed in a new tab
Update photo	Opening the form to upload a new face photo image
Edit face user data	Opening a form for editing face data ("Information", "External ID", "Lists")
Delete face	Removal of face biometric sample, face photo image, and face details
Date created	Date and time of creation of the biometric sample

Name	Description
Information	User data from the database, linked to a face (upon availability)
External ID	External identifier of the face
Lists (N)	The list and number of lists to which the person is attached. Clicking on the name opens the list
Additional information	"Face ID" — when clicked on ⬚, the value is copied to the clipboard
Face attributes	"Attributes": "Gender" — gender of a person (male/female); "Age category" — indication of age category. Hover the cursor over the card to find out the exact age of the person determined from the face image.
Additional properties	Face properties: • Head tilt angle (roll); • Head tilt angle (pitch); • Head rotation angle (yaw); • Eye direction (pitch); • Eye direction (yaw); • Light; • Dark; • Blur; • Specularity; • Illumination • Mouth state; • Eye state
Faces with the same external ID.	Could be empty ("No external ID")
Photo image of a face	Avatar, sample or no photo
Date created	Date and time of creation of the biometric sample
Information	User data from the database, linked to a face (upon availability)
Lists (N)	The list and number of lists to which the person is attached. Clicking on a name opens a list
(→) | When	clicked, face details open

Name	Description
View all faces with the same external ID	When clicked, the search for faces by external ID is performed, and a list of all faces, whose external ID matches the one of the reference photo, opens.
Last events with this face	Could be empty ("No events with this face")
Photo image of a face from a video stream	Normalized image: - when clicked on ⊕ the biometric sample opens in a new tab; - when clicked on 🖾 the full frame from the video stream opens Similarity value of identified face with the face from control list (in percentage)
Date created	Date and time of recording the event with a face
Event source	The name of the event source that recorded the event with a face When clicked on the name of the event source, a preview of the video stream in real time opens
Handling policy	Name of the policy that processed the image in the video stream Clicking on the name of the policy opens the form for editing its parameters
(→) | When	clicked, the event details opens
View all events with this face	When clicked, an events archive page with maximum match result this person opens

10.2.1 Editing and deleting face

Click the "Update photo" button to update the photo image on the page with face details. The general view of the photo image update form is shown below (Figure 17).

Image file requirements:

- *.png , *.jpeg, or *.bmp format;
- image size no more than 15 MB and no more than 3840x2160 pixels;
- image may contain one or more people;
- image must have a person's face.
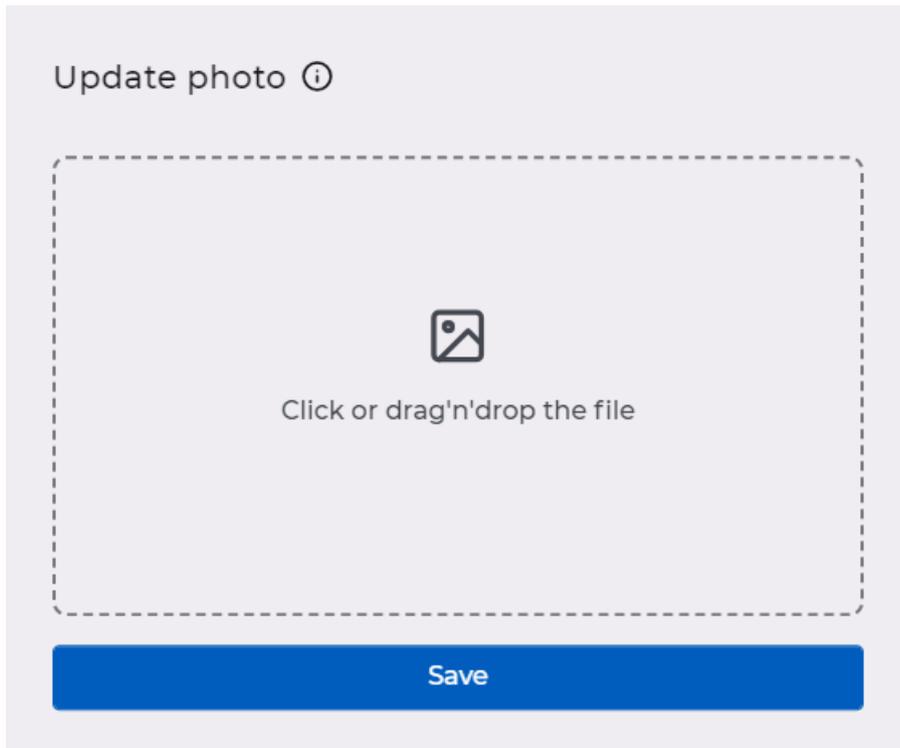
Figure 17: Form for updating a photo image on the page with face details.

Click the "Edit face user data" button to edit the face user data. The general view of the face user data editing form is shown below (Figure 18).

Face user data editing form contains:

- "User data" — information from the database, linked to a face (upon availability);
- "External ID" — external identifier of the face;
- "Lists" — lists to which the face is attached;
- "Save" button — button for saving changes.

If you need to go back to the page with face details during editing, press the Esc key on your keyboard.
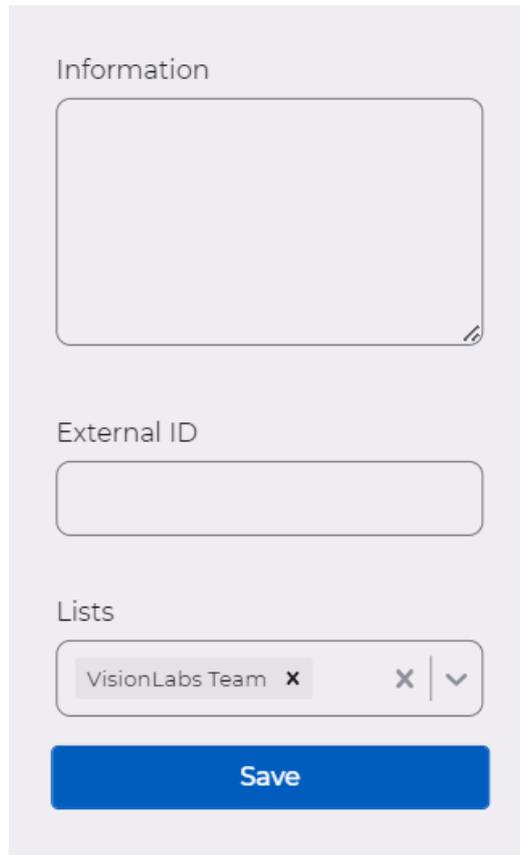
Figure 18: For for editing user data

Click the "Delete face" button to delete the face along with its data. Confirm the action in the pop-up window—click the "Delete" button or cancel the action using the "Cancel" button (Esc key on the keyboard). After successful removal, a corresponding notification will appear.

11 Lists section

The "Lists" section is intended for creating, deleting, editing, and viewing lists.

The general view of the "Lists" section is shown below (Figure 19).
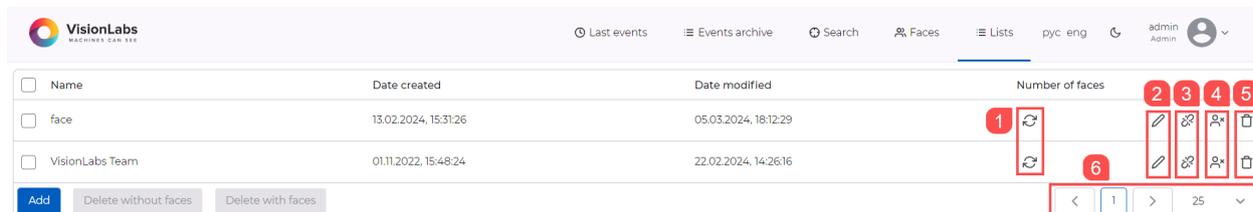

<div align="right">Figure 19: "Lists" section</div>

"Lists" section contains the following elements:

- table of lists:
    - checkbox — selection of a list or lists;
    - "Name" — name of the list;
    - "Date created" — date and time when the list was created;
    - "Date modified" — date and time when the list was last modified;
    - ↻ — button for counting the number of faces in the list (1);
    - ✎ — button for editing the list name (2);
    - ⛓ — button for detaching all faces from the selected list and deleting the selected list (3);
    - ♟× — button for deleting all faces in the selected list (4);
    - 🗑 — button for deleting the list with faces (5);
- "Add" button — button for creating a list;
- "Delete without faces" button — button for removing all faces from the list and deleting the list;
- "Delete with faves" button — button for deleting the list with faces in it;
- the number of lists displayed on the page is set by the switch in the lower right corner of the page. There can be 10, 25, 50 or 100 lists in total on one page (5).

In the table with lists, it is possible to sort by the columns "Name", "Date created" and "Date modified". To sort a column in the table, click on the column name.

The sorting arrow icon ↑ ↓ indicates the current sorting by one of the parameters: alphabetically, ascending, or descending.

11.1 List creation

To create a list, click on the "Add" button in the lower left corner of the page.

The general view of the form for creating a list is shown below (Figure 20).
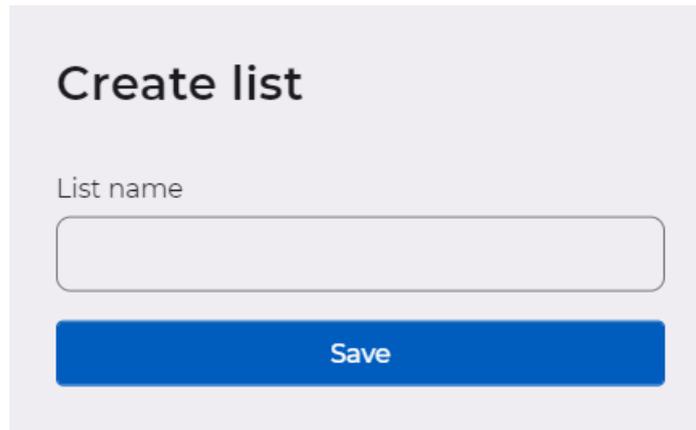
Figure 20: Form for creating a list

Enter a name for the list and click on the "Save" button. A message about the successful list creation will appear on the screen as well as the new list will appear in the table of lists.

11.2 Adding faces to the list

To add a face to the list, click on the line with the name of the list to which you want to add the face. The form for editing the list will open (Figure 21).

Figure 21: Empty form for editing the list

To add a face to the list, click on the "Add" button. A form for adding a face will open (Figure 22).

Figure 22: Form for adding a face

Enter the required information:

- Field for uploading a photo of a person — avatar (required to be filled out). There may be one face or several ones in the photo. If there is more than one face in the photo, then after uploading you have to select which face to be added in the list/lists — the selected face will be highlighted with a green frame. You can add more than one person via batch import;
- "Information" — information about the person;
- "External ID" — external identifier of the person;
- "Lists" — the name of the list to which the person will be added (multiple lists can be selected);
- "Check photo image quality for compliance with the ISO/IEC 19794-5:2011 standard" — the photo will be added to the list only after passing the ISO/IEC 19794-5:2011 verification.
- ✕ — button for resetting the uploaded photo image.

Image file requirements:

- *.jpeg, *.png or *.bmp format;
- image size no more than 15 MB and no more than 3840x2160 pixels;
- image may contain one or more people;
- image must have a person's face.

Fill in the fields and click on the "Save" button. A message about the successful face adding will appear

on the screen.

The form for list editing allows to search for faces by user data (the search is performed among faces containing the specified information), external ID or creation date in the line for quick search.

The added faces will be displayed in the form for list editing (Figure 23).
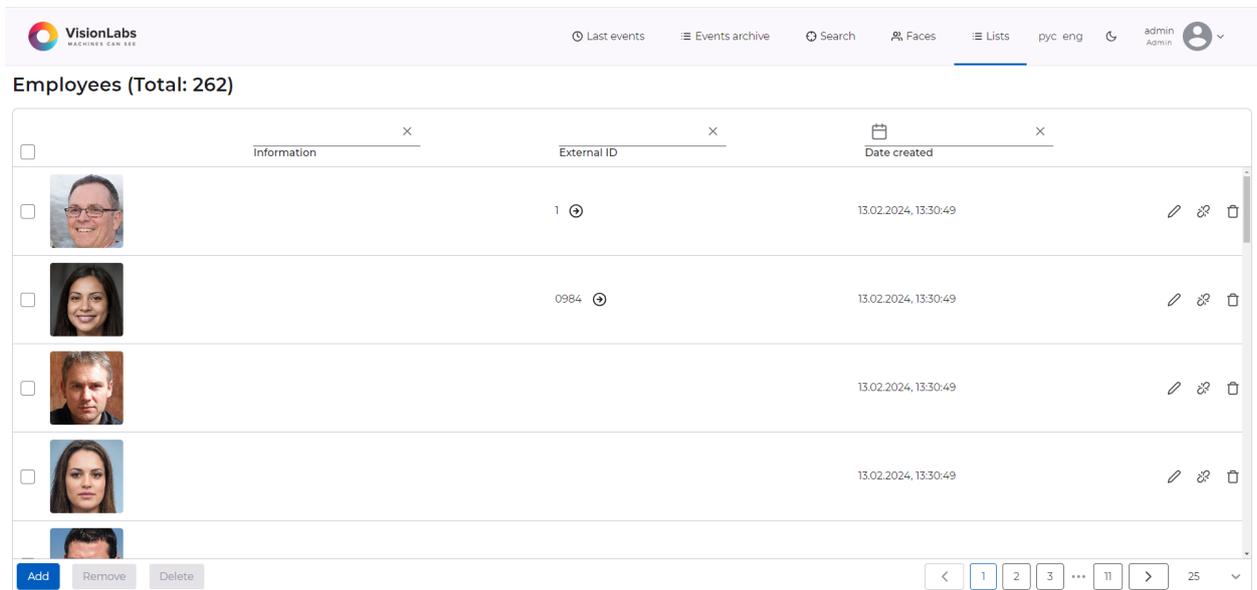
Figure 23: Form for list editing

The number of faces in this list is displayed next to the list name.

In the table with faces, it is possible to sort by the columns "User data", "External ID" and "Date created". To sort a column in the table, click on the column name.

The sorting arrow icon ↑ ↓ indicates the current sorting by one of the parameters: alphabetically, ascending, or descending. Click on a line to open the page with face details.

The number of faces displayed on the page is set by the switch in the lower right corner of the page. There can be 10, 25, 50 or 100 faces in total on one page.

To edit a face in the list, click on the ✎ button in the line with that face.

To detach a face from the list, click on the ⌀ button in the line with that face.

To delete a face from the list, click on the 🗑 button in the line with that face. To delete multiple faces from the list, select those faces and click on the "Delete" button. In the pop-up window (Figure 24), confirm the action—click on the "Delete" button or cancel the action by clicking on the "Cancel" button. Once a face or faces were successfully deleted from the list, a corresponding notification appears.
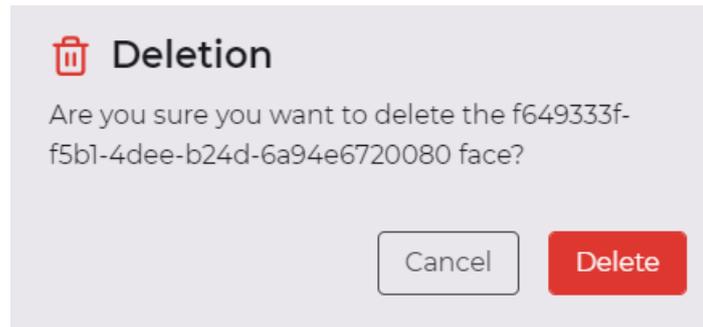
Figure 24: Confirmation of removing a face from the list

You can also delete more than one faces via creating task for deleting faces from the list;

11.3 List editing

Editing the name of the list is performed by clicking on the ✏ button in the line (Figure 19). The general view of the form for editing the list name is shown below (Figure 25).

Figure 25: Form for editing the list name

Change the name of the list and click on the "Save" button. A notification about successful list editing appears.

11.4 List deleting

Deleting the list with faces is performed by clicking on the 🗑 button (Figure 19).

To delete multiple lists, select those lists. Then click on the "Delete with faces" button, if you need to delete both the list and the faces in it, or click the "Delete without faces" button if you want to delete only the list. To detach all faces from the selected lists and delete the lists, check the boxes for the names of these lists, and click the ⛓ button (Figure 26).

Figure 26: Selecting lists to delete

In the pop-up window (Figure 27), confirm the action — click on the "Delete" button or cancel the action by clicking on the "Cancel" button. A corresponding notification appears after successful list deletion.
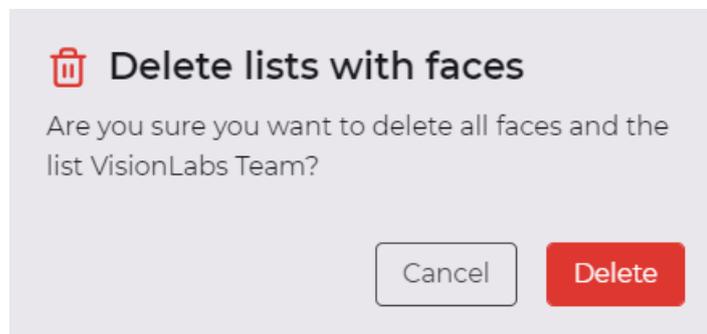
Figure 27: Confirmation of deletion of the selected lists

12 Handling policies section

The "Handling policies" section is intended for creating, deleting, viewing policies, and editing their parameters.

Handling policies (handlers) can be static or dynamic.

If the handler is static, its parameters are specified when creating the handler.

If the handler is dynamic, then you can change its parameters when generating an event. For this, create a `generate events` request with a specific content type (see API Reference Manual of the LUNA PLATFORM 5 documentation). In a dynamic handler, administrator can allow users to specify parameters that change with each request. At the same time other technical parameters can be set separately and left hidden from the user. With a static handler, administrator would have to create a new handler for each new task.

The general view of the "Handling policies" section is presented below (Figure 28).

Figure 28: "Handling policies" section

"Handling policies" section contains the following elements:

- table of policies:
  - "Description"—policy name;
  - "Handling policy ID"—policy identifier;
  - "Handler type"—static or dynamic policy;
- ✎—button for editing policy parameters (1);
- 🗑—button for deleting the policy (2);
- "Add static" button—button for creating a static handling policy;
- "Add dynamic button—button for creating a dynamic handling policy;
- the number of policies displayed on the page is set by the switch in the lower right corner of the page. There can be 10, 25, 50 or 100 policies in total on one page (3).

12.1 Policy creation

12.1.1 Static policy creation

To create a static policy, click on the "Add static" button (Figure 28). A form will open to select how to create the static policy (Figure 29):

- preconfigured typical policy templates (policies 1–6);
- step by step custom policy ("Other").
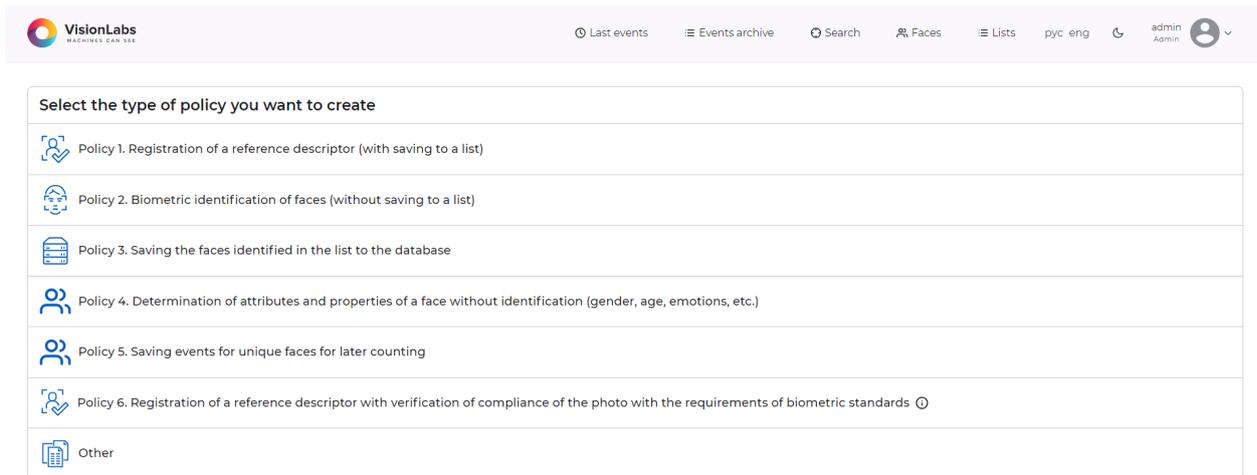
Figure 29: Selecting the template of static policy

To quickly create simple static policies, use one of the typical policy templates.

Six standard templates are available:

- "Policy 1. Registration of a reference descriptor (with saving to a list)"—allows user to detect a face on the frame, check Liveness, and save the face to a specified list;
- "Policy 2. Biometric identification of faces (without saving to a list)"—allows user to detect all faces in the frame and compare them with all faces in the specified list;
- "Policy 3. Saving the faces identified in the list to the database"—allows user to detect all faces on the frame, check Liveness, compare detected faces with all faces in the specified list, and if the comparison is successful, save the face to the specified list;
- "Policy 4. Determination of attributes and properties of a face without identification (gender, age, emotions, etc.)"—allows user to detect all faces in the frame, perform all possible checks, and save the event;
- "Policy 5. Saving events for unique faces for later counting"—allows user to detect all faces in the frame, check Liveness, compare the detected faces with all faces in the list of unique faces, and if this face is not in the list, save the face to this list of unique faces;
- "Policy 6. Registration of a reference descriptor with verification of compliance of the photo with the requirements of biometric standards*—allows you to save the reference descriptor in a specific

list only for those photos that have been verified in accordance with the biometric standards.

* The following checks are missing in the beta version:

- it is not allowed to use retouching and image editing;
- image cropping is allowed;
- compression code: JPEG (0 x 00), PNG (0 x 03).

When user clicks on a line with a standart template (policies 1–6), a window opens for entering the main parameters of a preconfigured policy (Figure 30).

Figure 30: Form for entering basic parameters and creating a preconfigured static policy (policy 1)

Fill in all the required parameters and click on the "Create" button. A window will open with a message about the successful creation of the policy (Figure 31).
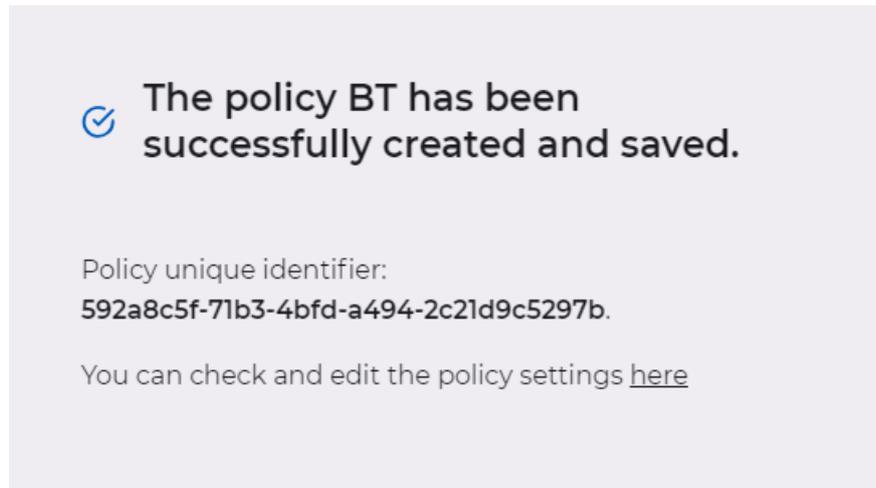
Figure 31: Message about the successful creation of the "Registration of a reference BT" static policy (policy 1)

Click anywhere outside the successful static policy generation message to navigate to the "Select the type of policy you want to create" form (Figure 29).

To create a unique static policy that requires detailed parameter settings, use the step-by-step custom policy.

When user clicks on the line with a step-by-step custom policy ("Other"), a form for step-by-step static policy creation will open (Figure 32).

Figure 32: "Create policy" form

Fill in all the required parameters and click on the "Next" button to proceed to the next step. After setting all the parameters, a window with a message about the successful creation of the policy will open.

12.1.2 Dynamic policy creation

To create a dynamic policy, click on the "Add dynamic" button on the page with the list of policies (Figure 28). In the opened window, enter the name of the new dynamic policy and click "Save" (Figure 33). If you

need to go back to the page with the list of handlers during creating a handler, press the Esc key on your keyboard.
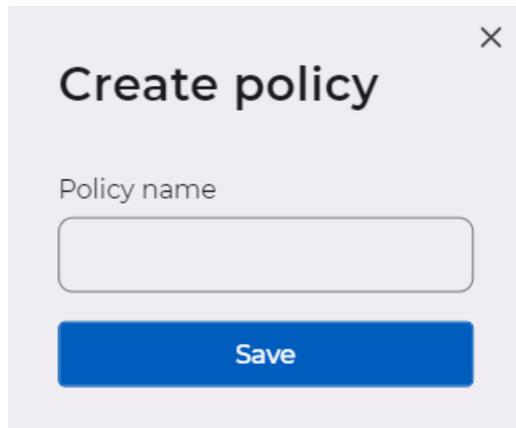
Figure 33: Form for creating dynamic policy

12.2 Policy editing

12.2.1 Static policy editing

The general view of the static policy editing form is shown below (Figure 34).
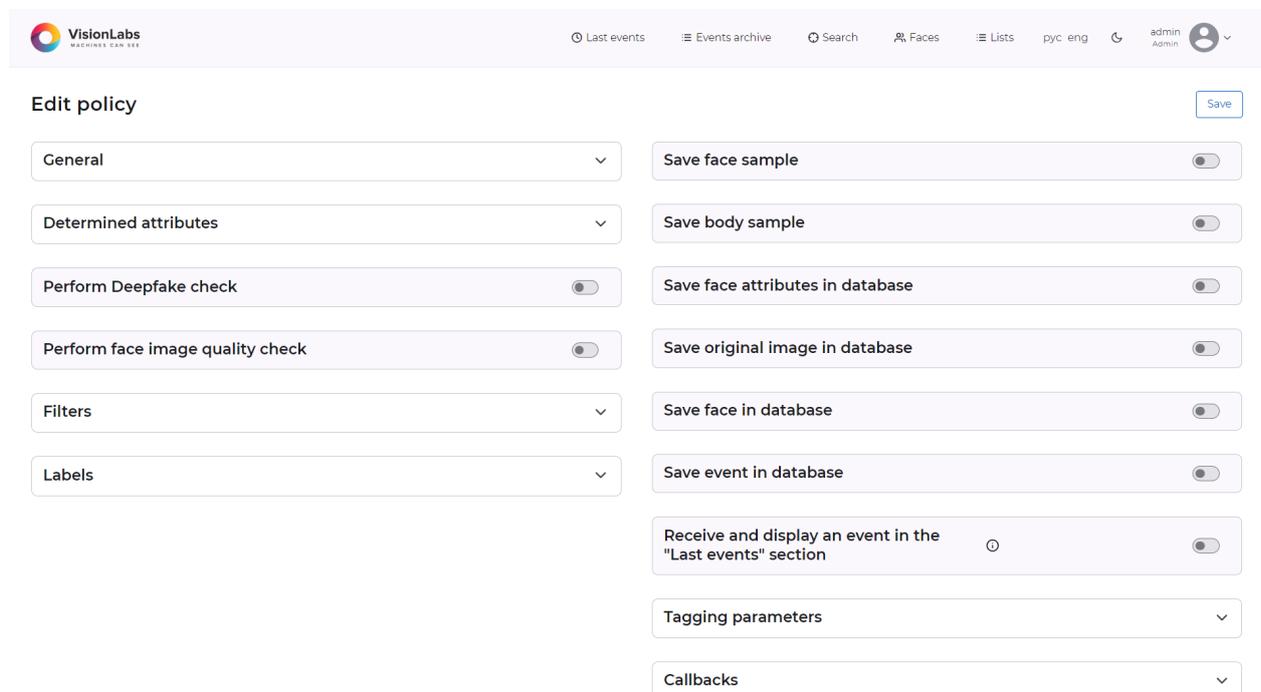
Figure 34: Static policy editing form

Description of the parameters of the static policy editing form is given in the tables (Table 8-15).

Table 8. Parameters of the policy editing form: general parameters and determined attributes

Parameter	Description	Default value
General		
Policy name*	Specifies the name that will be displayed in the list of other policies	-
Determined attributes		
Detect face	Face detection in photo images When enabled, the "Face descriptor" and "Basic attributes (gender, age)" options become avalible	Off
Estimate people count	Counts the number of people in the frame	Off
Face descriptor	Image processing and creation of a data set in a closed, binary format using a special extraction algorithm. When the attribute is enabled, the options "Labels", "Save descriptor in database", "Save face to database", "Attach face to list", "Save event in cases where a face was found", and "Display event in cases where a face was found" become available	On
Basic attributes (gender, age)	Assessment of the basic attributes of a person in the image. On When the attribute is enabled, the "Save if" and "Call only in cases" options become available	
Head position	Assessment of the head position (angles of inclination and rotation of the head left/right and up/down). When the attribute is enabled, the options "Discard face images with head rotation/tilt angle above" become available	On
Emotion	Determination of the dominant emotion (anger, disgust, fear, happiness, neutral, sadness, surprise)	Off
Mask	Assessment of the presence or absence of a medical mask or mouth covering. When the attribute is enabled, the filter "Process images only if detected" becomes available	Off

Parameter	Description	Default value
Image quality	Determination of quality (the presence of overexposure, blurring, underexposure, the presence of glare on the face, uneven lighting)	On
Eye direction	Assessment of the direction of a person's gaze in the image	Off
Eye status	Evaluating whether a person's eyes are open or closed in the image, as well as determining key points of the irises of the eyes	Off
Mouth status	Closed or occluded mouth detection and smile detection	Off
Perform Liveness check	Enabling Liveness check	Off
Position of 68 feature points of the face	Determination of 68 feature points of the face (requires additional time for calculations, it is used to determine emotions, eye direction or Liveness check)	Off
EXIF metadata	Defining image metadata	Off

Detect body | Face detection in photo images | Off |

Body descriptor	Image processing and creation of a data set in a closed, binary format using a special extraction algorithm. When the attribute is enabled, the "Labels" option becomes available	On
Body basic attributes	Gender and age estimation based on body silhouette	
Upper body attributes based on body silhouette	Estimation of headwear, upper body clothing color, and sleeve length	
Lower body attributes based on body silhouette	Estimation of lower body clothing type and shoe color	
Accessories	Estimation of the presence or absence of a backpack	

Table 9. Parameters of the policy editing form: Deepfake check **

Parameter	Description	Default value
Perform Deepfake check	Determination of digital manipulations for replace one person's likeness convincingly with that of another	Off
Discard images of faces with a Deepfake score below the specified score below the specified	Ignoring images with a Liveness score below the specified value. Possible values: from 0 to 1, where 1 is a real person, 0 - fake	0,5
Use specified Deepfake mode	Possible values: • Mode 1; • Mode 2; The choice of mode determines what set of neural networks perform photo processing for deepfake checking. For more information about the neural networks used in deepfake verification modes, contact VisionLabs technical support.	Mode 2

** Deepfake license required. Deepfake check is not performed on normalized (centered and cropped) images after face detection.

Table 10. Parameters of the policy editing form: image quality check

Parameter	Description	Default value
Perform face image quality check		
Image format	Must be saved in .jpeg or .png format (correct verification). Possible values: • JPEG; • JPEG2000; • PNG;	JPEG; PNG JPEG2000;
Image size in Mb	This assessment determines the size of the image in bytes. It also compares the estimated value with the specified threshold	5120: 2097152

Parameter	Description	Default value
Image width in pixels	This assessment determines the width of the image in pixels. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	180:1920
Image height in pixels	This assessment determines the width of the image in pixels. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	180:1080
Image aspect ratio	This assessment determines the proportional ratio of the image width to height. It also compares the estimated value with the specified threshold	0.74:0,8
Degree of illumination uniformity	It is possible to evaluate the uniformity of illumination according to the requirements specified in the ICAO standard. It also compares the estimated value with the specified threshold (correct verification)	0.3:1
Degree of image specularity	Bright light artifacts and flash reflection from glasses are not allowed (indirect verification)	0.3:1
Degree of image blureness	The pixel colors of front-type photo images must be represented in the 24-bit RGB color space, in which each pixel has 8 bits for each color component: red, green, and blue (indirect verification)	0.61:1
Degree of absence of underexposure in the photo	An underexposure assessment is available. It also compares the estimated value with the specified threshold	0.5:1
Degree of absence of overexposure in the photo	Too much exposure assessment is available. It also compares the estimated value with the specified threshold	0.57:1
Face illumination uniformity	It is possible to evaluate the uniformity of illumination according to the requirements specified in the ICAO standard. The face should be evenly lit so that there are no shadows or glare on the face image. It also compares the estimated value with the specified threshold (correct verification)	0.5:1

Parameter	Description	Default value
Skin tone dynamic range	This assessment is a determination of the ratio of the brightness of the lightest and darkest areas of the face according to the requirements specified in the ICAO standard. It also compares the estimated value with the specified threshold (correct verification)	0.5:1
Degree of uniformity of the background	This assessment determines the degree of background uniformity from 0 to 1, where: • 0—non-uniform background; • 1—uniform background;	0.5:1
Degree of lightness of the background	This rating determines the degree of background brightness from 0 to 1, where: • [0…0.1]—black background; • [0.1…0.3]—dark background; • [0.3…0.97]—light background; • [0.97…1]—white background;	0.5:1
Presence of radial distortion (Fisheye effect)	Possible values: No—the Fisheye effect is not presented in the image; Yes—the Fisheye effect is presented in the image	No
Type of image color based on face	Possible values: Color; Grayscale; Infrared—near-infrared	Color
Shoulders position	This assessment determines the position of the shoulders if they are in the frame: Parallel Non-parallel Hidden	Parallel
Face width in pixels	This assessment determines the width of the face in pixels. It also compares the estimated value with the specified threshold	180:1920

Parameter	Description	Default value
Face height in pixels	This assessment determines the height of the face in pixels. It also compares the estimated value with the specified threshold	180:1080
Face offset from the top edge of the image in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification)	20:50
Face offset from the bottom edge of the image in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification)	20:50
Face offset from the left edge of the image in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification)	20:50
Face offset from the right edge of the image in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification)	20:50
Head yaw angle	Head rotation should be no more than 5° from the frontal position (correct verification)	-5:5
Head pitch angle	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification). The tilt of the head should be no more than 5° from the frontal position (correct verification)	-5:5
Head roll angle	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification). The inclination of the head should be no more than 8° from the frontal position (correct verification)	-8:8
Gaze yaw angle	This assessment determines the direction of gaze (yaw)	-5:5
Gaze pitch angle	This assessment determines the direction of gaze (pitch)	-5:5

Parameter	Description	Default value
Probability of smile presence	The facial expression must be neutral (indirect verification).	0:0.5
Probability of mouth occlusion	It is not allowed to cover the face with hair or foreign objects along the entire width, from the eyebrows to the lower lip (indirect verification)	0:0.5
Probability of open mouth presence	This assessment determines the state of the mouth The mouth is closed (correct verification)	0:0.5
Smile properties	This assessment determines the state of the mouth The facial expression must be neutral (indirect verification). Possible values: None—smile is not found; Smile with closed mouth; Smile with teeth	None
Glasses	Sun glasses are not allowed (correct verification). Possible values: Sunglasses; Eyeglasses; No glasses	No glasses
Left eye state	Both eyes are open normally for the respective subject (considering behavioral factors and/or medical conditions, correct verification). It is not allowed to cover the face with hair or foreign objects along the entire width, from the eyebrows to the lower lip (indirect verification) Possible values: Open; Closed; Occluded	Open

Parameter	Description	Default value
Right eye state	Both eyes are open normally for the respective subject (considering behavioral factors and/or medical conditions, correct verification). It is not allowed to cover the face with hair or foreign objects along the entire width, from the eyebrows to the lower lip (indirect verification). Possible values: Open; Closed; Occluded	Open
Red eyes effect presence	Possible values: No—there is no red-eye effect; Yes—there is a red-eye effect	No
Distance between eye centers in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any),the top point of the forehead area and the chin (correct verification) The distance between the centers of the eyes must be at least 120 pixels or at least 45 pixels in accordance with paragraph 12 of the procedure for placing and updating biometric personal data in a unified biometric system (correct verification)	90:100
Horizontal head size relative to image size	This assessment determines the horizontal head size relative to the image size. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	0.5:75
Vertical head size relative to image size	This assessment determines the vertical head size relative to the image size. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	0.6:0.9
The position of the center point of the face horizontally relative to the image	This assessment determines the horizontal position of the center point relative to the image. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	0.45:0.55
The position of the center point of the face vertically relative to the image	This assessment determines the vertical position of the center point relative to the image. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	0.3:0.5

Parameter	Description	Default value
Eyebrows state	The facial expression must be neutral (indirect verification). Possible values: Neutral; Raised; Squnting; Frowning	Neutral
Headwear type	Possible values: None; Baseball_cap; Beanie; Peaked_cap; Shawl; Hat with earflaps; Helmet; Hood; Hat; Other	None
Presence of natural lighting	The face should be evenly lit so that there are no shadows or glare on the face image (correct verification) Possible values: No—the lighting is unnatural; Yes—the lighting is natural	Yes

Table 11. Parameters of the policy editing form: filters

Parameter	Description	Default value
Perform face image quality assessment		
Filters		

Parameter	Description	Default value
Discard images with multiple faces	Determination of images containing multiple faces. Possible values: Select only one face of the best quality—process an image containing several faces, but detect only a face of the best quality; Do not discard—detect all faces in the image; Discard—ignore an image containing multiple faces	Do not discard
Reject descriptors with quality below the specified threshold	Ignoring low quality images. To use the filter, you must enable the determination of the descriptor in the determined attributes	0,5
Process images only if detected	Possible values: Missing—the event is created when there is no overlap of the face by the medical mask (no mask); Occluded—the event is created in case of detection of face overlapping; Medical mask—the event is created when a medical mask is detected on the face. Several filter values can be specified. Available only when defining the "Medical mask" attribute	-
Discard face images with head rotation angle (to the left or right, yaw) above	Ignoring images in which the person's head is turned to the left or right at a too large angle —no information will be extracted when detecting a face and evaluating the angle of head rotation. Available only if the "Head position" attribute is enabled	30
Discard face images with head tilt angle (to the left or right, roll) above	Ignoring images in which a person's head is tilted to the left or right at a too large angle—no information will be extracted during face detection and head tilt evaluating. Available only if the "Head position" attribute is enabled	40
Discard face images with head tilt angle (up or down, pitch) above	Ignoring images in which the person's head is tilted up or down at a too large angle —no information will be extracted during face detection and head tilt evaluating. Available only if the "Head position" attribute is enabled	30

Parameter	Description	Default value
Discard images of faces with a Liveness score below the specified	Ignoring images with a Liveness score below the specified value. Possible values: from 0 to 1. Available only if the "Perform Liveness check" attribute is enabled	0,5
Discard images of faces with the Liveness quality lower than the specified	Ignoring images with a Liveness quality lower than the specified. Possible values: from 0 to 1. Available only if the "Perform Liveness check" attribute is enabled	0,5
Process images of faces only with Liveness states	Processing images with Liveness status: Spoof—the absence of a "live" person in the frame; Real—the presence of a "live" person in the frame; Unknown. Available only if the "Perform Liveness check" attribute is enabled	-
Process images of faces only with Deepfake states	Processing images with Deepfake status: Fake—the absence of a "live" person in the frame; Real—the presence of a "live" person in the frame. Available only if the Perform Deepfake check" attribute is enabled	-
Filter images based on face image quality assessment results	Filter images according to the parameters set in the "Perform face image quality assessment" setting that comply with ISO/IEC 19794-5:2011 and ICAO. Available only when the parameter "Perform face image quality assessment*" is enabled	Off

Table 12. Parameters of the policy editing form: labels

Parameter	Description	Default value
Labels		

Parameter	Description	Default value
Label name	Specify the name that will be displayed in the policy settings, including the parameters for creating and saving an image/descriptor/event/face, adding a tag	-
Identify among	Searching for a detected person for identification among those created in the database: • Faces; • Events	Faces
Search for a descriptor	Among the events created in the database, search for a descriptor: • Faces; • Bodies Only for "Identify among events"	Faces
Perform search by	• "List"—specifies a list for identifying a person according to a specific control list (only for "Identify among faces");	-
	• "Source"—specifies event source name (only for "Identify among events");	
	• "Comma-separated Face IDs"—specifies the values of identifiers of faces in LP5 in UUID format for performing an accurate search;	
	• "Comma-separated event IDs"—specifies the values of the event identifiers in LUNA PLATFORM 5 in UUID format for performing an accurate search (only for "Identify among events");	
	• "User data"—specifies person's data (up to 128 characters);	

Parameter	Description	Default value
	• "Comma-separated event external IDs"—specifies the values of third-party external identifiers (only for "Identify among events");	
	• "Comma-separated face external IDs"—specifies the values of third-party external identifiers (only for "Identify among faces");	
	• "Comma-separated track IDs"—specifies the values of the track identifiers in LUNA PLATFORM 5 in the UUID format for performing an accurate search (only for "Identify among events");	
	• "Age category"—indicates the lower and/or upper limits of the age of the person (only for "Identify among events");	
	• "Gender"—indicates female or male gender (only for "Identify among events");	
	• "Emotions"—specifies anger, disgust, fear, happiness, neutral, sadness, surprise, it is possible to specify several values (only for "Identify among events");	
	• "Medical mask"—specifies the detection of the presence/absence of a medical mask, mouth overlap: medical mask, no intersection, mouth is covered, it is possible to specify several values (only for "Identify among events");	
	• "Comma-separated tags"—specifies a tag or tags (only for "Identify among events");	

Parameter	Description	Default value
	• "Similarity"—a value from 0 to 1 is specified (only for "Identify among events");	
	• "Handling policy"—specifies policy name, it is possible to specify several values (only for "Identify among events");	
	• "Comma-separated track IDs"—specifies IDs of tracks (only for "Identify among events");	
	• "Date from"—specifies the period of face creation in LUNA PLATFORM 5;	
	• "Date to"—specifies the period of face creation in LUNA PLATFORM 5.	
	• "Age category by body"—specifies the age range (only for "Identify among events);	
	• "Gender by body"—specifies the gender (only for "Identify among events);	
	• "Upper body colors"—specifies top clothing color (only for "Identify among events);	
	• "Sleeve"—specifies sleeve length (only for "Identify among events);	
	• "Headwear"—specifies headdress (only for "Identify among events);	
	• "Headwear color"—specifies headdress color (only for "Identify among events);	

Parameter	Description	Default value
	• "Backpack"—specifies backpack presence (only for "Identify among events);	
	• "Lower body type"— specifies bottom clothing type (only for "Identify among events);	
	• "Lower body colors"— specifies bottom clothing color (only for "Identify among events);	
	• "Shoes color"— specifies shoe color (only for "Identify among events);	
	Each filled field imposes a search restriction—the comparison will be successful only if all the search conditions are met	
Location (only for "Identify among events")	"District"; "Area"; "City"; "Street"; "House number"; "Longitude (-180…180)"; "Accuracy (0…90)"; "Latitude (-90…90)"; "Accuracy (0…90)"	-
Filter search result by	"Gender"—specifies the gender for which the face comparison is performed; "Age category"—specifies the lower and/or upper limits of the age of the face is indicated for comparison; "Liveness"—specifies Liveness state (Spoof, Real or Unknown)	-
Additional search parameters	"The maximum number of similar ones in the search results"; "Accuracy threshold"—a value from 0 to 1	-

Table 13. Parameters of the policy editing form: save parameters

Parameter	Description	Default value
Save parameters		
Save face sample	Saving the event without creating a face in the LUNA PLATFORM 5 database. If enabled, images are saved unconditionally in the database. For selective saving, you must specify: "Save if": • "Gender"—the gender of the face in the image matches the specified; • "Age category"—the age of the face in the image matches the specified limits; • "Liveness"—specifies Liveness state (Spoof, Real or Unknown); • "Deepfake"—specifies Deepfake check (Fake or Real); — "Save face image in cases where a face was found": • "Labels"—the list of labels, specifies the names of labels (the image is saved when the settings of labels are met); • "With precision"—the lower and/or upper limit of the satisfaction of the comparison result with the parameters specified in the comparison (from 0 to 1)	On
Save body sample	Saving the event without creating a face in the LUNA PLATFORM 5 database. If enabled, images are saved unconditionally in the database. For selective saving, you must specify: "Save if": • "Gender"—the gender of the face in the image matches the specified; • "Age category"—the age of the face in the image matches the specified limits; • "Liveness"—specifies Liveness state (Spoof, Real or Unknown); • "Deepfake"—specifies Deepfake check (Fake or Real); — "Save body image in cases where a body was found": • "Labels"—the list of labels, specifies the names of labels (the image is saved when the settings of labels are met); • "With precision"—the lower and/or upper limit of the satisfaction of the comparison result with the parameters specified in the comparison (from 0 to 1)	On

Parameter	Description	Default value
Save descriptor in database	Saving the created descriptor in the LUNA PLATFORM 5 database. If enabled, the unconditional saving of the descriptor in the database is performed. For selective saving, specify the parameters (for more information see description of "Save face sample" parameter).	Off
	— "FaceAttributes storage time"—indicates the time in seconds after which the descriptor will be deleted from the database	-
Save original image in database	Saving the original image in the LUNA PLATFORM 5 database.	Off
	— "Use external link as original image URL"—if enabled, the link to the external image is stored in the address of the original image, thus avoiding image duplication in the database. If a biometric sample was sent in the request and it was stored in the Image Store, then the link to it will be indicated in the address of the original image. For selective saving, specify the parameters (for more information see description of "Save face sample" parameter)	Off
Save face in database	Saving the face detected in the image in the LUNA PLATFORM 5 database with the creation of a face in the database. Saving is possible only when the option "Save descriptor in database" is enabled. If enabled, the unconditional saving of the descriptor in the database is performed For selective saving, specify the parameters (for more information see description of "Save face sample" parameter)	Off
	— "Attach face to list"—adds the saved face to the control list or lists in LUNA PLATFORM 5. Possible only if the option "Save descriptor in the database" is enabled. For selective saving, specify the parameters (for more information see description of "Save face sample" parameter)	Off
Save event in database	Saving the detection/identification event in the LUNA PLATFORM 5 database. If enabled, all events are stored unconditionally in the database. For selective saving,specify the parameters (for more information see description of "Save face sample" parameter)	On

Parameter	Description	Default value
Receive and display an event in the "Last events" section	Displaying an event in the "Last events" section. For selective displaying of events, specify the parameters (for more information see description of "Save image in database" parameter)	On

Table 14. Parameters of the policy editing form: tagging parameters

Parameter	Description
Tagging parameters	
Tag name*	Assigning a tag of the given name when conditions are met. In the absence of parameter specifications, the assignment is unconditional.
Save if	"Gender"—the gender of the face in the image matches the specified; "Age category"—the age of the face in the image matches the specified limits; "Liveness"—specifies Liveness state (Spoof, Real or Unknown); "Deepfake"—specifies Deepfake check (Fake or Real)
Add a tag for each case where a face was found	"Labels"—the list of labels, specifies the names of labels; "With precision"—the lower and/or upper limit of the satisfaction of the comparison result with the parameters specified in the comparison (from 0 to 1)

* Required field

Table 15. Parameters of the policy editing form: callbacks

Callbacks allows you to send generated events (notifications) to the third-party system at the specified URL. A mechanism for notifications is based on the principles of HTTP webhooks. They provide asynchronous interaction between systems, allowing external services to react to the emergence of events.

Parameter	Description	Default value
Add callback		
Type	Protocol type when creating a notification	HTTP
URL	Address of the external system where the notification will be sent	-
Authorization type	Selecting the type of authorization into an external system and setting up authorization data. The basic type of authorization requires specifying login and password to enter an external system	Basic
Timeout (seconds)	Maximum time to wait for a request to complete	60
Request body format	Data interchange format: JSON or MessagePack	application/json
HTTP Headers	HTTP Request Headers	-

Call only in cases where	Conditions for sending notification
	Activated when determination of basic attributes (gender, age) is enabled, see the Table 9
	— Gender:
	  • Female;
	  • Male;
	— Age category:
	  • below 18;
	  • from 18 to 44;
	  • from 45 to 60;
	  • above 60;
	Activated when Liveness check is enabled, see the Table 9
	— Liveness:
	  • Spoof;
	  • Real;
	  • Unknown;
	Activated when Deepfake check is enabled, see the Table 10
	— Deepfake:
	  • Fake;
	  • Real.	

Parameter	Description	Default value
Call only in cases where a person or body has been found	• "Labels"—the list of labels, specifies the names of labels (the image is saved when the settings of labels are met); • "With precision"—the lower and/or upper limit of the satisfaction of the comparison result with the parameters specified in the comparison (from 0 to 1)	

12.2.2 Adding a label

To create a label, click on $+$ in policy editing form (Figure 35).
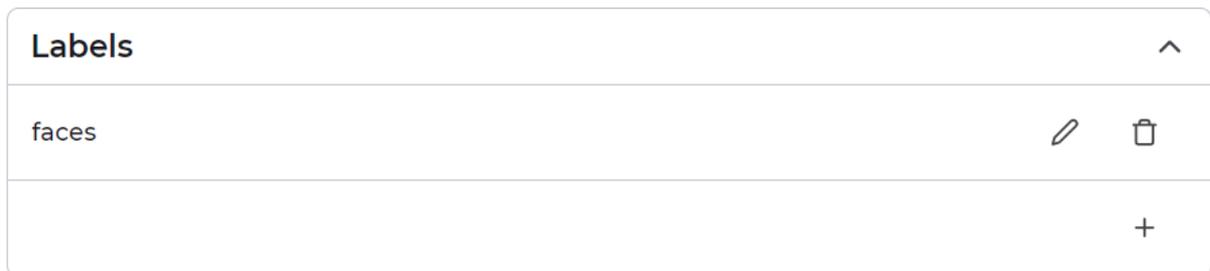

Figure 35: Labels

If you need to identify faces among other faces in the label, then select "Faces" for "Identify among" field in the window for the parameter adding (Figure 36). If you need to identify among events, select "Events" for "Identify among" field (Figure 37).

Add label

Label name

Identify among   Faces

Search for descriptor   Faces

Perform search by

List   Comma-separated Face IDs
Select...   ID

User data   Comma-separated face external IDs
                                                        ID

Date from   Date to
📅   ×   📅   ×

Filter search result by

Gender   Age category   Liveness

Additional search parameters

The maximum number of similar ones in the search results   Accuracy threshold
Not specified   Not specified

Add

Figure 36: Form for creating a label. Identify among faces

Add label

Label name

Identify among

Events ⌄

Search for descriptor

Faces ⌄

Perform search by

Source	Comma-separated event IDs	Age category by body
Select... ⌄	ID	Select... ⌄
User data	внешние идентификаторы событий через запятую	Gender by body
	ID	Select... ⌄
Age category	Comma-separated Face IDs	Upper body colors
Select... ⌄	ID	Select... ⌄
Gender	Similarity	Sleeve
Select... ⌄	from : to	Select... ⌄
Emotions	Handling policies	Headwear
Select... ⌄	Select... ⌄	Select... ⌄
Medical mask	Comma-separated track IDs	Headwear colors
Select... ⌄	ID	Select... ⌄
Date from	Comma-separated tags	Backpack
📅 ✕		Select... ⌄
Date to		Lower body colors
📅 ✕		Select... ⌄
		Lower body type
		Select... ⌄
		Shoes colors
		Select... ⌄

Location

District	Area

City	Street	House number

Longitude (-180 ... 180)	Latitude (-90 ... 90)

Accuracy (0 ... 90)	Accuracy (0 ... 90)

Filter search result by

Gender ⌄	Age category ⌄	Liveness ⌄

Additional search parameters

The maximum number of similar ones in the search results	Accuracy threshold
Not specified	Not specified

Add

Figure 37: Form for creating a label. Identify among events

Fill in all the required parameters and click on the "Add" button at the bottom of the form.

12.2.3 Label editing

Editing of the label is performed by clicking on the ✏ button in the line (Figure 35).

A general view of the form for editing the label is shown below (Figure 38).


Figure 38: "Edit label" form

Edit the parameter values and click on the "Change" button.

12.2.4 Label deleting

Deletion of the label is performed by clicking on the 🗑 button in the line (Figure 35).

12.2.5 Tag adding

To create a tag, click on $+$ in policy editing form (Figure 39).
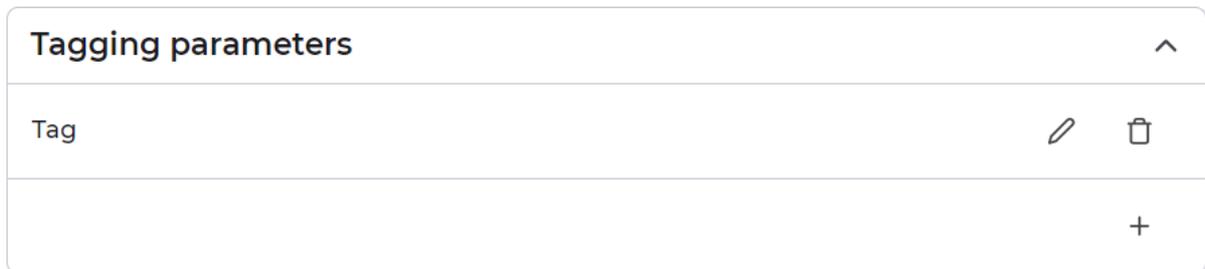
<div align="right">Figure 39: Tagging parameters</div>

A general view of the form for creating a tag is shown below (Figure 40).
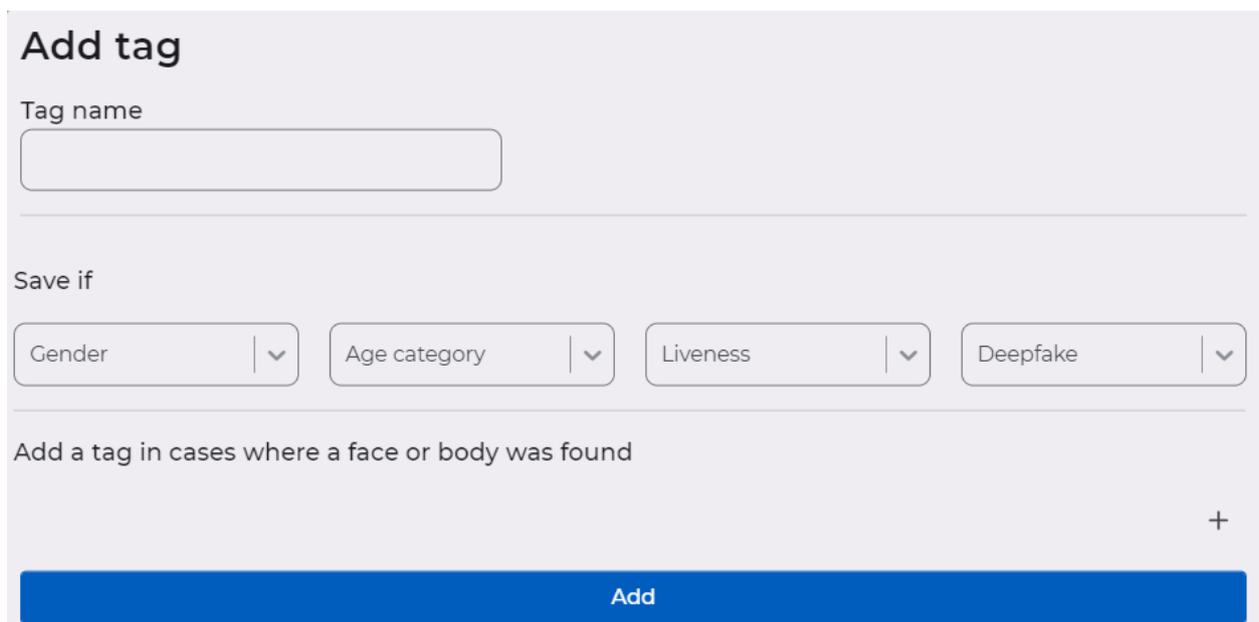
<div align="right">Figure 40: "Add new tag" form</div>

Fill in all the required parameters and click on the "Add" button at the bottom of the form.

12.2.6 Tag editing

Tag editing is performed by clicking on the ⬭ button in the line (Figure 39).

A general view of the tag editing form is shown below (Figure 41).

Figure 41: "Edit tag" form

Edit the values of the tag parameters and click on the "Change" button.

12.2.7 Tag deleting

Deletion of the tag is performed by clicking on the 🗑 button in the line (Figure 39).

After finishing editing the policy, click on the "Save" button in the upper right corner (Figure 34).

12.2.8 Dynamic policy editing

To edit a dynamic policy, first click on the ✎ button on the page with a list of policies (1 in Figure 28). Then in the editing form change the name of the policy and click "Save" (Figure 42).

Figure 42: Form for dynamic policy editing

12.2.9 Policy deleting

Deleting a policy is performed by clicking on the 🗑 button in the line (2 in the Figure 28).

Confirm the action in the pop-up window—click on the "Delete" button or cancel the action by clicking on the "Cancel" button (Figure 43). After successful deletion, a corresponding notification will appear.
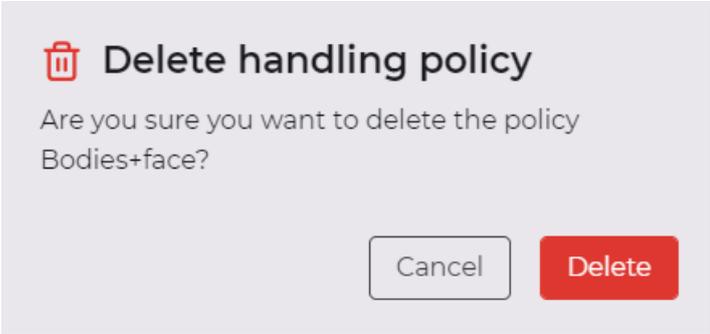
Figure 43: Policy deletion confirmation

13 Verification section

The "Verification" section is intended for creating, deleting, testing verifiers, and editing their parameters. Verifiers are used to quickly compare two faces by face photo image and Face ID, external ID, attribute, event, and display the result of the test. The general view of the "Verification" section is shown below (Figure 44).
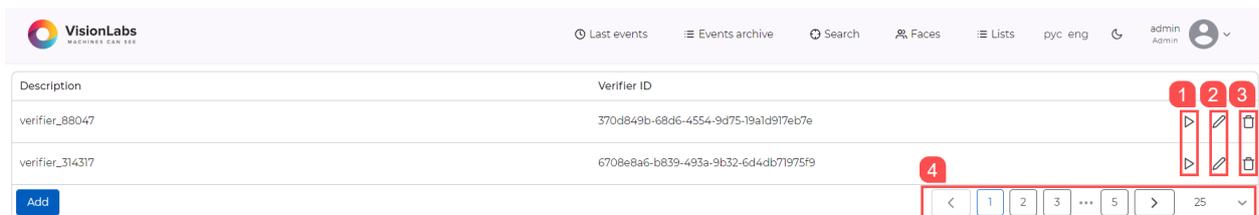
Figure 44: "Verification" section

"Verification" section contains the following elements:

- table of verifiers:
    - "Description"—verifier name;
    - "Verifier ID"—verifier identifier;
    - ▷—button for testing the verifier (1);
    - ✎—button for editing verifier parameters (2);
    - 🗑—button for deleting the verifier (3);
- "Add" button—button for creating a verifier;
- the number of verifiers displayed on the page is set by the switch in the lower right corner of the page. There can be 10, 25, 50 or 100 verifiers in total on one page (4).

13.1 Verifier creation

To create a verifier, click on the "Add" button (Figure 44). A form for step by step verifier creation will open (Figure 45).

Figure 45: "Create verifier" form

Fill in all the required parameters and click on the "Next" button to proceed to the next step. The description of the parameters is presented below, in the "Verifier editing" section.

After setting all the parameters, a window with a message about the successful verifier creation appears (Figure 46). Click anywhere outside the successful verifier creation message to navigate to the "Verification" section.
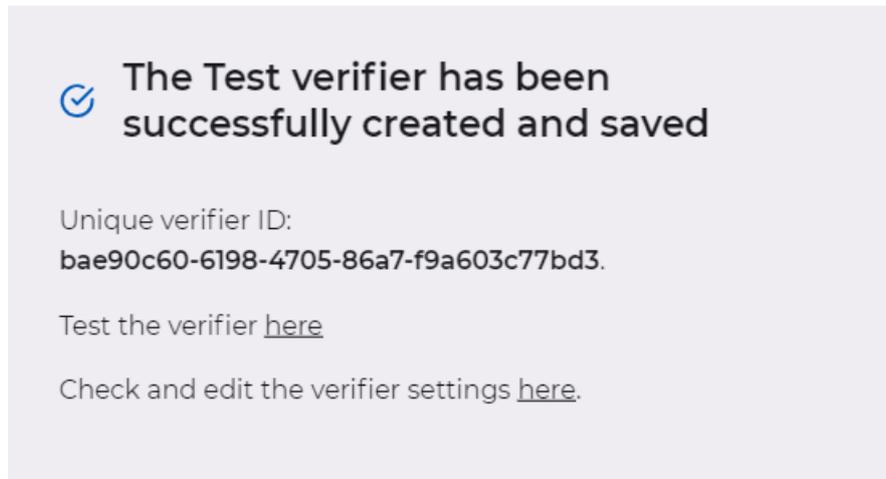
Figure 46: Message about the successful verifier creation

13.2 Verifier testing

Testing a verifier is performed by clicking on the ▷ button in the line (1 in Figure 44). The general view of the "Verifier testing" form is shown below (Figure 47).

Figure 47: "Verifier testing" form

"Verifier testing" form contains the following blocks:

- "Search by"—search options:
    - "Face"—search by registered face in the system:
    - "Face ID"—face identifier that is created in the LUNA PLATFORM 5 system as a result of a detection event and attribute extraction;;
    - "External ID"—search by external face identifier:

- ∗ "External ID"—external face identifier;
  - – "Attribute"—search by face attribute:
    - ∗ "Attribute ID"—attribute (descriptor) identifier;
  - – "Event"—search by registered event in the system:
    - ∗ "Event ID"—identifier of the event of detection and attribute extraction;
- Photo image—search by uploaded photo image:
  - – field for uploading a photo image;
- Searching results:
  - – "Photo"—sample of detected face (candidate);
  - – "Similarity, %"—similarity value, in percent;
  - – "Status"—verification result:
    - ∗ ✅—successful verification;
    - ∗ ⊗—unsuccessful verification;
  - – "Link to the reference" ⊕—go to the page the reference face;
  - – ⊕—go to the "Event details" page;
  - – ⬇—button for downloading the result of the verification (Figure 48).

To test the verifier by face, in the "Search by" block enter the Face ID and select photo image, click on

[+] or "Select file", and specify the path to the image file.

Figure 48: "Verifier testing" form. Search by face

Image file requirements:

- *.jpeg, *.png or *.bmp format;
- image size no less than 320x250 and no more than 3840x2160 pixels;
- image may contain one or more people;
- image must have a person's face.

When loading a photo image containing many faces, the Interface verifies all faces in the image.

To reset the image, click on ✕.

13.3 Verifier editing

Editing of verifier parameters is performed by clicking the ✎ button in the line (2 in the Figure 44). The general view of the verifier editing form is shown below (Figure 49).
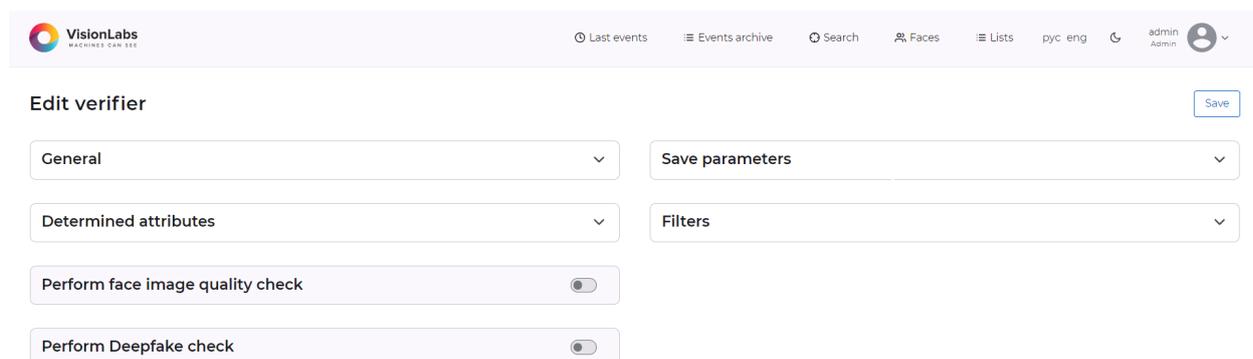
Figure 49: "Edit verifier" form

Description of the parameters of the verifier editing form is given in the tables (Table 16-20).

Table 16. Parameters of the verifier editing form: general parameters and determined attributes

Parameter	Description	Default value
General		
Verifier name	Specifies the name that will be displayed in the list of verifiers	-
Similarity threshold	Specifies a similarity score, which will consider that the reference and the candidate contain the face of the same person	0.93
Determined attributes		
Basic attributes (gender, age)	Assessment of the basic attributes of a person in the image. On When the attribute is enabled, the "Save if" and "Call only in cases" options become available	

Parameter	Description	Default value
Head position	Assessment of the head position (angles of inclination and rotation of the head left/right and up/down). When the attribute is enabled, the options "Discard face images with head rotation/tilt angle above" become available	On
Emotion	Determination of the dominant emotion (anger, disgust, fear, happiness, neutral, sadness, surprise)	Off
Mask	Assessment of the presence or absence of a medical mask or mouth covering. When the attribute is enabled, the filter "Process images only if detected" becomes available	Off
Image quality	Determination of quality (the presence of overexposure, blurring, underexposure, the presence of glare on the face, uneven lighting)	On
Eye direction	Assessment of the direction of a person's gaze in the image	Off
Eye status	Evaluating whether a person's eyes are open or closed in the image, as well as determining key points of the irises of the eyes	Off
Mouth status	Closed or occluded mouth detection and smile detection	Off
Perform Liveness check	Enabling Liveness check	Off
Position of 68 feature points of the face	Determination of 68 feature points of the face (requires additional time for calculations, it is used to determine emotions, eye direction or Liveness check)	Off
EXIF metadata	Defining image metadata	Off

Table 17. Parameters of the verifier editing form: image quality check

Parameter	Description	Default value
Perform face image quality check		
Image format	Must be saved in .jpeg or .png format (correct verification). Possible values: • JPEG; • JPEG2000; • PNG;	JPEG; PNG JPEG2000;
Image size in Mb	This assessment determines the size of the image in bytes. It also compares the estimated value with the specified threshold	5120: 2097152
Image width in pixels	This assessment determines the width of the image in pixels. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	180:1920
Image height in pixels	This assessment determines the width of the image in pixels. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	180:1080
Image aspect ratio	This assessment determines the proportional ratio of the image width to height. It also compares the estimated value with the specified threshold	0.74:0,8
Degree of illumination uniformity	It is possible to evaluate the uniformity of illumination according to the requirements specified in the ICAO standard. It also compares the estimated value with the specified threshold (correct verification)	0.3:1
Degree of image specularity	Bright light artifacts and flash reflection from glasses are not allowed (indirect verification)	0.3:1
Degree of image blureness	The pixel colors of front-type photo images must be represented in the 24-bit RGB color space, in which each pixel has 8 bits for each color component: red, green, and blue (indirect verification)	0.61:1
Degree of absence of underexposure in the photo	An underexposure assessment is available. It also compares the estimated value with the specified threshold	0.5:1

Parameter	Description	Default value
Degree of absence of overexposure in the photo	Too much exposure assessment is available. It also compares the estimated value with the specified threshold	0.57:1
Face illumination uniformity	It is possible to evaluate the uniformity of illumination according to the requirements specified in the ICAO standard. The face should be evenly lit so that there are no shadows or glare on the face image. It also compares the estimated value with the specified threshold (correct verification)	0.5:1
Skin tone dynamic range	This assessment is a determination of the ratio of the brightness of the lightest and darkest areas of the face according to the requirements specified in the ICAO standard. It also compares the estimated value with the specified threshold (correct verification)	0.5:1
Degree of uniformity of the background	This assessment determines the degree of background uniformity from 0 to 1, where: • 0—non-uniform background; • 1—uniform background;	0.5:1
Degree of lightness of the background	This rating determines the degree of background brightness from 0 to 1, where: • [0…0.1]—black background; • [0.1…0.3]—dark background; • [0.3…0.97]—light background; • [0.97…1]—white background;	0.5:1
Presence of radial distortion (Fisheye effect)	Possible values: No—the Fisheye effect is not presented in the image; Yes—the Fisheye effect is presented in the image	No
Type of image color based on face	Possible values: Color; Grayscale; Infrared—near-infrared	Color

Parameter	Description	Default value
Shoulders position	This assessment determines the position of the shoulders if they are in the frame: Parallel Non-parallel Hidden	Parallel
Face width in pixels	This assessment determines the width of the face in pixels. It also compares the estimated value with the specified threshold	180:1920
Face height in pixels	This assessment determines the height of the face in pixels. It also compares the estimated value with the specified threshold	180:1080
Face offset from the top edge of the image in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification)	20:50
Face offset from the bottom edge of the image in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification)	20:50
Face offset from the left edge of the image in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification)	20:50
Face offset from the right edge of the image in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification)	20:50
Head yaw angle	Head rotation should be no more than 5° from the frontal position (correct verification)	-5:5
Head pitch angle	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification). The tilt of the head should be no more than 5° from the frontal position (correct verification)	-5:5

Parameter	Description	Default value
Head roll angle	The image must contain a full front view of the person's head, including the left and right ear (if person has any), the top point of the forehead area and the chin (correct verification). The inclination of the head should be no more than 8° from the frontal position (correct verification)	-8:8
Gaze yaw angle	This assessment determines the direction of gaze (yaw)	-5:5
Gaze pitch angle	This assessment determines the direction of gaze (pitch)	-5:5
Probability of smile presence	The facial expression must be neutral (indirect verification).	0:0.5
Probability of mouth occlusion	It is not allowed to cover the face with hair or foreign objects along the entire width, from the eyebrows to the lower lip (indirect verification)	0:0.5
Probability of open mouth presence	This assessment determines the state of the mouth The mouth is closed (correct verification)	0:0.5
Smile properties	This assessment determines the state of the mouth The facial expression must be neutral (indirect verification). Possible values: None—smile is not found; Smile with closed mouth; Smile with teeth	None
Glasses	Sun glasses are not allowed (correct verification). Possible values: Sunglasses; Eyeglasses; No glasses	No glasses
Left eye state	Both eyes are open normally for the respective subject (considering behavioral factors and/or medical conditions, correct verification). It is not allowed to cover the face with hair or foreign objects along the entire width, from the eyebrows to the lower lip (indirect verification) Possible values: Open; Closed; Occluded	Open

Parameter	Description	Default value
Right eye state	Both eyes are open normally for the respective subject (considering behavioral factors and/or medical conditions, correct verification). It is not allowed to cover the face with hair or foreign objects along the entire width, from the eyebrows to the lower lip (indirect verification). Possible values: Open; Closed; Occluded	Open
Red eyes effect presence	Possible values: No—there is no red-eye effect; Yes—there is a red-eye effect	No
Distance between eye centers in pixels	The image must contain a full front view of the person's head, including the left and right ear (if person has any),the top point of the forehead area and the chin (correct verification) The distance between the centers of the eyes must be at least 120 pixels or at least 45 pixels in accordance with paragraph 12 of the procedure for placing and updating biometric personal data in a unified biometric system (correct verification)	90:100
Horizontal head size relative to image size	This assessment determines the horizontal head size relative to the image size. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	0.5:75
Vertical head size relative to image size	This assessment determines the vertical head size relative to the image size. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	0.6:0.9
The position of the center point of the face horizontally relative to the image	This assessment determines the horizontal position of the center point relative to the image. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	0.45:0.55
The position of the center point of the face vertically relative to the image	This assessment determines the vertical position of the center point relative to the image. It also compares the estimated values with thresholds (according to ISO or custom thresholds)	0.3:0.5

Parameter	Description	Default value
Eyebrows state	The facial expression must be neutral (indirect verification). Possible values: Neutral; Raised; Squnting; Frowning	Neutral
Headwear type	Possible values: None; Baseball_cap; Beanie; Peaked_cap; Shawl; Hat with earflaps; Helmet; Hood; Hat; Other	None
Presence of natural lighting	The face should be evenly lit so that there are no shadows or glare on the face image (correct verification) Possible values: No—the lighting is unnatural; Yes—the lighting is natural	Yes

Table 18. Parameters of the verifier editing form: Deepfake check **

Parameter	Description	Default value
Perform Deepfake check	Determination of digital manipulations for replace one person's likeness convincingly with that of another	Off
Discard images of faces with a Deepfake score below the specified score below the specified	Ignoring images with a Liveness score below the specified value. Possible values: from 0 to 1, where 1 is a real person, 0 - fake	0,5

Parameter	Description	Default value
Use specified Deepfake mode	Possible values: • Mode 1; • Mode 2; The choice of mode determines what set of neural networks perform photo processing for deepfake checking. For more information about the neural networks used in deepfake verification modes, contact VisionLabs technical support.	Mode 2

** Deepfake license required. Deepfake check is not performed on normalized (centered and cropped) images after face detection.

Table 19. Parameters of the verifier editing form: save parameters

Parameter	Description	Default value
Save parameters		
Save image in database	Saving the image in the LUNA PLATFORM 5 database. If enabled, the unconditional saving of images in the database is performed.	Off
Save biometric template in database	Saving the created biometric template in the LUNA PLATFORM 5 database. If enabled, the unconditional saving of biometric templates in the database is performed.	Off

Table 20. Parameters of the verifier editing form: filters

Parameter	Description	Default value
Perform face image quality assessment		
Filters		

Parameter	Description	Default value
Discard images with multiple faces	Determination of images containing multiple faces. Possible values: Select only one face of the best quality—process an image containing several faces, but detect only a face of the best quality; Do not discard—detect all faces in the image; Discard—ignore an image containing multiple faces	Do not discard
Reject descriptors with quality below the specified threshold	Ignoring low quality images. To use the filter, you must enable the determination of the descriptor in the determined attributes	0,5
Process images only if detected	Possible values: Missing—the event is created when there is no overlap of the face by the medical mask (no mask); Occluded—the event is created in case of detection of face overlapping; Medical mask—the event is created when a medical mask is detected on the face. Several filter values can be specified. Available only when defining the "Medical mask" attribute	-
Discard face images with head rotation angle (to the left or right, yaw) above	Ignoring images in which the person's head is turned to the left or right at a too large angle —no information will be extracted when detecting a face and evaluating the angle of head rotation. Available only if the "Head position" attribute is enabled	30
Discard face images with head tilt angle (to the left or right, roll) above	Ignoring images in which a person's head is tilted to the left or right at a too large angle—no information will be extracted during face detection and head tilt evaluating. Available only if the "Head position" attribute is enabled	40
Discard face images with head tilt angle (up or down, pitch) above	Ignoring images in which the person's head is tilted up or down at a too large angle —no information will be extracted during face detection and head tilt evaluating. Available only if the "Head position" attribute is enabled	30

Parameter	Description	Default value
Discard images of faces with a Liveness score below the specified	Ignoring images with a Liveness score below the specified value. Possible values: from 0 to 1. Available only if the "Perform Liveness check" attribute is enabled	0,5
Discard images of faces with the Liveness quality lower than the specified	Ignoring images with a Liveness quality lower than the specified. Possible values: from 0 to 1. Available only if the "Perform Liveness check" attribute is enabled	0,5
Process images of faces only with Liveness states	Processing images with Liveness status: Spoof—the absence of a "live" person in the frame; Real—the presence of a "live" person in the frame; Unknown. Available only if the "Perform Liveness check" attribute is enabled	-
Process images of faces only with Deepfake states	Processing images with Deepfake status: Fake—the absence of a "live" person in the frame; Real—the presence of a "live" person in the frame. Available only if the Perform Deepfake check" attribute is enabled	-
Filter images based on face image quality assessment results	Filter images according to the parameters set in the "Perform face image quality assessment" setting that comply with ISO/IEC 19794-5:2011 and ICAO. Available only when the parameter "Perform face image quality assessment*" is enabled	Off

After finishing editing the verifier, click on the "Save" button in the upper right corner.

13.4 Verifier deleting

Deleting a verifier is performed by clicking on the ☐ button in the line (3 in the Figure 44).

In the pop-up window (Figure 50), you must confirm the action — click on the "Delete" button or cancel the action by clicking on the "Cancel" button.
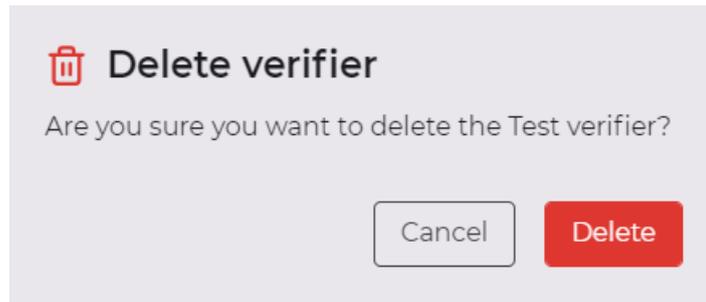
Figure 50: Verifier deletion confirmation

14 Tasks section

The "Tasks" is intended for creating, deleting, and displaying tasks, downloading search results by events and persons. Export to a file is implemented in the Interface in the form of a task;

General view of the "Tasks" section is shown below (Figure 51).
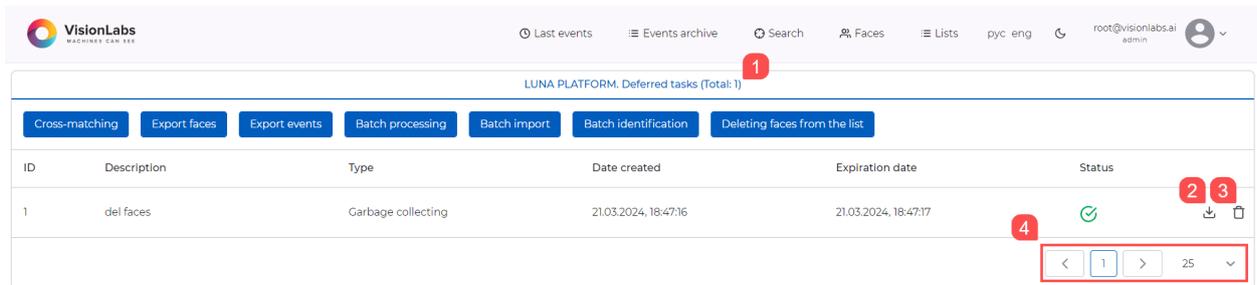
Figure 51: "Tasks" section

The "LUNA PLATFORM. Deferred tasks" tab contains the following elements:

- task counter (1);
- "Cross-matching" button — button for creating a task for cross-matching lists of faces;
- "Export faces" button — button for creating a task to export faces and information on them;
- "Export events" button — button for creating a task to export events and information on them;
- "Batch processing" button — button for creating a task for batch processing of photo image archives according to a specific policy;
- "Batch import" button — button for creating a task for batch import of photo image archive into the list;
- "Batch identification" — button for creating a task for identifying an archive of photo images of references with candidates (faces or events with faces);
- "Deleting faces from the list" — button for creating a task for removing persons from the selected list;
- table of tasks:
- "ID" — task identifier;
- "Description" — user who created the task;
- "Type" — task type (cross-matching, export, batch processing, batch import, batch identification);
- "Date created" — date and time of task creation;
- "Expiration date" — date and time of completion of the task;
- "Status" — task progress state;
- ⦾ — button to stop the task (appears if the task status is "In progress");
- ⤓ — button for downloading the result of the task (2);
- 🗑 — button for deleting a task (3);

- the number of tasks displayed on the page is set by the switch in the lower right corner of the page. There can be 10, 25, 50 or 100 tasks in total on one page (4).

The status changes during the task execution. In total, 4 statuses are applied to tasks in the Interface:

- ⟳ — task is being performed;
- "Collecting results" — collecting the results of the task;
- ✓ — task completed;
- ⊗ — an error occurred while executing a task.

The process of creating tasks and the values of the specified parameters are described below. If you need to go back to the task list page during creating a task, press the Esc key on your keyboard.

Configure notifications about task status using the "callbacks" functionality. Notifications will be sent to the external system at the specified URL. The notification settings block opens after filling in the required fields to create a task (Table 21).

Table 21. Notification settings in the task creation form

Parameter	Description	Default value
Add callback		
Type	Protocol type when creating a notification	HTTP
URL	Address of the external system where the notification will be sent	-
Authorization type	Selecting the type of authorization into an external system and setting up authorization data. The basic type of authorization requires specifying login and password to enter an external system	Basic
Timeout (seconds)	Maximum time to wait for a request to complete	60
Request body format	Data interchange format: JSON or MessagePack	application/json
HTTP Headers	HTTP Request Headers	-

14.0.1 Creating a cross-matching Task

To create a task for cross-matching lists of faces, click on the "Cross-matching" button (Figure 51). A general view of the form for creating a cross-matching task is shown below (Figure 52).

Figure 52: Form for creating a cross-matching task

The "Cross-matching" form contains the following elements:

- "List"* — selection of a list for comparison;
- "Find matches in"* — selection of a list for comparison;
- "The maximum number of similar ones" — maximum number of similar candidates (the default is 3);
- "Minimum similarity threshold, %" — the lowest score of similarity in percentage between candidates that the Interface accepts as a possible match (the default is 50).

* Required field

Fill in all the required parameters and click on the "Create task" button (or Enter key on your keyboard)..

Resource-intensive tasks can take a while. In the pop-up window (Figure 53), you must confirm the action — click on the "Ok" button or cancel the action by clicking on the "Cancel" button (Esc key on keyboard)..
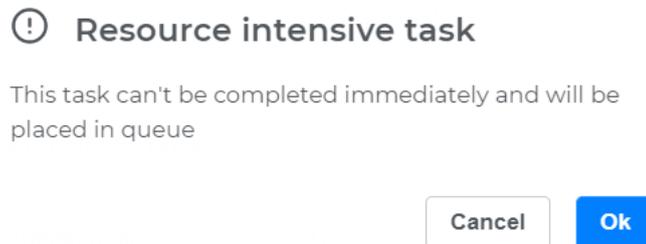
Figure 53: Confirmation of the creation of a cross-matching task

After successfully creating a cross-matching task, the message "Task for cross-matching has been created" will appear in the upper right corner of the screen (Figure 54).
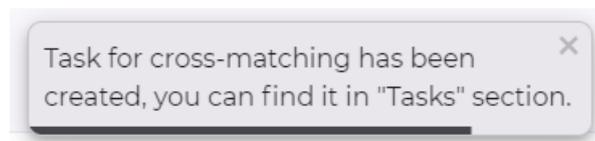
Figure 54: Confirmation of successful creation of a cross-matching task

14.1 Creating an export faces task

To create a task to export faces and information on them, click on the "Export faces" button (Figure 51). A general view of the form for creating an export task is shown below (Figure 55).

Figure 55: Form for creating an export faces task

Description of the parameters of the "Export faces" form is given in Table 22.

Table 22. Export faces task parameters

Parameter	Description	Default value
Data upload parameters		

Parameter	Description	Default value
List	Specifies the list for export	-
User data	Indicates face data (up to 128 characters)	-
Face IDs	Specifies the values of identifiers of faces in LUNA PLATFORM 5 in UUID format	-
Face external IDs	Specifies the values of third-party external identifiers	-
Date from	Specifies the lower limit of the period of creation of faces or events in LUNA PLATFORM 5	-
Date to	Specifies the upper limit of the period of creation of faces or events in LUNA PLATFORM 5	-
ID of the first face	Specify the values of the identifier of the first face from the exported faces	-
ID of the last face	Specify the values of the identifier of the last face from the exported faces	-
Additional parameters		
Columns in the report—selecting table columns to be included in the file upon export, and indication the order in which they are located	Face ID User data External ID Time Avatar Event ID Lists	On On On On On On Off
Save face images	Enabling this option allows you to upload face images into the archive with the .csv report	Off
Type of biometric template	Specifies the biometric template of which objects will be exported—faces or bodies	Faces
Delimiter for .csv	A special character that will be used in the file with export results to divide text into columns	,

Fill in all the required parameters and click on the "Create task" button.

Resource-intensive tasks can take a while. In the pop-up window (Figure 56), you must confirm the action — click on the "Ok" button or cancel the action by clicking on the "Cancel" button (Esc key on keyboard)..

Figure 56: Confirmation of the creation of an export task

After successfully creating an export task, the message "Export task has been successfully created" will appear in the upper right corner of the screen (Figure 57).
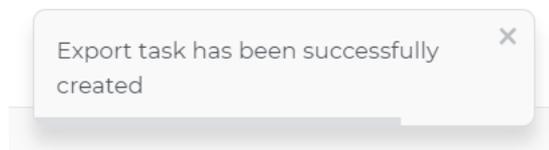
Figure 57: Confirmation of successful creation of an export task

14.2 Creating an export events task

To create a task to export objects events and information on them, click on the "Export events" button (Figure 51). A general view of the form for creating an export events task is shown below (Figure 58).

Figure 58: Form for creating an export events task

Description of the parameters of the "Export events" form is given in Table 23.

Table 23. Export events task parameters

Parameter	Description	Default value
Data upload parameters		
General data about the event		
Source	Specifies the name of the event source	-
User data	Indicates face data (up to 128 characters)	-
Event IDs	Specifies the values of the event identifiers in UUID format for performing an accurate search separated by commas	-
Event external IDs	Specifies the values of third-party external identifiers separated by commas	-
Face IDs	Specifies the values of identifiers of faces in UUID format separated by commas	-
Similarity	A value from 0 to 1 is specified	-
Tags	Specifies a tag or tags separated by commas	-
Handling policies	Specifies policy name, it is possible to specify several values	-
Date from	Specifies the lower limit of the period of creation of events	-
Date to	Specifies the upper limit of the period of creation of events	-
Advanced event filters		
End date from	Indicates the lower limit of the event end period	-
End date to	Indicates the upper limit of the event end period	-
ID of the first event	Indicate the value of the identifier of the first event from the exported events	-
ID of the last event	Indicates the value of the identifier of the last event from the exported events	-
Track IDs	Specifies the values of the track identifiers in the UUID format separated by commas	-
Face attributes		
Gender	Specifies male/female gender	-
Age category	Specifies the age range	-
Emotions	Specifies emotions	-

Parameter	Description	Default value
Medical mask	Detection of the presence/absence of a medical mask, mouth occlusion	-
Liveness	Specifies the result of checking for the presence of a living person in the frame	
Body attributes		
Gender by body	Specifies the female, male, undefined gender	-
Age category by body	Specifies the age range by body image	-
Headwear	Specifies headdress	-
Upper body colors	Specifies top clothing color	-
Sleeve	Specifies sleeve length	-
Headwear color	Specifies headdress color	-
Lower body colors	Specifies bottom clothing color	-
Lower body type	Specifies bottom clothing type	-
Shoes color	Specifies shoe color (only for "Identify among events);	
Backpack	Specifies backpack presence	-
Best match data		
Face IDs	Specifies the values of identifiers of faces 5 in UUID format	-
Face external IDs	Specifies the values of third-party external identifiers	-
Label	Name of the label parameter (the rule by which comparison occurs);	-
Geoposition		
	"District"; "Area"; "City"; "Street"; "House number";	
Advanced geoposition filters		

Parameter	Description	Default value
	"Longitude (-180…180)"; "Accuracy (0…90)"; "Latitude (-90…90)"; "Accuracy (0…90)"	
Other		
Add filter by meta**	Allows you to fill in a set of blocks to create a filter by the "meta" field. The number of meta filters is unlimited. The following blocks are required to be filled in when creating a filter by meta: • Key—the full path to the required meta field connected with events. • Value—any valid value for the meta field. • Type—selection of the data type stored in this meta field. The data type displays available operators and converts values into the desired data type when sent to the API. • Operator—select operators for a given data type from the list. Operator type depends on the selected data type (for more details see LUNA PLATFORM 5 API, "get events" section)	
Additional parameters		
Columns in the report—selecting table columns to be included in the file upon export, and indication the order in which parameters are located in the report	Face ID	On
	User data	On
	Time	On
	External ID	On
	Event ID	On
	Source	On
	Handling Policy ID	On
	Tags	Off
	Track ID	On
	Metadata	Off
	Geo position	On
Save face images	Enabling this option allows you to upload face images into the archive with the .csv report	Off

Parameter	Description	Default value
Type of biometric template	Specifies the biometric template of which objects will be exported—faces or bodies	Faces
Delimiter for .csv	A special character that will be used in the file with export results to divide text into columns	,

Fill in all the required parameters and click on the "Create task" button or the Enter key on your keyboard.

Resource-intensive tasks can take a while. In the pop-up window, confirm the action — click on the "Ok" button or cancel the action by clicking on the "Cancel" button (Esc key on keyboard).

After successfully creating an export task, the message "Export task has been successfully created" will appear in the upper right corner of the screen (Figure 55).

14.2.1 Creating a batch processing task

The batch processing task allows user to process several photos using a specified policy.

To create a task for batch processing of photo image archives according to a specific policy, click on the "Batch processing" button (Figure 51). The general view of the form for creating a batch processing task is shown below (Figure 59).

Figure 59: Form for creating a batch processing task

By default the "Batch Processing" form contains the following elements:

- "Data source type" — selection of the source type of the loaded data;
- "Description" — description of the task;
- "Handling policy"* — selection of a policy (required);

The resource can accept five types of sources with images for processing:

- File;
- ZIP;

- S3;
- Network disk;
- FTP;
- Samba.

Additional options appear depending on the selected data source type.

To quickly download a ZIP archive from your local machine without additional options, select "File" as the data source type. Then upload or drag-and-drop the archive with photo images in the field for uploading data.

Download file requirements:

- *.zip file format;
- there can be one or more people on the image (depends on policy settings);
- the image must contain a person's face or body;
- images must be located immediately inside the archive, and not in a folder inside the archive;
- the archive size is set using the ARCHIVE_MAX_SIZE parameter in the config.py configuration file of the Tasks component, the default size is 100 GB (for details, see "VisionLabs LUNA PLATFORM 5. Administrator manual").

When choosing a ZIP archive as image source for the batch processing task, the following parameters can be set:

- "File URL"* — URL address of the archive with images, the default archive size is 100 GB;;
- "Archive password" — a password for the transferred archive protection;
- "File key prefix" — a file key prefix that can be used to load images from a specific directory, for example, "2022/January";;
- "File key postfix" — file key postfix that can be used to upload images with a specific extension;
- "Whether to estimate images from ZIP archive subdirectories recursively?" switch — allows you to recursively receive images from subdirectories.
- "Input image type" — selection of the type of image that is input in the batch processing task — "Raw image", "Face warped image", "Body warped image".

When choosing an S3-like storage as an image source for the batch processing task, the following parameters can be set:

- "Storage endpoint" — only when specifying the bucket name;
- "Bucket name"* — Access Point ARN / Outpost ARN;
- "File key prefix" — file key prefix. It can be used to load images from a specific folder, such as "2022/January";
- "Bucket region" — only when specifying the bucket name;
- "Public access key"* — public key for setting up authorization;
- "Secret access key"* — secret key for setting up authorization;
- "Signature version" — signature "s3v2" / "s3v4";

- "Whether to estimate images from bucket subdirectories recursively?" — possibility to recursively download images from nested bucket folders;
- "Whether to save image origin?" — saving original images in the LUNA PLATFORM 5 database.

It is also possible to select the type of transferred images. For more information about working with S3-like repositories, see AWS User Guide.

When choosing a network disk as an image source for the batch processing task, the following parameters can be set:

- "Path to directory with images"* — absolute path to the directory with images in the container (required);
- "File key prefix" — a file key prefix that can be used to load images from a specific directory;
- "File key postfix" — file key postfix that can be used to upload images with a specific extension;
- "Whether follow file system links?" — enable/disable of symbolic links processing.

As in the batch processing task using S3-like storage as image source, it is possible to recursively receive images from nested directories, and to select the type of transferred images.

When choosing a FTP server as an image source for the batch processing task, the following parameters can be set:

- "Server host"* — FTP server IP address or hostname;
- "Port" — FTP server port;
- "FTP sessions" — maximum number of allowed sessions on the FTP server;
- "Server user" and "Server password" — authorization parameters.

* Required field

As in the batch processing task using network disk as image source, it is possible to set the path to the directory with images, recursively receive images from nested directories, select the type of transferred images, and specify the prefix and postfix.

When choosing a Samba as an image source for the batch processing task, the parameters are similar to those of an FTP server, except for the "max_sessions" parameter. Also, if authorization data is not specified, the connection to Samba will be performed as a guest.

Fill in all the required parameters and click on the "Create task" button or the Enter key on your keyboard. Resource-intensive tasks can take a while. In the pop-up window (Figure 60), you must confirm the action — click on the "Ok" button or cancel the action by clicking on the "Cancel" button.

Figure 60: Confirmation of the creation of a batch processing task

After successfully creating a batch processing task, the message "Batch processing task has been successfully created" will appear in the upper right corner of the screen (Figure 61).
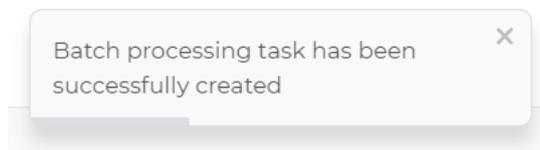
**Figure 61:** Confirmation of successful creation of a batch processing task

14.2.2 Creating a batch import task

The batch import task allows you to batch import faces from photos into a specified list.

To create a task for batch import of photo image archive into the list, click on the "Batch import" button (Figure 51). The general view of the form for creating a batch import task is shown below (Figure 62).

Figure 62: Form for creating a batch import task

The "Batch import" form contains the following elements:

- field for uploading an archive with photographs — it is possible to upload archives in *.ZIP format (required);
- "List" — selection of a list (required);
- "Add a photo to the list only if it complies with the ISO/IEC standard" — the photo will be added to the list only after passing the ISO/IEC 19794-5:2011 verification.
- ✕ — button for deleting the loaded archive — button for deleting the loaded archive.

Download file requirements:

- *.ZIP file format;
- there can be one or more people on the image (depends on policy settings);
- the image must contain a person's face;
- images must be located immediately inside the archive, and not in a folder inside the archive;
- the archive size is set using the ARCHIVE_MAX_SIZE parameter in the config.py configuration file of the Tasks component, the default size is 100 GB (for details, see "VisionLabs LUNA PLATFORM 5. Administrator manual").

Fill in all the required parameters and click on the "Create task" button or the Enter key on your keyboard.

Resource-intensive tasks can take a while. In the pop-up window (Figure 63), you must confirm the action — click on the "Ok" button or cancel the action by clicking on the "Cancel" button.

Figure 63: Confirmation of the creation of a batch import task

After successfully creating a batch import task, the message "Batch import task has been successfully created" will appear in the upper right corner of the screen (Figure 64).
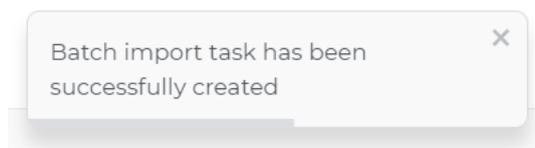
Figure 64: Confirmation of successful creation of a batch import task

14.2.3 Creating a batch identification task

To create a task for identifying an archive of photo images (faces or events with faces), click on the "Batch identification" button (Figure 51). The general view of the form for creating a batch identification task is shown below (Figure 65).

Figure 65: Form for creating a batch identification task

The "Batch Identification" form contains the following elements:

- field for uploading an archive with photographs in *.ZIP format (required);
- +—button for deleting the loaded archive;

- "Identify among"—look for matches among "Faces" or "Events";
- "Filters" block—settings for user identification. A description of the parameters of the "Filters" block, depending on the selected object for identification, is presented in the tables (Table 24 and Table 25);
- "Additional filter parameters" block—general parameters for identification among faces and events:
  - "Similarity threshold, %"—the lowest percentage similarity score between candidates that the Interface accepts as a possible match (default: 80).
  - "Number of records (from 1 to 100)"—the number of lines with matches with a limit of 100 lines (default: 3).

Table 24. "Filters" block parameters of the batch identification task when searching for a match among faces

Name	Description
List	List name
Comma-separated Face IDs	Face ID from the list
User data	Information linked to the person from the database
Comma-separated external face IDs	External ID of persons face
Date from	Specifies the lower limit of the period of creation of faces or events in LUNA PLATFORM 5
Date to	Specifies the upper limit of the period of creation of faces or events in LUNA PLATFORM 5

Table 25. "Filters" block parameters of the batch identification task when searching for a match among events

Name	Description
Source	List of available event sources
User data	Information linked to the person from the database
Age category	Age group: below 18; from 18 to 44; from 45 to 60; above 60

Name	Description
Gender	Female; Male
Emotion	Anger; Sadness; Neutral; Disgust; Fear; Happiness; Surprise. Its possibly to select multiple emotions.
Medical mask	Detection of the presence/absence of a medical mask or mouth occlusion. Missing; Medical mask; Occluded. Its possibly to select multiple variants.
Creation date from	Specifies the lower limit of the period of creation of faces or events in LUNA PLATFORM 5
Creation date to	Specifies the upper limit of the period of creation of faces or events in LUNA PLATFORM 5
Comma-separated event IDs	Event ID of detection and attribute retrieval
Comma-separated external event IDs	External event ID
Comma-separated Face IDs	Face ID from events that are created in LUNA PLATFORM 5 as a result of a detection event and attribute extraction
Similarity	The lower threshold on the similarity if the person was identified
Handling policies	Handling Policy ID
Comma-separated track IDs	Specifies the values of the track identifiers in LUNA PLATFORM 5 in the UUID format
Comma-separated tags	Specifies a tag or tags
Gender by body	Specifies the female, male, undefined gender
Age category by body	Specifies the age range
Headwear	Specifies headdress

Name	Description
Upper body colors	Specifies top clothing color
Sleeve	Specifies sleeve length
Headwear color	Specifies headdress color
Lower body colors	Specifies bottom clothing color
Lower body type	Specifies bottom clothing type
Shoes color	Specifies shoe color (only for "Identify among events);
Backpack	Specifies backpack presence
Location	"District"; "Area"; "City"; "Street"; "House number"; "Longitude (-180…180)"; "Accuracy (0…90)"; "Latitude (-90…90)"; "Accuracy (0…90)"

To upload an archive with photo images of faces to be identified, click on ✛ in the "References" section and specify the path to the archive on the local computer.

Download file requirements:

- *.ZIP file format;
- there can be one or more people on the image (depends on policy settings);
- the image must contain a person's face; images must be located immediately inside the archive, and not in a folder inside the archive;
- the archive size is set using the ARCHIVE_MAX_SIZE parameter in the config.py configuration file of the Tasks component, the default size is 100 GB (for details, see "VisionLabs LUNA PLATFORM 5. Administrator manual").

Fill in all the necessary parameters and click the "Create task" button or the Enter key on your keyboard..

Resource-intensive tasks can take a while. In the pop-up window (Figure 66), you must confirm the action — click on the "Ok" button or cancel the action by clicking on the "Cancel" button.

Figure 66: Confirmation of the creation of a batch identification task

After successfully creating a batch identification task, the message "Batch identification task has been successfully created" will appear in the upper right corner of the screen (Figure 67).
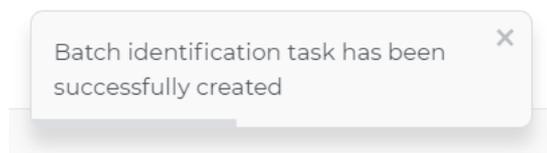

Figure 67: Confirmation of successful creation of a batch identification task

14.2.4 Creating a task for deleting faces from the list

The task of removing persons from the list (Cleanup task) allows you to select faces based on specific parameters and then remove them from the selected list.

To create a Cleanup task, click on the "Deleting faces from the list" button (Figure 51). The general view of the window for creating a task for batch import is shown below (Figure 68).

Figure 68: Window for creating a "Deleting faces from the list" task

The "Deleting faces from the list" window contains the following elements:

- "Description"—a field for adding an explanatory note to the task;
- "Store results" checkbox—if enabled, the results of the task will be saved in the Image Store service storage.
- "Delete samples" checkbox—if enabled, wrapped images obtained after detecting faces from the list will be deleted;

- "List"*—select a list from which faces will be removed;
- "Information"—a field for specifying information about persons from the list. Allows you to remove only a few people from the list, for example, those for whom the same information is provided.
- "Delete data after"—the lower included threshold value of the face creation time;
- "Delete data before"—the upper excluded threshold value of the face creation time.

* Required to be filled out.

Fill in all the required parameters and click on the "Create task" button or the Enter key on your keyboard.

Resource-intensive tasks may take some time to complete. Confirm the action in the pop-up window—click the "Ok" button or cancel the action using the "Cancel" button (Figure 69).
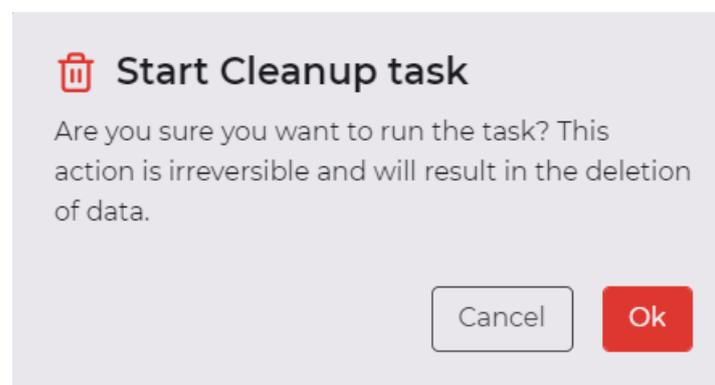

Figure 69: Confirmation of creating a "Deleting faces from the list" task

After successfully creating a task for removing persons from the list, the message "Cleanup task has been successfully created" appears on the screen (Figure 70).
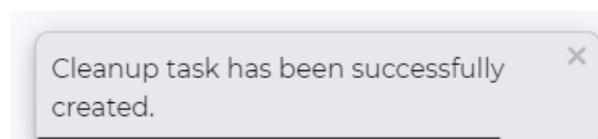

Figure 70: Confirmation of successful creation of the "Deleting faces from the list" task

14.2.5 Viewing the results of a task

Viewing the results of a task is performed by pressing the button ⬇ in the line (3 in the Figure 51). For viewing the *.ZIP archive for export tasks, the *.csv file for cross-matching tasks, the *.json file for batch processing, batch import and batch identification tasks (where * is the task ID) will be loaded.

The downloaded *.csv file contains a table with the export parameters selected in "Creating an export task" section (Figure 71) or with the results of cross-matching (Figure 72).

event_id	create_time	external_id	handler_id	source	top_match	face_id	gender	age
665135b4-9f	27.09.2021 16:47	3rd Floor4062	79e6f4e6-534	3rd Floor	{'face_id': 'e6b70df2-b483-4fc1-98f6-e32989da3637', 'label': 'employees', 'similarity': 0.1409004927}	1f18738a-4f	1	24
6645002e-0a	22.09.2021 12:37	3rd Floor674	79e6f4e6-534	3rd Floor	{'face_id': 'f0fcc688-13ed-4e6c-907f-3848201a35bb', 'label': 'employees', 'similarity': 0.1418588161}	90e2357f-2	1	26
662fa4fa-c08	22.09.2021 20:16	3rd Floor1240	79e6f4e6-534	3rd Floor	{'face_id': 'a917214a-fd31-48f1-afa3-053964804333', 'label': 'employees', 'similarity': 0.9974253178}	ade23c53-4	1	27
662a4881-ff	21.09.2021 16:26	3rd Floor300	79e6f4e6-534	3rd Floor	{'face_id': '573ffe89-9792-4932-a9dd-9cb6beaa2d9f', 'label': 'employees', 'similarity': 0.9825840592}	ec08654e-f2	1	25
660e10f1-1c	22.09.2021 11:12	3rd Floor571	79e6f4e6-534	3rd Floor	{'face_id': 'bb493577-e96e-4b47-8a74-2cb7244a52ef', 'label': 'employees', 'similarity': 0.2021719962}	44d534ef-8	1	25
65fd799f-b9	28.09.2021 15:48	3rd Floor5606	79e6f4e6-534	3rd Floor	{'face_id': 'c39341c2-a89f-4d0b-b07b-bce8431eaf3c', 'label': 'employeesLabel', 'similarity': 0.99946159	4cb37193-3	1	26
65f69dbb-f4	24.09.2021 11:38	3rd Floor2135	79e6f4e6-534	3rd Floor	{'face_id': '951ce496-d7b3-426a-a932-9e622ad77bfe', 'label': 'employees', 'similarity': 0.2092717141}	92dce519-4	1	27
65f10e37-12	22.09.2021 17:13	3rd Floor1092	79e6f4e6-534	3rd Floor	{'face_id': '8fc25ca3-d60f-4247-a993-9fb417e5923c', 'label': 'employees', 'similarity': 0.1687758565}	23bf2636-f3	1	27
65d9ed33-5	30.09.2021 10:42	3rd Floor7165	79e6f4e6-534	3rd Floor	{'face_id': '78b0896a-b4dd-4fec-81d6-4767fe4f75f8', 'label': 'employeesLabel', 'similarity': 0.78575140	b3655a34-b	1	22

Figure 71: Export results table

Reference face ID	Candidate 1 face ID	Percentage of similarity 1	Candidate 2 face ID	Percentage of similarity 2
5e182c16-004f-4c09-a5b7-	5e182c16-004f-4c09-a5b7-8	1	ef7a6ba0-aa0c-4723-b638-(	0.622937023639679
ef7a6ba0-aa0c-4723-b638-	ef7a6ba0-aa0c-4723-b638-0	1	5e182c16-004f-4c09-a5b7-8	0.622937023639679
c7e2d36a-e954-48da-bc1d	c7e2d36a-e954-48da-bc1d-9	1	f36592c9-9ce0-4756-872a-3	0.5655199289321899
f36592c9-9ce0-4756-872a-	f36592c9-9ce0-4756-872a-3	1	c7e2d36a-e954-48da-bc1d-	0.5655199289321899
c678f1ff-c526-4ebd-8c87-9	c678f1ff-c526-4ebd-8c87-90	1	c74ef496-fb1d-4e7c-bccb-b	0.5562521815299988
c74ef496-fb1d-4e7c-bccb-l	c74ef496-fb1d-4e7c-bccb-b(	1	c678f1ff-c526-4ebd-8c87-9(	0.5562521815299988
4d6fa981-37f7-49be-a384-	4d6fa981-37f7-49be-a384-6	1	aa4e9933-a3d0-4961-be42-	0.5087094902992249
aa4e9933-a3d0-4961-be42	aa4e9933-a3d0-4961-be42-8	1	4d6fa981-37f7-49be-a384-€	0.5087094902992249

Figure 72: Cross-matching results table

14.2.6 Task deleting

Deleting a task is performed by clicking the 🗑 button in the line (4 in the Figure 51).

In the pop-up window (Figure 73), you must confirm the action — click on the "Delete" button or cancel the action by clicking on the "Cancel" button. After the successful deletion, a corresponding notification appears.
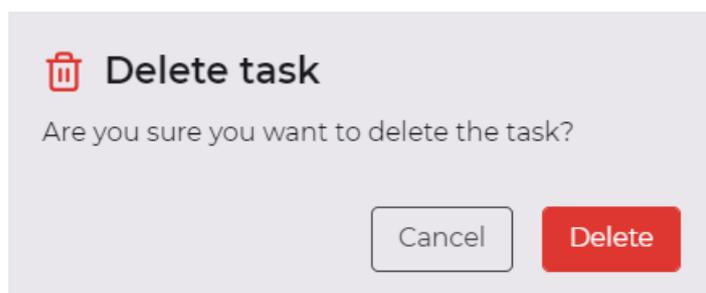

Figure 73: Confirmation of deletion of the task

15 ISO/IEC 19794-5:2011 check section

The "ISO Verification" section is shown in the interface only if there is the corresponding ISO license.

The "ISO/IEC 19794-5:2011 check" section is intended to evaluate existing faces and uploaded photo images for compliance with the ISO/IEC 19794-5:2011 standard. The section with the results of checking the downloaded image is shown below (Figure 74).


Figure 74: "ISO/IEC 19794-5:2011 check" section

The "ISO/IEC 19794-5:2011 check" section contains the following items:

- Photo image upload window (1) allows you to upload a photo image by clicking the file or using drag and drop;
- Form with verification results (2)
    - Final assessment of whether the photo passed the ISO check;
    - Results for each verification: if the verification is passed, then the font color is green; if the verification is failed, then the font color is red. A photo must pass successfully all verifications in order for it to comply with the ISO/IEC 19794-5:2011 standard;
    - The number of failed verifications, if the result of the ISO check is negative;
    - Button for downloading test results in json.
- Button for resetting old photo (3). Allows you to start a new ISO/IEC 19794-5:2011 check for another photo.

To start checking your photo for compliance with the ISO standard, upload or drag and drop your file, then click the "Check" button.

Image file requirements:

- *.jpeg, *.png or *.bmp format;
- image size no more than 15 MB and no more than 3840x2160 pixels;
- image may contain one or more people;
- image must have a person's face.

16 Users section

The "Users" section is intended for showing user accounts, created in LUNA PLATFORM 5. General view of the "Users" section is shown below (Figure 75).
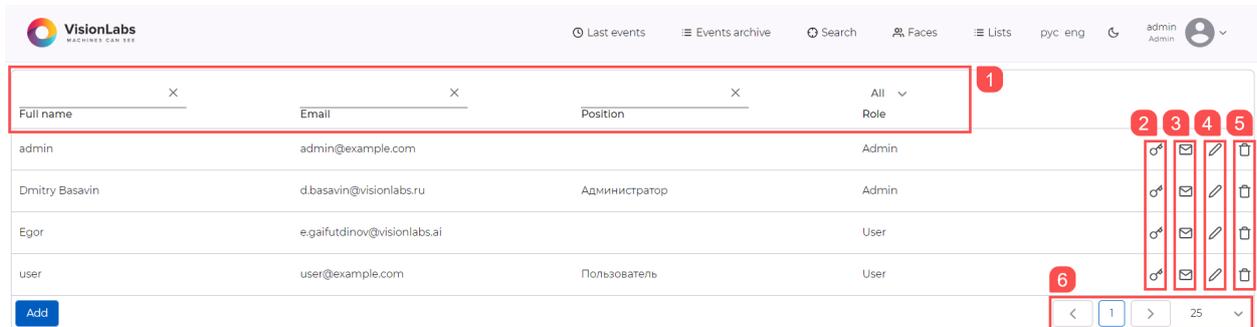
Figure 75: "Users" section

"Users" section contains the following elements:

- Table of existing user accounts containing columns:
    - "Login—account login;
    - "Description"—account description
    - "Account type"
        * user — the type of account with which you can create objects and use only your account data.
        * advanced_user — allows to interact with its own data and view other accounts data
        * admin — the type of account for which rights similar to "advanced_user" are available, and there is also access to the Admin service.
    - "Create time" — date and time of account creation;
    - "Last update time" — date and time of the last account update.

To sort a column in the table, click on the column name. The sorting arrow icon ↑ ↓ indicates the current sorting by one of the parameters: alphabetically, ascending, or descending.

You can work with all types of accounts in the API service, but only "advanced_user" and "user" types of accounts can be created, while in the Admin service you can create all three types.

16.1 Creating a user account

Create a user account using a POST request "create account" to the API service, or using the Admin service. When creating the account, you must specify the following data: login (email), password and account type.

17 Monitoring section

The "Monitoring" section is intended for viewing information and status of connected services, modules, components, and systems. General view of the "Monitoring" section is shown below (Figure 76).

<div align="right">Figure 76: "Monitoring" section</div>

"Monitoring" section contains the following elements:

- List of connected services, modules, components, and systems:
  - "Name" — component/service/system name;
  - "Version" — component/service/system version;
  - "State" — current state (status) of a component/service/system;
  - "Documentation" — links to the documentation if it is present in the component/service/system.

This colors are used to indicate the current status of a service, module, component, or system:

- 🟢 — green color — component/service/system is up and running;
- 🔵 — blue color — component/service/system is loading;
- 🔴 — red color — component/service/system is temporarily unavailable.

18 Licenses section

The "Licenses" section provides the information about available licenses. The section contains the following tabs:

"General information"–shows whether the license has expired (Figure 77);

General information	Estimations	Modules
License has not expired		

Buy or renew a license
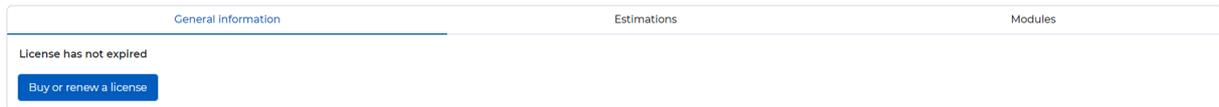
Figure 77: "General information" in the "Licenses" section

"Estimations"–shows the status (enabled/disabled) of licenses for (Figure 78):

- checking quality of facial image (PlatformISO);
- estimation of body attributes (PlatformBodyAttributes);
- Liveness check (PlatformLiveness);
- estimating the number of people in an image (PlatformPeopleCounter);

Licenses

General information		Estimations		Modules
Name	Description	Technical name	Status	
Counting the number of people in the frame	Availability of functionality for estimating the number of people in an image	PlatformPeopleCounter	Enabled	
Photo check	Availability of functionality to check the image for compliance with ISO/IEC 19794-5:2011 and other biometric standards	PlatformISO	Enabled	
Body attributes	Availability of estimating body parameters functionality	PlatformBodyAttributes	Enabled	
OneShotLiveness	Availability of Liveness (OneShot)	PlatformLiveness	Enabled	
Deepfake	Availability of Deepfake	PlatformDeepfake	Enabled	

Buy or renew a license

Figure 78: "Estimations" in the "Licenses" section

"Modules"–shows the status (enabled/disabled) of service licenses for (Figure 79):

- storing data about events in the database (Events Service);
- completing tasks (Tasks Service);
- sending event notifications via a web socket (Sender Service);
- storing samples, reports on task execution, created clusters and additional metadata (Image Store Service);
- creating and storing handlers (Handlers Service).

Licenses

Name	Description	Status
Events service	Stores data on the generated events in the database	Enabled
Tasks service	Performs long tasks, such as garbage collection, extraction of descriptors with a new neural network version, clustering	Enabled
Sender service	Sends notifications about created events via web-socket	Enabled
Image Store service	Stores samples, any objects, reports about long tasks execution, created clusters and additional metadata	Enabled
Handlers service	Creates and stores handlers. Accepts requests for detection, estimation and extraction and redirects them to the Remote SDK service	Enabled
lambdas		Disabled

Buy or renew a license

**Figure 79:** "Modules" in the "Licenses" section

Each tab allows you to go to the page for buying license or renewal.

19 Plugins section

The "Plugins" section provides the information about plugins imported into LUNA PLATFORM 5. Plugins are used to perform secondary actions for the user's needs. For example, you can expand the standard functionality of the product using them. The general view of the "Plugins" section is presented below (Figure 80).

"Plugins" section contains the following elements:

- table of plugins:
    - "Name" — name of the plugin;
    - "Status"–shows the current status (running/not running) of the plugin.
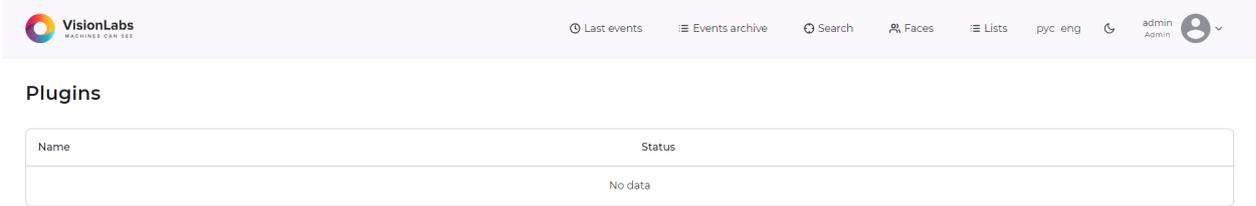
Figure 80: "Plugins" section

For more information on getting a list of imported plugins and their status, see LUNA PLATFORM 5 documentation .