



# **Regula Forensic Studio**

Version 5.6

## **User Guide**

REGULA

2026

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## 2 ABOUT REGULA FORENSIC STUDIO

**Regula Forensic Studio (RFS)** is software that enables users to:

- Control the operation of Regula devices during authenticity verification and forensic examination of passports, identification cards, and other identity documents and granting the right to cross borders; visa labels and stamp impressions, including those used for entry permits; banknotes; driver's licenses, vehicle certificates, and other vehicle-related documents; signatures and short handwritten notes; excise and special stamps; securities and other documents featuring anti-counterfeit security elements.
- Process, analyze, and store examination results in a local database.
- Compare examination results with reference samples stored in external forensic databases.

RFS is compatible with most modern Regula forensic devices and supports a wide range of examination types.

**Note.** Please make sure that you have all the licenses required to work with both the application and the device itself. If the necessary licenses are missing, the software cannot be used.

## 3 GETTING STARTED

### 3.1 System Requirements

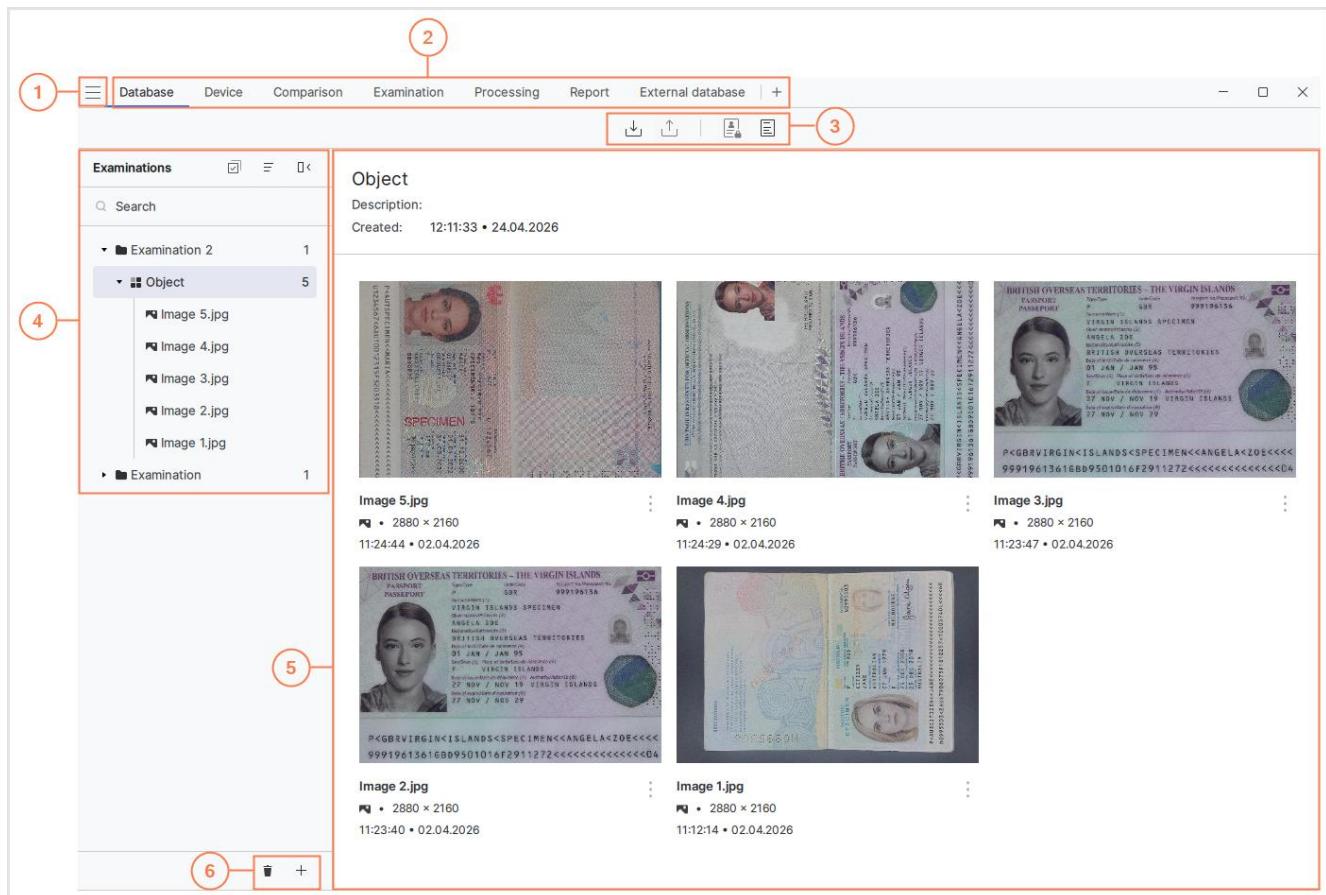
- Processor Intel® Core™ i7 3.4 GHz (recommended)
- Operating system Windows 10, 11
- RAM 16 GB
- At least 4 GB of free disk space
- Screen resolution minimum 1920x1200
- Free USB 3.0 port

### 3.2 Installation

To install Regula Forensic Studio, run the installation program and follow the instructions.

## 4 STRUCTURE AND UI

The RFS program interface consists of the following elements:



### 1 Control and settings menu

Provides access to the program's basic functions and settings.

### 2 Main sections

Provide access to the main sections of the program:

- **Database** – working with the database, managing the list of documents and objects.
- **Device** – working with the Regula device.  
This guide describes all tabs except the **Device** tab. The **Device** tab differs depending on the specific device. For details, refer to the **Device User Manual**.
- **Comparison** – comparison of data (images, video, and other data).
- **Examination** – examination of data with saving the results.
- **Processing** – modification of data using a set of processing tools.

---

|                         |                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                         | <ul style="list-style-type: none"><li>• <b>Report</b> – viewing and editing of reports based on comparison, examination, and processing results using the built-in text editor. The report can be printed or saved in DOCX or PDF format.</li><li>• <b>External Database</b> – working with the information reference system (IRS), which contains images of banknotes, passports, identity cards, visas, driver's licenses, etc.</li></ul> |
| <b>3 Toolbar</b>        | Contains a set of tools that depends on the selected section. For a detailed description, see the sections below.                                                                                                                                                                                                                                                                                                                           |
| <b>4 RFS database</b>   | Contains a list of graphic and composite data related to the current examination object and provides quick access to them.                                                                                                                                                                                                                                                                                                                  |
| <b>5 Main workspace</b> | Displays graphic or composite data depending on the selected tab.                                                                                                                                                                                                                                                                                                                                                                           |
| <b>6 Actions</b>        | Contains functions for working with data, such as creating a new examination or deleting an existing one.                                                                                                                                                                                                                                                                                                                                   |

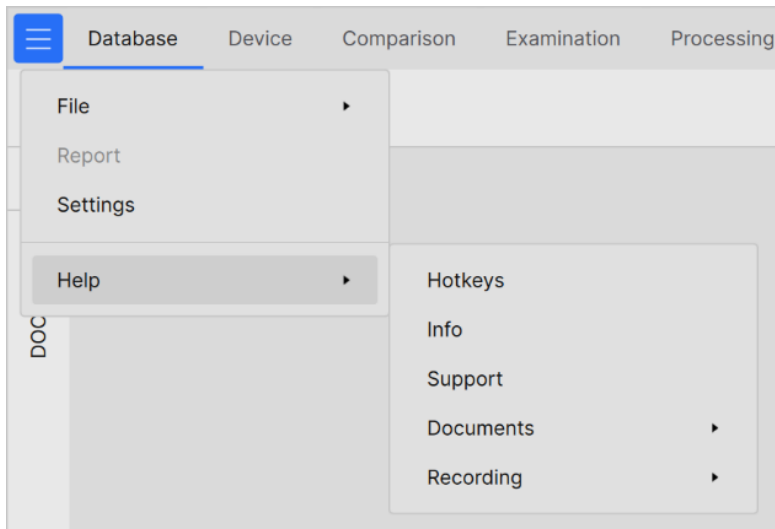
---

More details about each tab can be found below.

**Note.** The screenshots in this guide are provided as examples and may differ slightly from the interface of your software version.

## 4.1 Control and Settings Menu

To open the **Control and settings menu**, click  in the top-left corner.



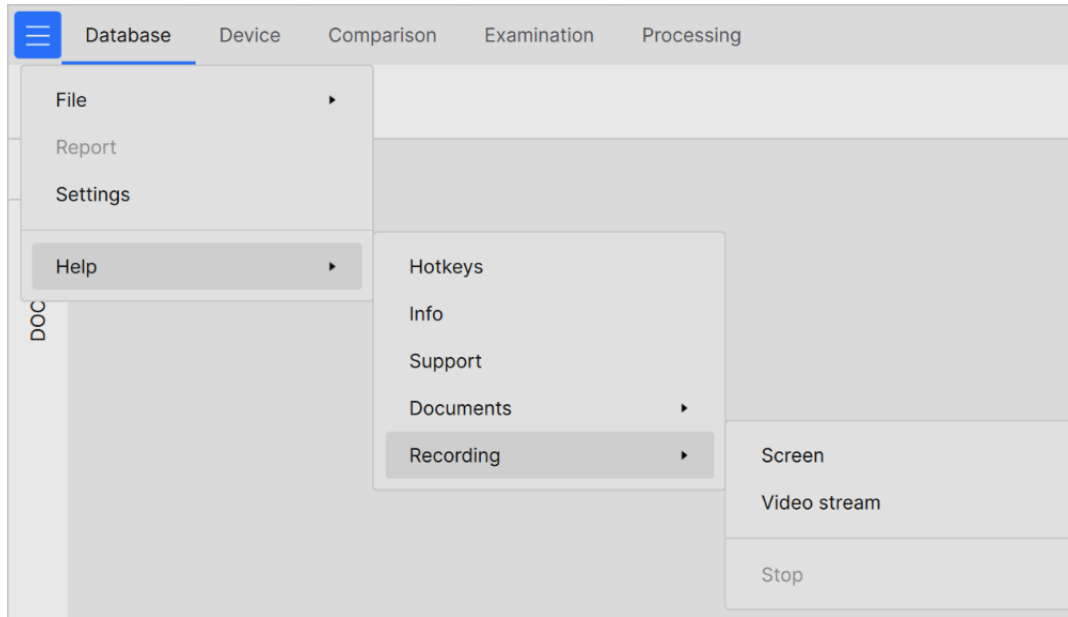
The menu content depends on the selected program tab. Here is the menu for the **Database** tab:

|                 |                                                                                                                                                                                                                             |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>File</b>     | Save, import, export a new file.                                                                                                                                                                                            |
| <b>Report</b>   | Generate a report using graphical and textual information corresponding to the selected items in the database.                                                                                                              |
| <b>Settings</b> | Configure settings within the program tabs: <ul style="list-style-type: none"><li>• General</li><li>• Database</li><li>• Services</li><li>• Device</li><li>• Security checks</li><li>• RFID</li><li>• Measurement</li></ul> |

## Help

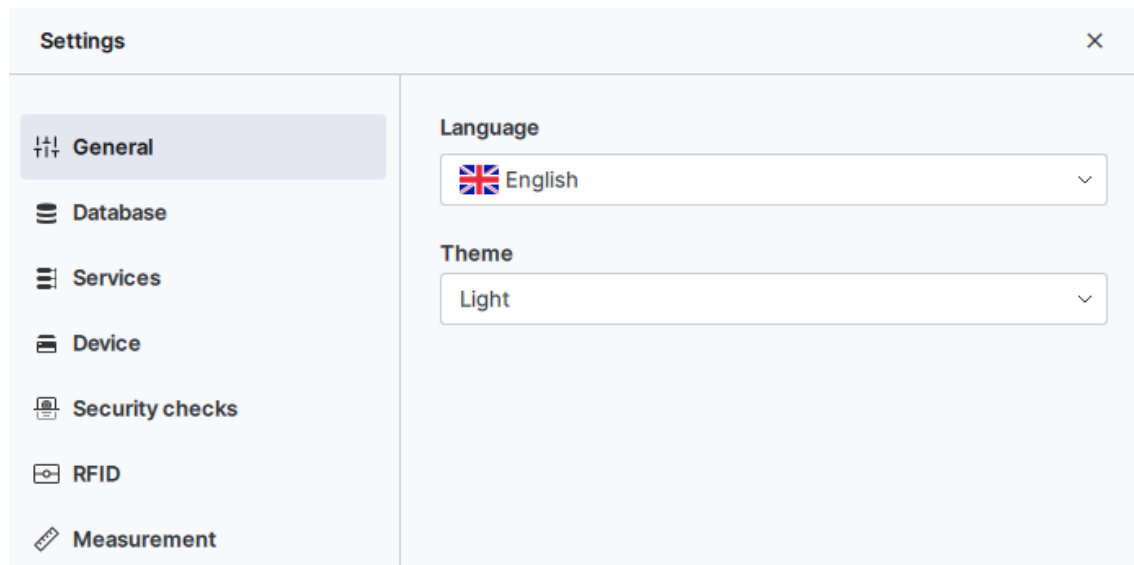
This menu item contains the following sub-items:

- **Hotkeys** – find out keyboard shortcuts.
- **Info** – view program information.
- **Support** – visit the official website for support.
- **Documents** – open the User Manual in the browser.
- **Recording** – initiate screen or camera video stream recording:



See below for details about each tab in the **Settings** menu.

### 4.1.1 General



The **General** tab in the **Settings** menu contains the following parameters:

|                 |                                                                                                                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Language</b> | Select the program language from the drop-down list.                                                                                                                                                                    |
| <b>Theme</b>    | Select the interface theme: <ul style="list-style-type: none"><li>• <b>Light</b> – the program will be displayed in the light theme.</li><li>• <b>Dark</b> – the program will be displayed in the dark theme.</li></ul> |

### 4.1.2 Database

The screenshot shows the 'Settings' dialog box with the 'Database' tab selected. The left sidebar contains icons and labels for 'General', 'Database', 'Services', 'Device', 'Security checks', 'RFID', and 'Measurement'. The main area of the dialog is divided into sections: 'Working directory' with a text field containing 'C:/Users/User/Documents/Regula/rfs/Data/' and a folder icon; 'Image extension' with a dropdown menu showing '.jpg'; 'Ruler' with four checkboxes: 'Top', 'Left', 'Bottom', and 'Right'; 'Label' with two buttons: 'Embedded' (selected) and 'Under image'; and a list of checkboxes for 'Device', 'Conditions', 'Processing', and 'Creation time'.

The **Database** tab in the **Settings** menu contains the following parameters:

|                          |                                                                                                                                                                                                                                                                                                                          |
|--------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Working directory</b> | Set the path to the working directory for storing database files.                                                                                                                                                                                                                                                        |
| <b>Image extension</b>   | Choose the image file extension when saving: .jpg, .jp2, .png, .bmp, .tiff.                                                                                                                                                                                                                                              |
| <b>Ruler</b>             | Select where the ruler will appear in files: <ul style="list-style-type: none"><li>• <b>Top</b> – displays the ruler at the top.</li><li>• <b>Bottom</b> – displays the ruler at the bottom.</li><li>• <b>Left</b> – displays the ruler on the left.</li><li>• <b>Right</b> – displays the ruler on the right.</li></ul> |

---

**Label**

If necessary, automatic information display can be configured and applied to all files.

Select where the label will be displayed automatically in files:

- **Embedded** – displays the information directly on the data.
- **Under image** – displays the information below the data.

---

**Data to display**

Select which data to display in files:

- **Device** – information about the device used to capture the data.
  - **Conditions** – information about the conditions under which the data was captured (light source type, main camera operating parameters, etc.).
  - **Processing** – information about the applied data processing methods.
  - **Creation time** – the date and time the data was captured
-

### 4.1.3 Services

The screenshot shows the 'Settings' dialog box with the 'Services' tab selected. The left sidebar contains icons for General, Database, Services (highlighted), Device, Security checks, RFID, and Measurement. The main area is divided into sections: 'Face SDK service URL' with radio buttons for 'Local' (selected) and 'Remote', and a text field containing 'http://127.0.0.1:41101/'; 'IDV service URL' with a text field containing 'http://172.20.40.33:8000', a 'Ping' button, and a checked checkbox for 'Auto-connect to IDV service'; 'IDV workflow ID' with a text field containing 'wbb4ed76f25b388fb7eaac' and a 'Clear saved credentials' button; and 'External database services' with a checked checkbox for 'Connect Information Reference System (IRS)', a text field containing 'https://172.20.40.224:31202 (AutoDocs Brief)', and 'Find' and 'Add' buttons.

The **Services** tab in the **Settings** menu contains the following parameters:

|                             |                                                                                                                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Face SDK service URL</b> | Add the Face SDK service URL to use for face matching as a part of document authenticity verification: <ul style="list-style-type: none"><li>• Local</li><li>• Remote</li></ul> |
|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

## IDV workflow ID

You can connect to the IDV platform (Identity Verification Platform) and use it as a service for data processing.

For more information about the IDV platform, see:

<https://regulaforensics.com/products/identity-verification-platform/>

To use the IDV platform:

1. Enter the IDV service URL.
2. Click **Ping**. If the entered IDV service URL is valid, the field border will turn green. Otherwise, the field border will turn red.
3. If you want to connect to the IDV service automatically, select the **Auto-connect to IDV service** option. If you do not want to connect automatically, leave this option disabled.
4. Specify the **IDV workflow ID**.

To reset the settings, click the **Clear saved credentials** button.

You can view the technical documentation on IDV at:

<https://docs.regulaforensics.com/develop/idv/>

## **Connect Information Reference System (IRS)**

**Note.** This functionality is available only after purchase.

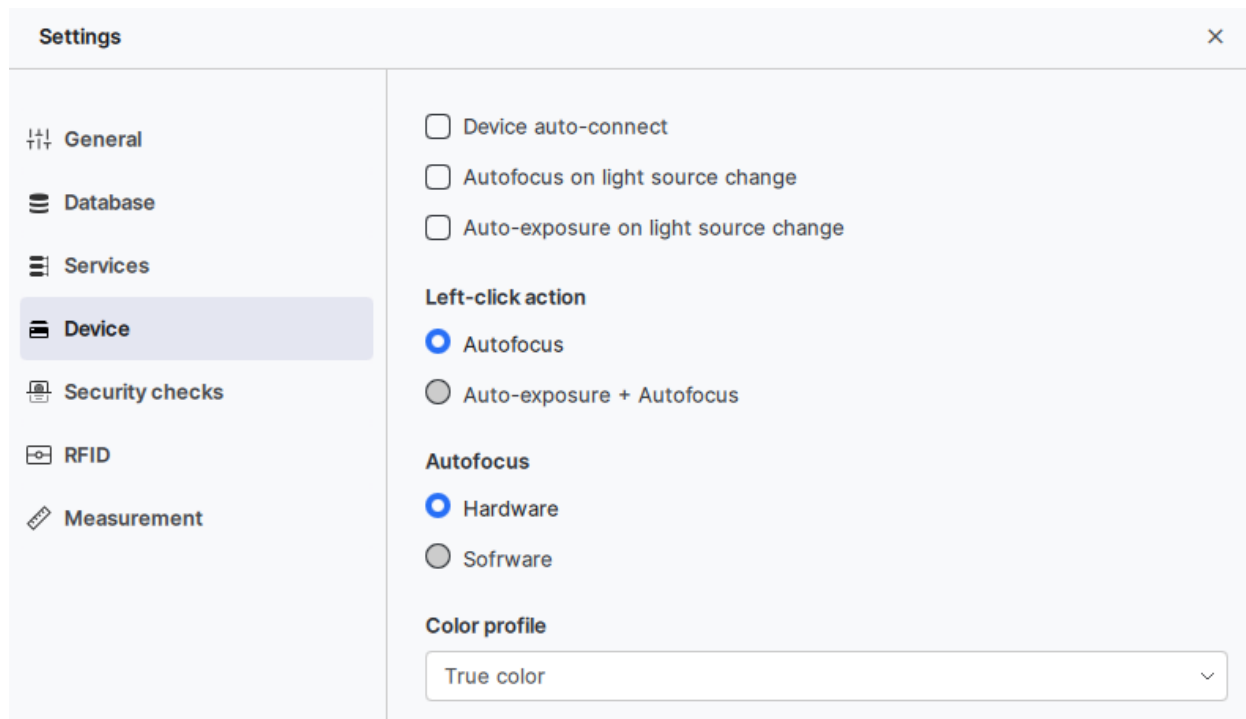
To connect and use IRS:

1. Select the **Connect Information Reference System (IRS)** checkbox.
2. To get a list of available Information Reference Systems, click the **Find** button.
3. Select the required IRS from **the External database services** drop-down list.
4. Click the **Add** button to use this external database for document comparison.

If the checkbox is selected and access to IRS is provided, the **External Database** tab becomes available, containing sample images of documents and banknotes. For more details about the External Database, refer to the External Database section of this manual.

---

#### 4.1.4 Device



The **Device** tab in the **Settings** menu contains the following parameters:

|                                             |                                                                                                                                                                                                                                                                                                                    |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Device auto-connect</b>                  | Enable automatic device connection when the software starts, provided that the device is connected to the computer's USB 3.0 port and the ON/OFF button on the device is switched to ON.                                                                                                                           |
| <b>Autofocus on light source change</b>     | Enable automatic adjustment of the device focus when switching from one light source to another and when changing the zoom.                                                                                                                                                                                        |
| <b>Auto-exposure on light source change</b> | Enable automatic adjustment of the exposure when switching from one light source to another and when changing the zoom.                                                                                                                                                                                            |
| <b>Left-click action</b>                    | Assign the left mouse button the function of: <ul style="list-style-type: none"> <li>• <b>Autofocus</b> – automatic device focusing at a specifically selected point.</li> <li>• <b>Auto-exposure + Autofocus</b> – automatic device focusing and exposure adjustment at a specifically selected point.</li> </ul> |

**Autofocus**

Select an autofocus type:

- **Hardware** – autofocus is performed by the device using the built-in focusing mechanism of the camera.
- **Software** – autofocus is performed programmatically: the system analyzes the image and automatically selects the optimal focus parameters.

---

**Color profile**

Select the color rendering mode: true color, vibrant, high contrast.

Select the device color rendering mode:

- **True color** — displays the data with natural color reproduction.
  - **Vibrant**— makes the data more saturated and vivid.
  - **High contrast** — enhances the differences between light and dark areas of the data.
-

### 4.1.5 Security Checks

**Settings**

**General**

**Database**

**Services**

**Device**

**Security checks**

**RFID**

**Measurement**

**Date format**

dd.MM.yyyy

**Measurement system**

☐ Imperial

☒ Metric

☐ Double page spread

☒ Multipage processing

☒ Hide text fields

☒ Hide graphic fields

**Custom parameters**

```
{
}
```

Reset

The **Security checks** tab in the **Settings** menu contains the following parameters:

|                             |                                                                                                                                                                          |
|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Date format</b>          | Set the date format in authenticity verification results.                                                                                                                |
| <b>Measurement system</b>   | Select the measurement system: <ul style="list-style-type: none"> <li>Imperial</li> <li>Metric</li> </ul>                                                                |
| <b>Double page spread</b>   | Enable this option if examining a double-folded document.                                                                                                                |
| <b>Multipage processing</b> | Use this option if you want the program to request all pages specified for a document. This option is available only when connected to the external <b>IRS</b> database. |

---

|                            |                                                                                                                                                                                                                                                                                                                                                                                                               |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Hide text fields</b>    | Select to hide all text data in the document when using the <b>Depersonalization</b> option (on the <b>Database</b> tab).                                                                                                                                                                                                                                                                                     |
| <b>Hide graphic fields</b> | Select to hide all graphic data in the document when using the <b>Depersonalization</b> option (on the <b>Database</b> tab).                                                                                                                                                                                                                                                                                  |
| <b>Custom parameters</b>   | In this field, you can enter custom parameters for integration with the Face SDK. For examples of custom parameters, see the link:<br><br><a href="https://docs.regulaforensics.com/develop/doc-reader-sdk/mobile/integration/integration-with-face-sdk/#configure-parameters">https://docs.regulaforensics.com/develop/doc-reader-sdk/mobile/integration/integration-with-face-sdk/#configure-parameters</a> |

---

To reset the settings on the **Security checks** tab, click **Reset**.

## 4.1.6 RFID

**Settings**

**General**

**Database**

**Services**

**Device**

**Security checks**

**RFID**

**Measurement**

**Active device**

PKD directory

C:/Users/User/AppData/Local/Regula/PKD/

**Maximum baud rate (kbit/s)**

424

**Basic Security Messaging procedure**

☐ BAC

☒ PACE

**Profiler**

☒ Doc 9303, edition 6, 2006

☐ LDS and PKI Maintenance, v2.0, May 21, 2014

☐ DS Certificate Priority

☐ Using External CSCA

☒ Trust PKD

☒ Passive authentication (PA)

Reset

The **RFID** tab (Radio Frequency Identification; hereinafter referred to as RFID) in the **Settings** menu contains the following parameters:

|                      |                                                                                                                                                                                                                                                                                                                                   |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Active device</b> | <p>Select the device for scanning documents with RFID-chip that will be used by default when multiple devices are connected.</p> <p>When RFS is launched for the first time, the first device in the list is selected by default. To change the device, select the required one from the <b>Active device</b> drop-down list.</p> |
| <b>PKD directory</b> | <p>Specify the directory of the Public Key Directory (PKD) for RFID certificates.</p>                                                                                                                                                                                                                                             |

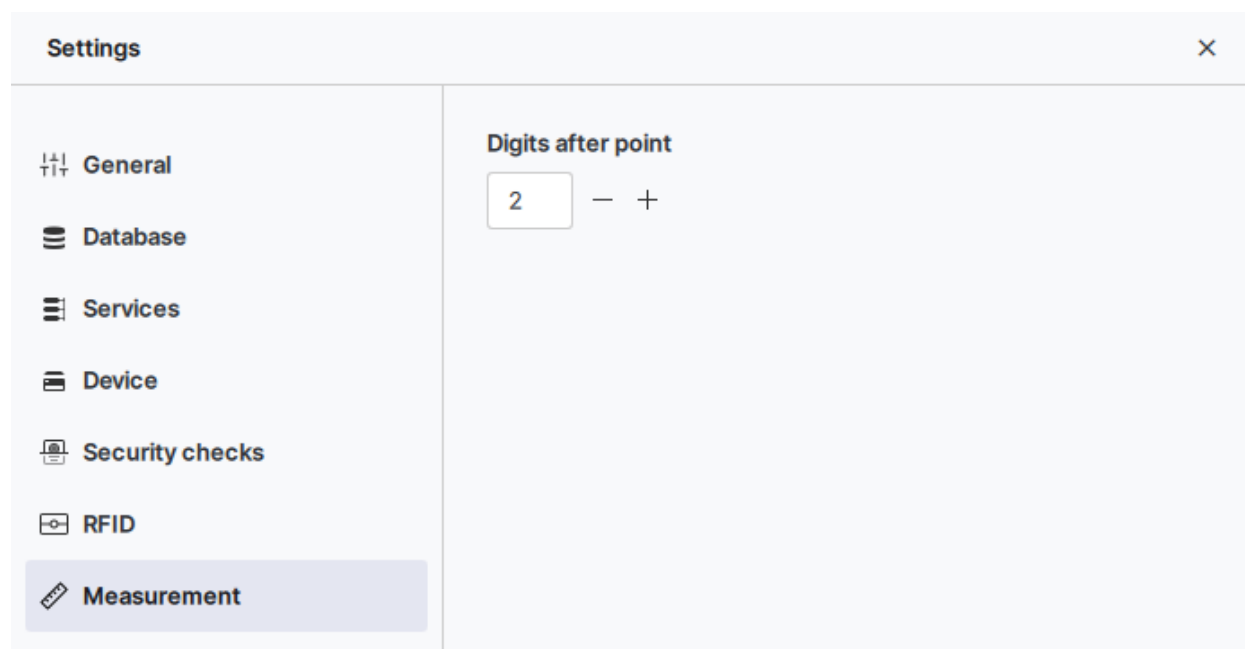
|                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Maximum baud rate (kbit/s)</b>         | Select the reading speed for RFID documents from the drop-down list.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Basic Security Messaging procedure</b> | <p>Select the secure messaging (SM) procedure type:</p> <ul style="list-style-type: none"> <li>• <b>BAC</b> (Basic Access Control) – basic access control that restricts access to chip data and prevents unauthorized reading.</li> <li>• <b>PACE</b> (Password Authenticated Connection Establishment) – establishes a password-authenticated connection for secure communication between the reader and the chip before data is read (by default).</li> </ul>                                                                                                                                                                                        |
| <b>Profiler</b>                           | <p>Select the profiler type:</p> <ul style="list-style-type: none"> <li>• <b>Doc 9303, edition 6, 2006</b> – a profiler type based on the 6th edition of the ICAO Doc 9303 standard, published in 2006. It is used to process RFID data from electronic documents in accordance with the earlier version of the standard.</li> <li>• <b>LDS and PKI Maintenance, v2.0, May 21, 2014</b> – a profiler type based on version 2.0 of the LDS and PKI Maintenance specification, dated May 21, 2014. It is used to work with the Logical Data Structure (LDS) and the Public Key Infrastructure (PKI) in accordance with the later requirements.</li> </ul> |
| <b>DS Certificate Priority</b>            | Enable prioritized use of Document Signer (DS) certificates, which are used to verify the authenticity and integrity of RFID chip data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Using External CSCA</b>                | Allow the program to use Country Signing Certification Authority (CSCA) certificates from external sources to verify the authenticity of DS certificates and RFID chip data.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Trust PKD</b>                          | Enable the function to trust certificates from PKD.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Passive authentication (PA)</b>        | Enable the passive authentication.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Do not conduct AA after CA</b>         | Enable this option to avoid performing active authentication after chip authentication.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>ePassport data groups</b>              | Check the data groups of the RFID electronic passport.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

**eDL data group**

Check the data groups of the RFID electronic driver license.

---

### 4.1.7 Measurement



The **Measurement** tab in the **Settings** menu contains the following parameters:

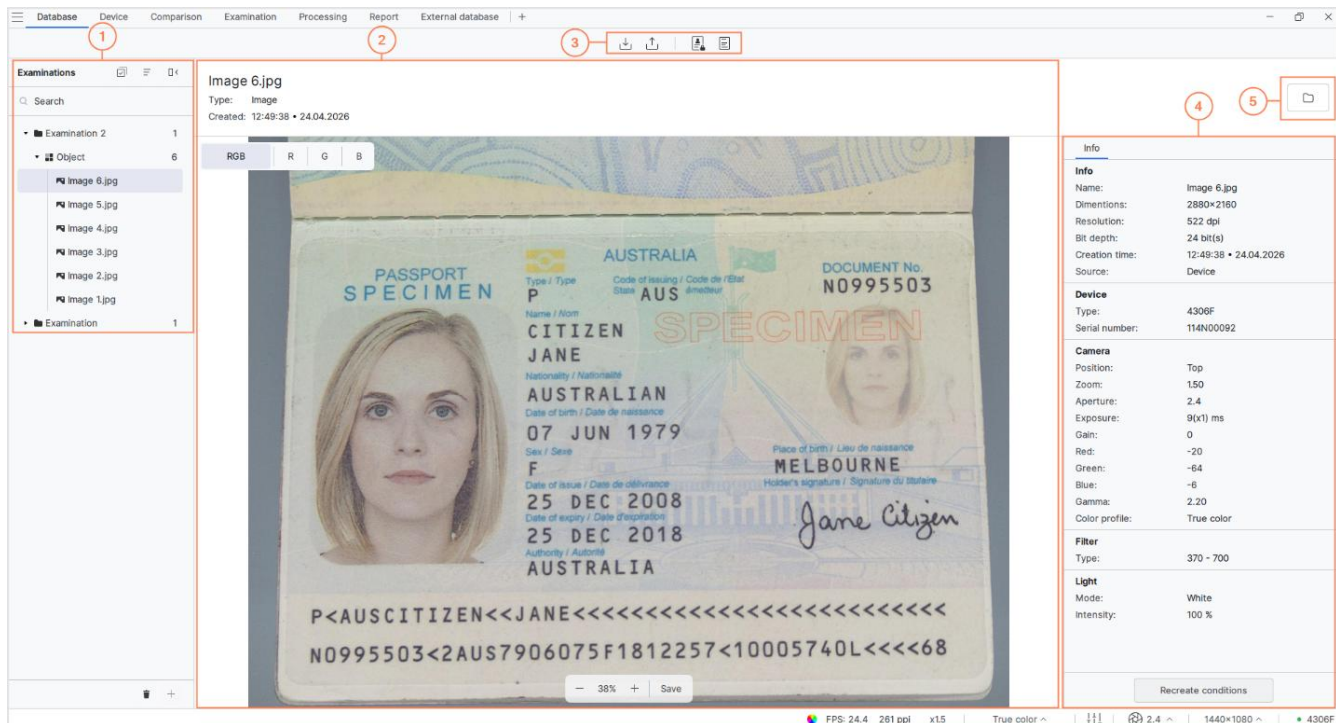
---

|                           |                                                                                                                |
|---------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Digits after point</b> | Define the number of digits after the decimal point for the measurement results in the <b>Measurement</b> tab. |
|---------------------------|----------------------------------------------------------------------------------------------------------------|

---

## 4.2 Database

Work with the RFS database is performed in the **Database** tab.



### 1 RFS database

Contains a list of graphic and composite data related to the current examination object and provides quick access to them.

### 2 Main workspace

Displays the selected file.

This window also contains the following control elements:

- **RGB** – an image in white light showing all three-color channels simultaneously.
- **R** – red component.
- **G** – green component.
- **B** – blue component.
- **Zoom** – allows you to zoom in on or out of the examination area of the object.
- **Save** – saves the modified data to the database.

### 3 Toolbar

Contains the following tools:

-  **Import** – click to import a file.
-  **Export** – click to export a file.
-  **Data depersonalization** – click the icon to create a file with hidden data. Hidden data may include personal text or graphic data, such as document holder information or a photograph. The file with hidden data is saved in the same directory as the original file.

**Note.** You can specify which data will be hidden (graphic or text data) in the application settings. To do this, go to **Control and Settings Menu → Settings → Security checks** and select the appropriate option:

  - **Hide text fields** – hides all text data.
  - **Hide graphic fields** – hides all graphic data.
-  **Create report** – click this icon to generate a report using graphic and text information.

### 4 Tool control panel

Contains:

- Information about :
  - the selected data (name, dimensions, resolution, bit depth, creation time, and source);
  - the device type and its serial number;
  - the camera settings, filter, and light source used during the examination.
- **Recreate conditions** – click this button to restore the data capture conditions.

### 5



#### Open file location

Opens the folder on the local computer where all RFS database data is stored.

### 4.2.1 Structure and Data Types

In RFS, data is organized according to the following structure: **Examination > Object > Data**.

**Examination** is the top level of the hierarchy and groups **Objects**. An **Examination** can be a real document and its parts, such as pages, security features, and other fragments. The **Examination** can also be, for example, a country, when different samples of travel documents or securities are being examined.

**Object** is a physical object or a separate fragment of it that is examined using an external Regula device or RFS tools.

**Data** are individual elements obtained while working with RFS. They belong to a specific **Object** and **Examination** and are stored in the local RFS database.

Data can be used individually or combined into groups. In a group, each file contains a specific characteristic of the same object, for example, the view of a document security feature in different spectral ranges.

RFS works with two types of data:

- **Graphic data** – images from various sources:
  - external Regula devices
  - third-party input devices, such as video capture devices, scanners, and others
  - graphic files
  - external expert databases
- **Combined data** – data obtained by combining two or more datasets, sources, elements, or types of information into one common dataset.

Sources of new graphic and composite data may include:

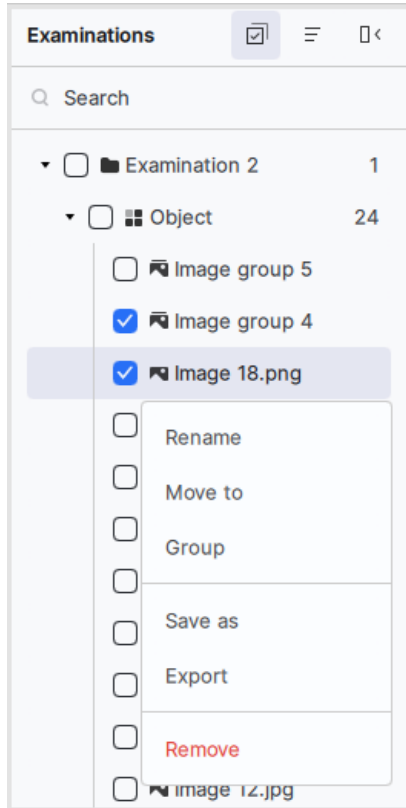
- the file system
- the system clipboard
- image processing procedures
- external devices

When working with some of the Regula devices, you can obtain and save specific types of data marked by the following icons:

|                                                                                         |                                                  |
|-----------------------------------------------------------------------------------------|--------------------------------------------------|
|  UvLum | Result of UV afterglow examination.              |
|  IrLum | Result of automatic IR luminescence examination. |
|  hsa   | Result of hyperspectral analysis examination.    |
|        | Result of 3D surface reconstruction examination. |
|  rfid  | Result of RFID chip examination.                 |
|        | Result of automatic authenticity check.          |
|        | Result of hyperspectral examination.             |

## 4.2.2 Actions with data

In the **RFS database** panel, you can perform the following actions:

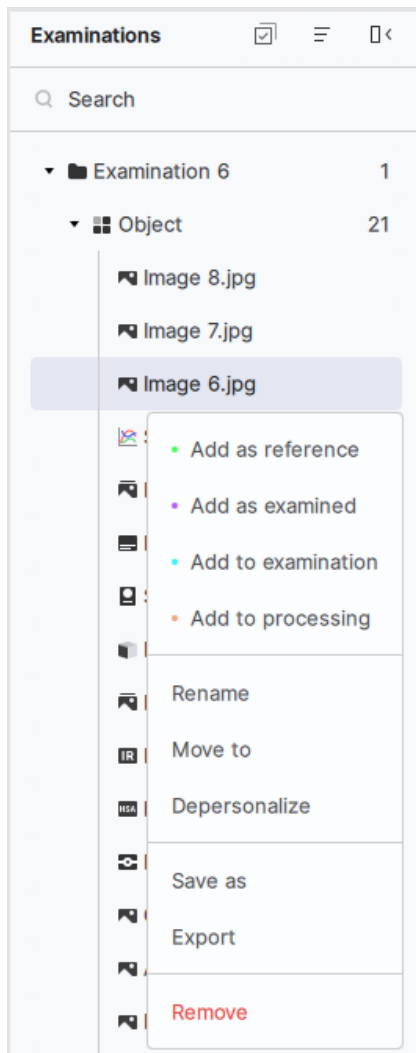


With multiple files at once:

-  **Select** – click this icon to select multiple files from the list.
  - **Rename** – change the name of the selected file in the database.
  - **Move to** – move the selected files to another object or examination in the database panel.
  - **Group** – combines the selected images into one group.
 

**Note.** Images must be the same size to correctly generate the composite image and GIF file.

In the database, you can open this group and view all added images, as well as the created GIF file.
  - **Ungroup** – ungroup the read data or an image group into separate files. Available only for the following data types:
    - Image group
    - HSA
    - RFID
    - IrLum
    - UvLum
    - Result of automatic authenticity check
    - Result of 3D surface reconstruction examination
  - **Save as** – save the selected files to the local computer.
  - **Export** – export the selected files.
  - **Remove** – delete the selected files.
-  **Sort** – sort data by criteria (name, date).
-  **Collapse panel** – collapse the RFS database panel.



With one selected file. To do this, right-click the required file and select an action from the drop-down list:

- **Add as reference** – select the file for comparison as a reference. For more details, see the **Comparison** section.
- **Add as examined** – select the file for comparison as an examined file. For more details, see the **Comparison** section.
- **Add to examination** – select the file for examination. For more details, see the **Examination** section.
- **Add to processing** – select the file for further processing. For more details, see the **Processing** section.
- **Rename** – change the name of the selected file in the database.

**Note.** The characters <, >, :, ", /, \, |, ?, \* cannot be used in file and folder names. A trailing space at the end of a file or folder name is also not allowed.

- **Move to** – move the selected file or group of files to another object or examination in the database panel.
- **Depersonalize** – hide text or graphic personal data contained in the selected file.
- **Save as** – save the selected file to the local computer.

In the **Save As** pop-up window, you can change the folder where the file will be saved, change the file resolution, add a ruler, and add information about the device, conditions, and time when the file was created.

- **Export** – export the selected file from the database to the local computer.
- **Delete** – delete the selected file from the database.

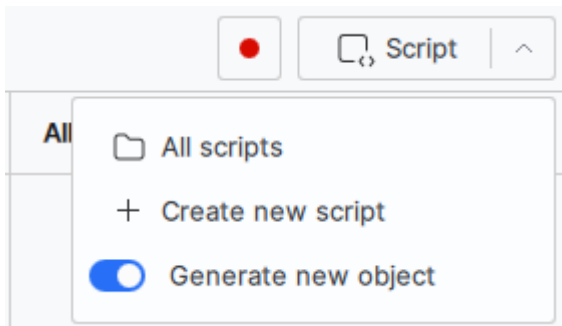
## 4.3 Device

In the **Device** tab, the operation of the device is performed. For details, refer to the **Device User Manual**.

### 4.3.1 Examination Scripts

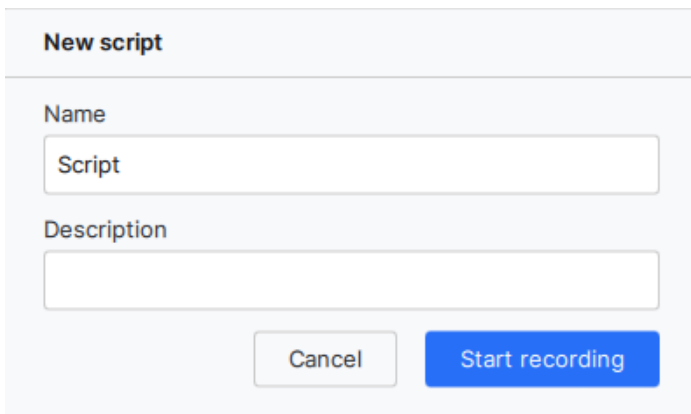
This section explains how to create, record, and manage scripts within the **Device** tab. By following these steps, you can capture a sequence of actions, save them as reusable scripts, and organize them for future use. The process includes creating a new script, recording actions, and managing saved scripts.

1. On the toolbar of the **Device** tab, find the **Script** button in the top right corner and click the drop-down icon. Select **+ Create new script**:



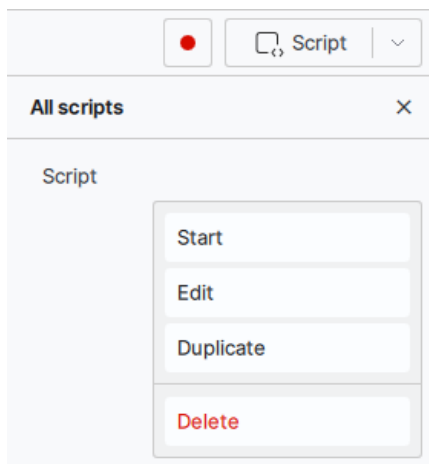
To save the outcomes of actions within the scenario as a separate object on the **Database** tab, select the **Generate new object** radio button.

2. Fill in the **Name** and **Description** fields and click the **Start recording** button:

A screenshot of the 'New script' dialog box. It has a title bar 'New script'. Below the title bar, there are two text input fields: 'Name' and 'Description'. The 'Name' field contains the text 'Script'. At the bottom of the dialog, there are two buttons: 'Cancel' and 'Start recording'.

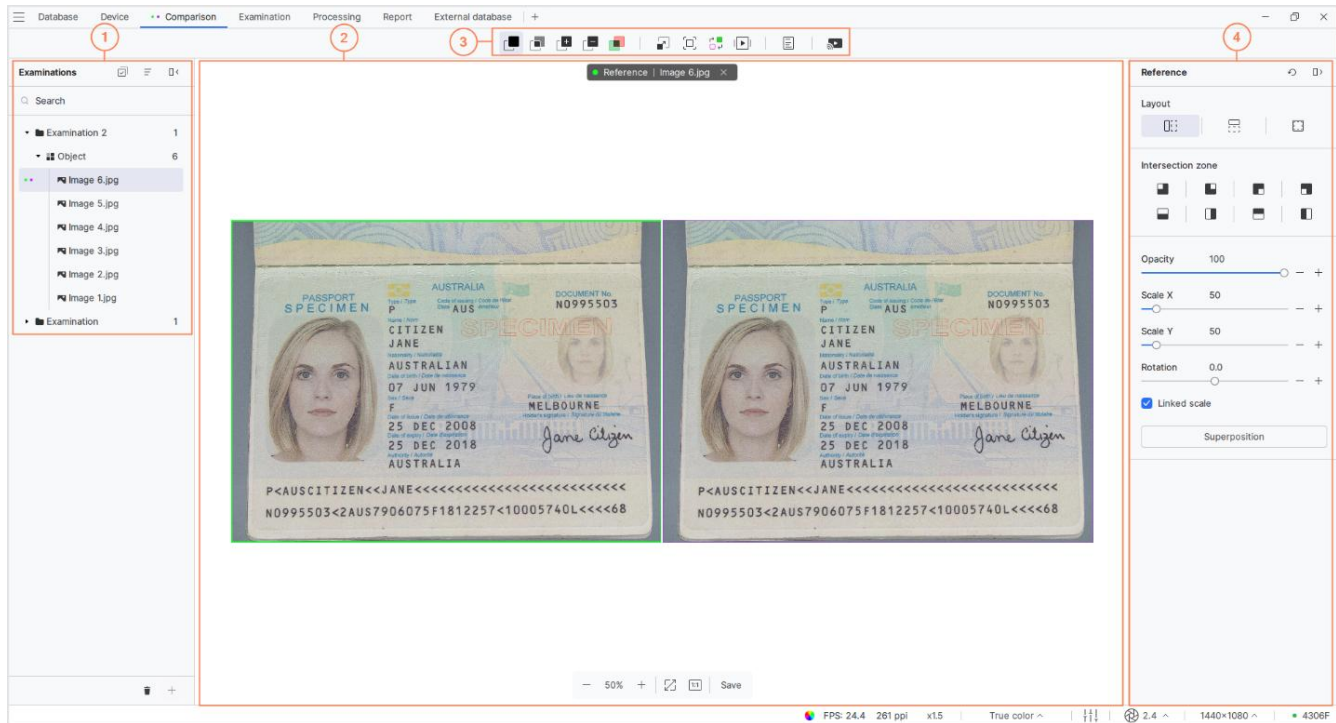
3. During script recording, the program window will be outlined in red. Perform the necessary actions in sequence; they will be saved in the list on the right. When finished, click the **Stop** button.

- The script will be added to the **All scripts** list. To run, edit, duplicate, or delete the script, right-click on it:



## 4.4 Comparison

RFS allows you to compare two data files. During comparison, one of the files serves as the reference, and the other as the file under examination. The comparison tool can be used only when both the reference file and the file under examination are open in the **Main workspace**.



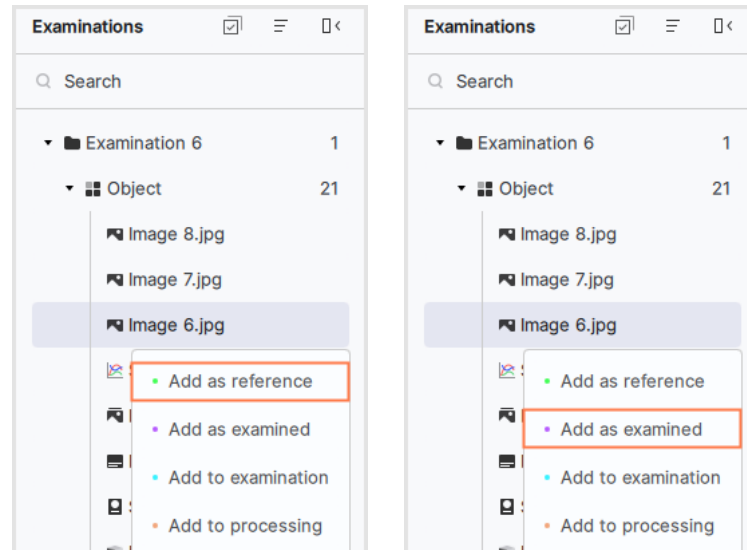
It is also possible to add an item from an **External database** as a reference, see the **External database** section of this manual for details.

In the **Comparison** tab, the following elements are available:

## 1 RFS database

Contains a list of graphic and composite data related to the current examination object and provides quick access to them.

To add the file from the database into the comparison area, double-click it with the left mouse button, or right-click it in the database and select **Add as examined** to set it as the examined file or **Add as reference** to set it as the reference:



## 2 Main workspace

Displays the selected reference file and file under examination.

This window also contains the following control elements:

- **Zoom** – allows you to zoom in on or out of the examination area of the file.
- **Fit to screen** – adjusts the file display size to fit the **Main workspace**.
- **Actual size** – returns the file to its original size.
- **Save** – saves the modified data to the database.

### 3 Toolbar

Contains the following tools:

-  Intersection
-  Stitching
-  Addition
-  Subtraction
-  Color tint
-  Auto DPI
-  Autoresolution
-  Reverse
-  Timer
-  Report
-  Live video

See below for a detailed description of each tool.

---

### 4 Tool control panel

Contains a different set of parameters for controlling the tools, depending on the tool selected on the **Toolbar**. See below for a detailed description.

---

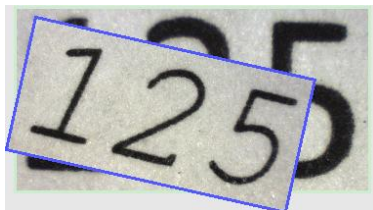
To change the file size or position:

1. Left-click the file. A blinking border will appear around the selected file. The border color may vary depending on the selected file: the border will be green for the reference file and purple for the file being examined.
2. To move the file, hold it with the left mouse button.
3. To resize the file, hold one of its borders and drag it to the desired size.

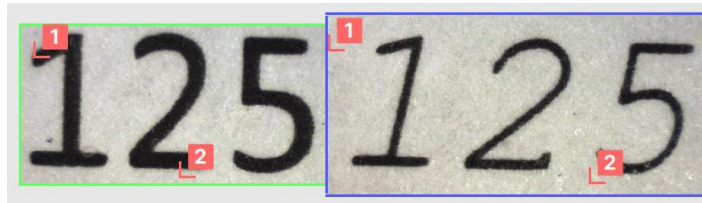
The following tool parameters for comparing data can be configured on the **Tool control panel**:

- **Layout** – the position of the reference and the file being examined relative to each other in the **Main workspace**:
  -  **Row** – side by side, aligned along the right/left edges.
  -  **Column** – side by side, aligned along the bottom/top edges.
  -  **Center** – cascade layout, with one file placed over the other.
- **Intersection zone** – selects the position of the visibility restriction area for the image intersection zone.
- **Opacity** – adjusts the transparency level of the intersection between the sample and the file being examined relative to each other in the **Main workspace**.
- **Scale X** – adjusts the scale along the X-axis.
- **Scale Y** – adjusts the scale along the Y-axis.
- **Rotation** – the rotation angle. By default, rotation is performed relative to the center of the file.
- **Linked scale** – select this checkbox so that changing the scale along the X- or Y-axis proportionally changes the other scale value.
-  **Reset** – click this icon to reset the values to their initial state, as set upon activation.
- **Superposition** – to quickly preview the intersection of two files, you can use the two-point alignment method by clicking this button. Two points will appear on each image for setting the alignment. The result of the preliminary intersection of two images is defined by the position of the points and confirmed by clicking **Set**:

Result of preliminary alignment  
of two files:

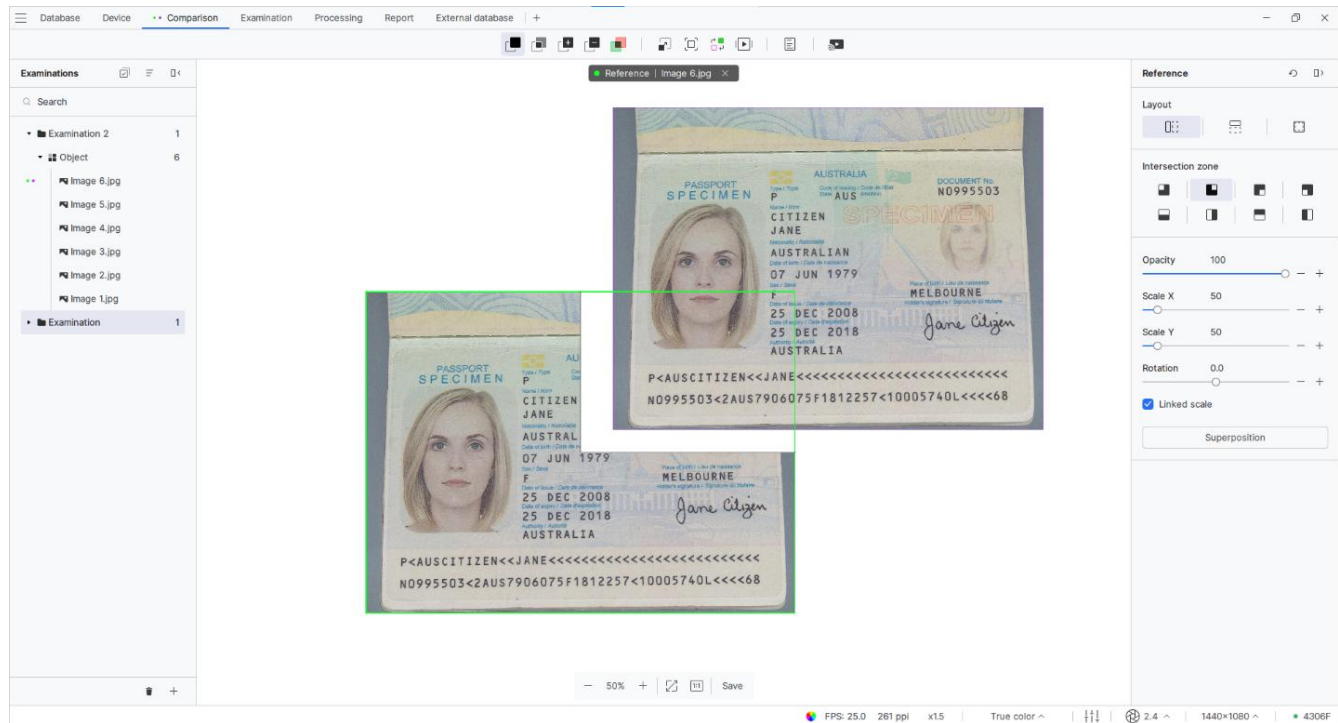


Example of setting file alignment points:



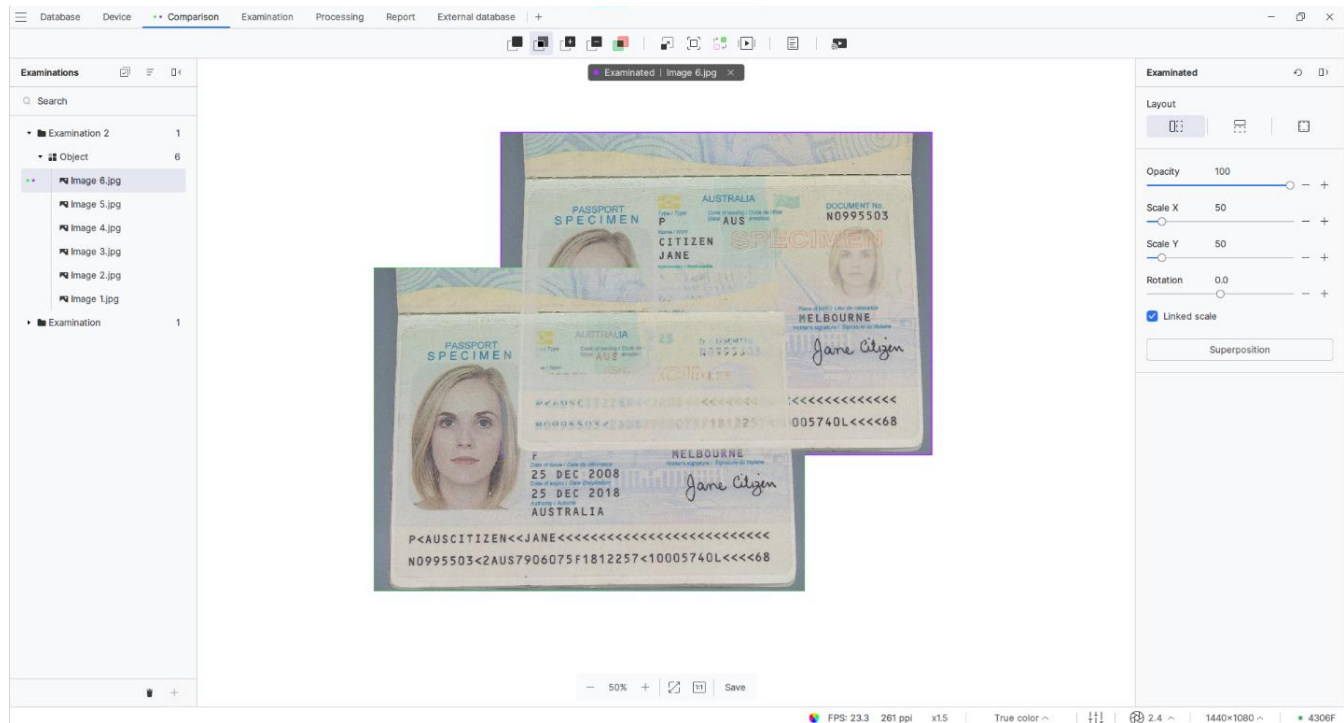
### 4.4.1 Intersection

The **Intersection**  tool is used to compare data by processing the common area of the reference and the file with the data being examined. The common area is completely filled with their content, and the points within it are combined according to the selected tool parameter.



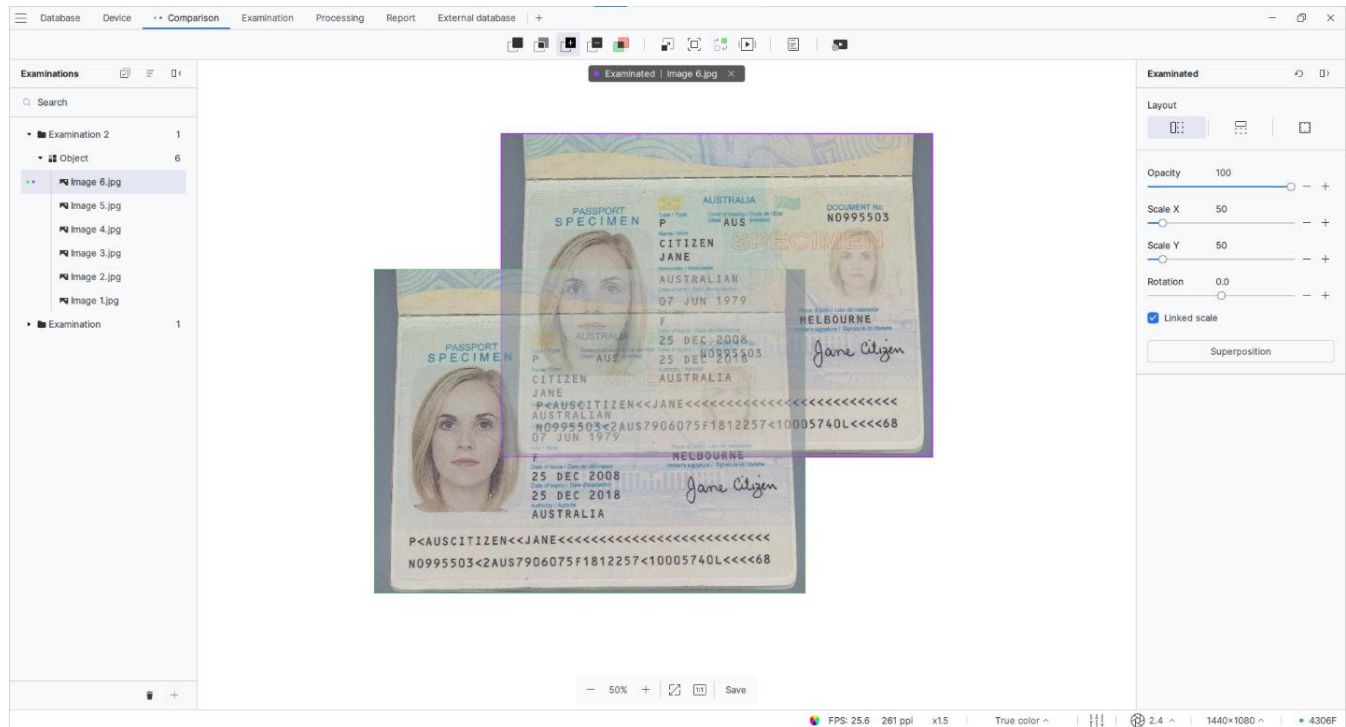
## 4.4.2 Stitching

The **Stitching**  tool is used to compare data by overlaying data onto each other. As a result, for each point in the intersection area, the brightest point from the two images is selected.



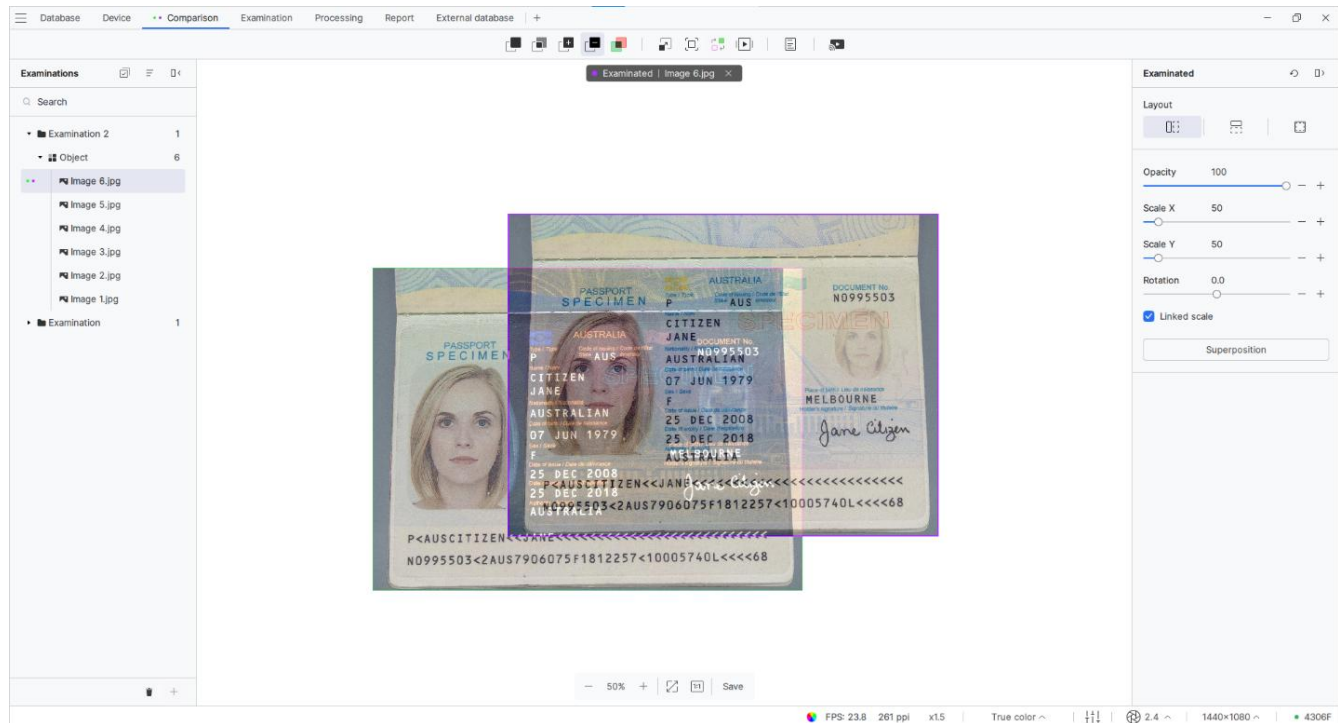
### 4.4.3 Addition

The **Addition**  tool is used to compare data by overlaying data onto each other. In the intersection area, fragments of both files remain visible. For each point in the intersection area, the brightest point is selected from the two images, and the transparency is automatically set to 50%.



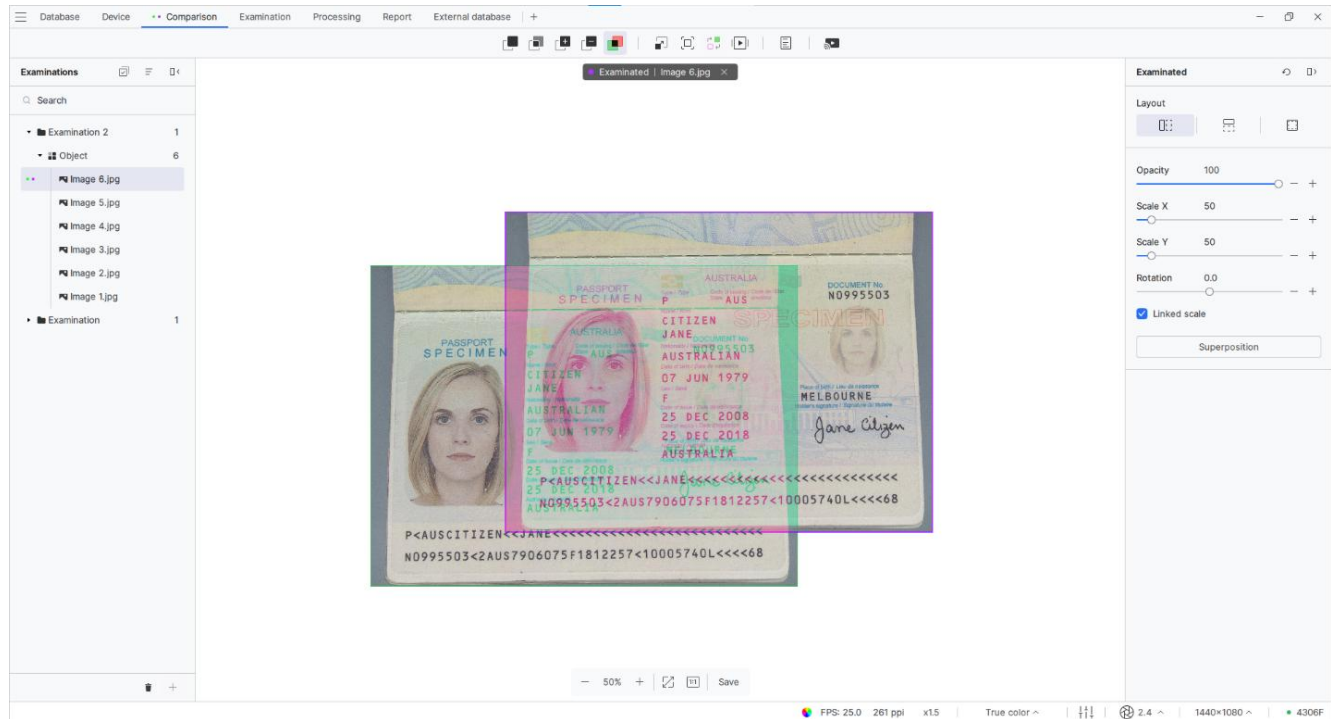
## 4.4.4 Subtraction

The **Subtraction**  tool is used to compare data by mutually subtracting files. The closest point values in the images are displayed as neutral gray, while the most different values are displayed as black or white. Transparency is automatically set to 50%.



## 4.4.5 Color tint

The **Color tint**  tool is used to compare data by overlaying files onto each other. As a result, the overlapping areas acquire red and green tints.



#### 4.4.6 Auto DPI

The **Auto DPI**  tool is used to compare data by automatically adjusting the size of the sample to match the size of the file being examined and displaying it accordingly.

#### 4.4.7 Autoresolution

The **Autoresolution**  tool is used to compare data by automatically adjusting the size of the file being examined to match the size of the sample and displaying it accordingly.

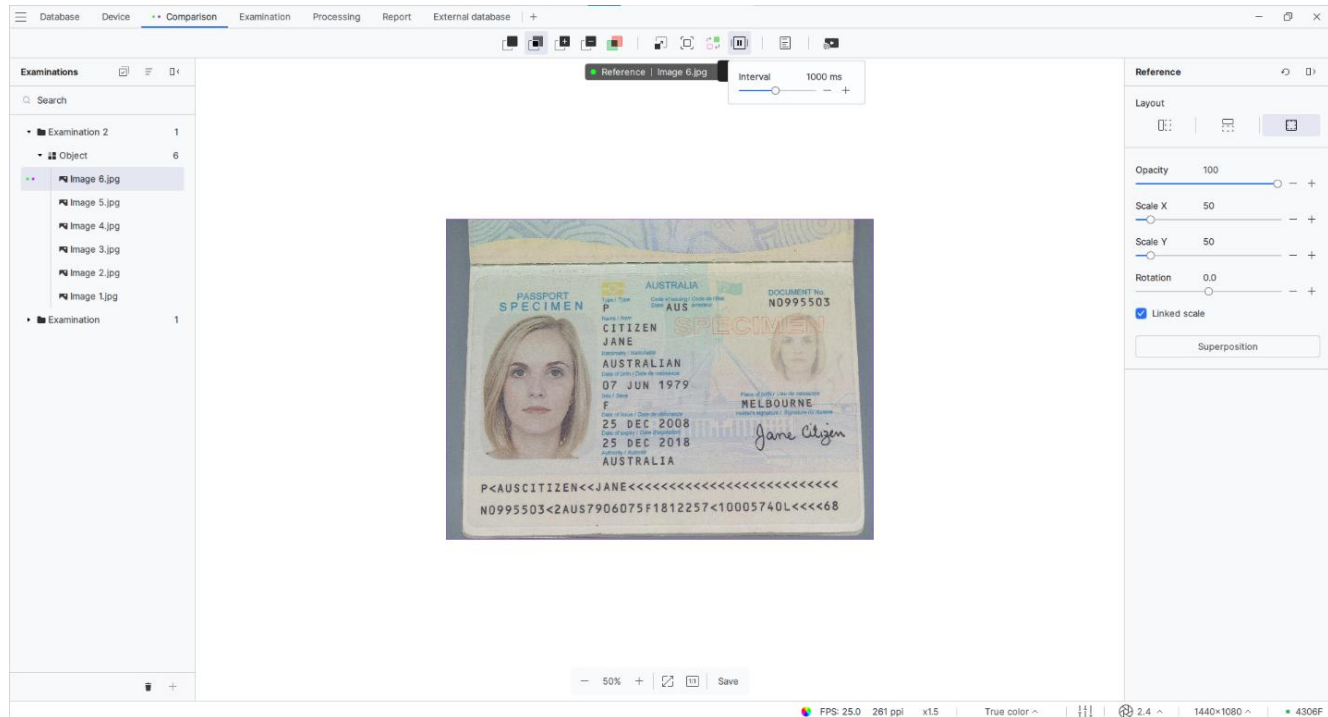
#### 4.4.8 Reverse

The **Reverse**  tool is used to compare data by changing the display order of the sample and the file being examined.

## 4.4.9 Timer

The **Timer**  tool is used to compare data by activating a mode that alternately turns the visibility of the examined image on and off for comparison with the reference.

The on/off interval is specified in milliseconds (ms).



### 4.4.10 Report

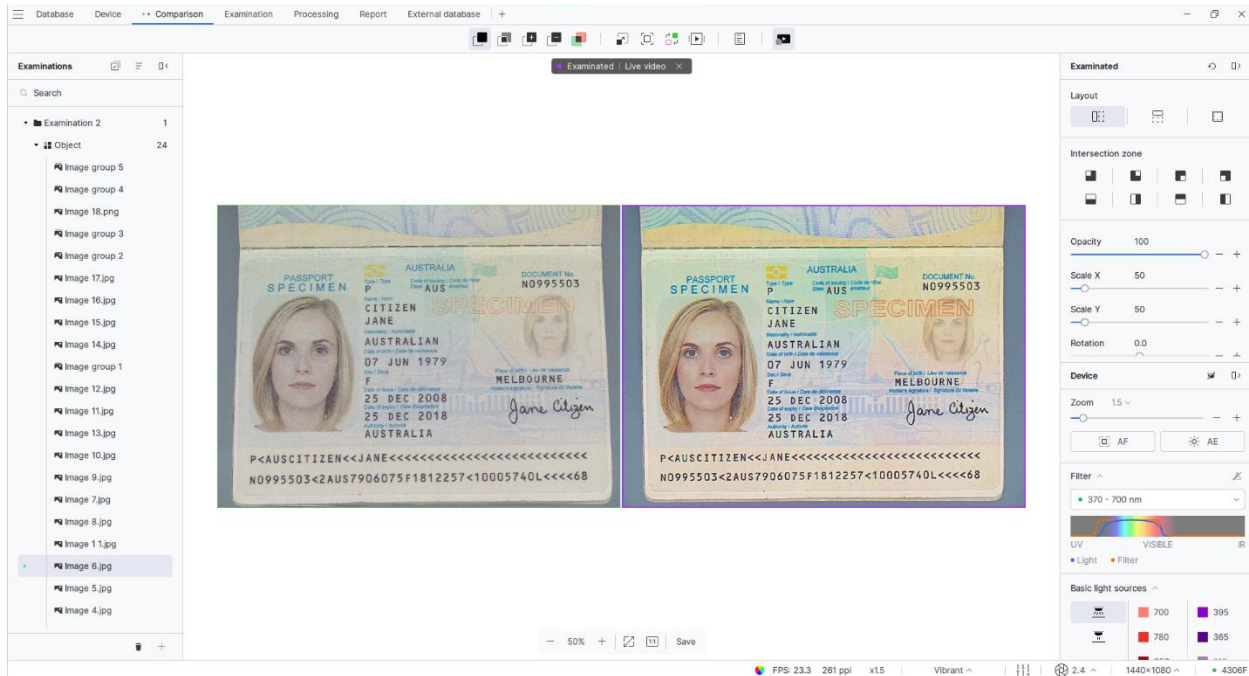
The **Report**  tool is used to create a report on the current comparison.

To generate a report, click . The completed report is available on the **Report** tab, where all reports are stored.

For more information on working with reports, see the **Report** section of this guide.

#### 4.4.11 Live video

The **Live video**  tool is used to compare data when an external RFS device is connected. The real-time video image from the device camera can be added as a reference file or as the file being examined.



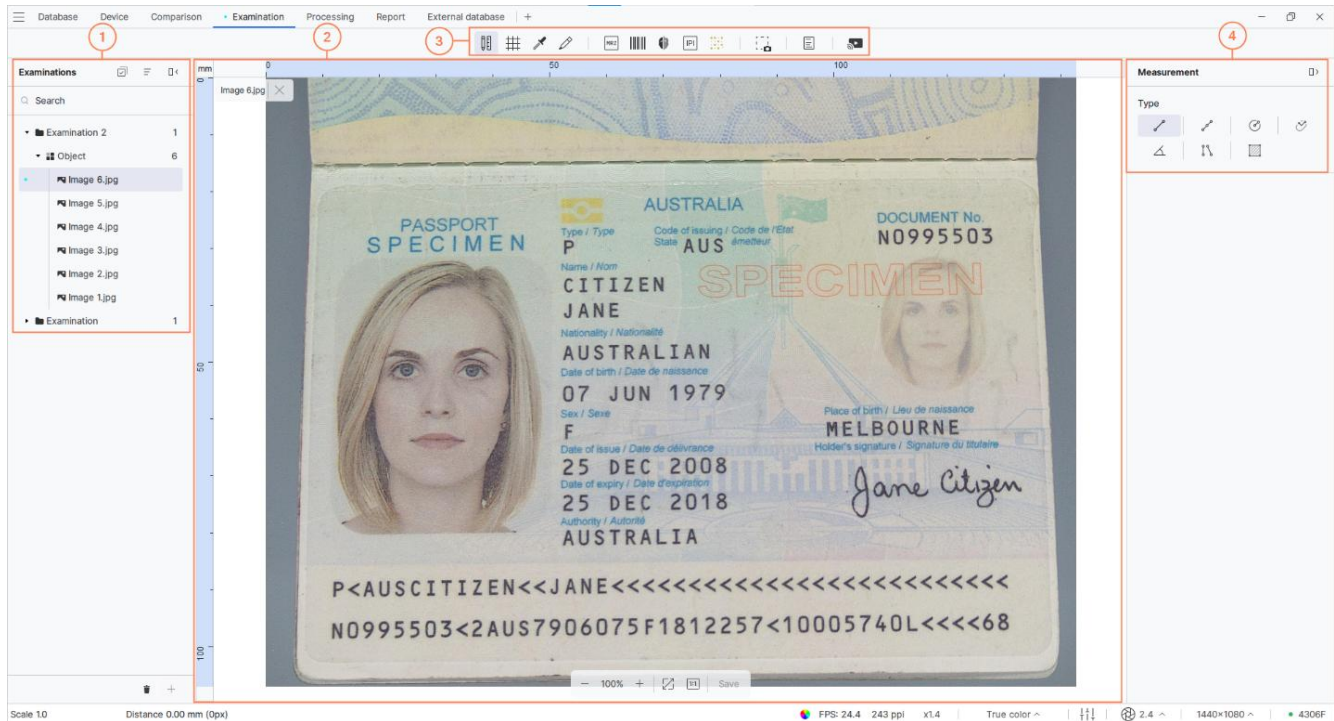
Depending on the selected tool on the **Toolbar** and the RFS device model, the **Tool control panel** may contain different sets of parameters.

In the bottom-right corner, you will find a panel with parameters that allow you to quickly configure the video display:

- **Color profile** – controls the overall brightness of the image or video stream. Allows you to make the image lighter, darker, or more contrast-rich.
- **Adjustment** – a drop-down list with advanced video processing parameters.
- **Aperture** – controls the aperture size.
- **Camera mode**:
  - **Display** – shows the image at a reduced size.
  - **Full** – shows the actual image size.
  - **Extended** – expands the camera frame for a wider view.
- **Top camera** – switches to the top camera. Available only for the 4308.
- **Bottom camera** – switches to the bottom camera. Available only for the 4308.
- **Device name** – opens the **Device** tab for working with the object under examination.

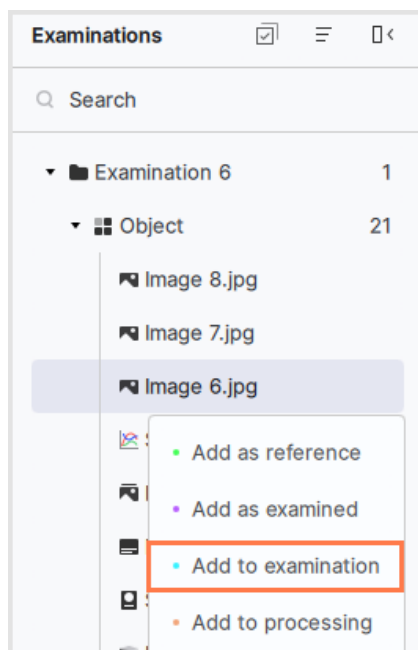
## 4.5 Examination

Use the **Examination** tab to inspect graphic and composite data, measure objects, add markers, compare faces, detect yellow dots, and generate reports.



In the **Examination** tab, the following elements are available:

## 1 RFS database



Contains a list of graphic and composite data related to the current examination object and provides quick access to them.

To add a file to the **Examination** tab, in the **RFS database** panel on the left side of the screen, double-click it with the left mouse button, or right-click it and select **Add to examination**.

The file will be added to the **Examination** tab and will become available for examination.

Use the mouse wheel to change the file scale. The current scale is displayed in the status bar.

---

## 2 Main workspace

Displays the selected file.

This window also contains the following controls:

- **Ruler** – allows you to measure the distance between objects or their elements on the examination object.
- **Zoom** – allows you to zoom in or out on the examination area of the object.
- **Fit to screen** – adjusts the file display size to fit the Main workspace.
- **Actual size** – returns the file to its original size.
- **Save** – saves the modified data to the database.

---

## 3 Toolbar

Contains the following tools:

-  Measurement
-  Measuring grid
-  Pipette
-  Marker
-  Reading MRZ
-  Reading Barcode
-  Face comparison
-  IPI Visualization
-  Yellow dots detection
-  Screenshot
-  Report
-  Live video

See below for a detailed description of each tool.

---

## 4 Tool control panel

Contains a different set of parameters for controlling the tools, depending on the tool selected on the **Toolbar**. See below for a detailed description.

---

### 4.5.1 Measurement

The **Measurement**  tool is used to measure the distance between two points, the length of an arbitrary path, the angle between objects, the rounding radius of graphical elements, and the image area.



The **Measurement** toolbar contains the following tools:

-  **Distance** – measures the distance between two points.
-  **Multi-distance** – measures the length of an arbitrary path between points in the examined file.
-  **Radius** – measures the rounding radius of graphical elements in the file.
-  **Elliptical radius** – measures the radius of an ellipse.
-  **Angle** – measures an angle on the image.
-  **Angle between lines** – measures the angle between lines.
-  **Square** – measures the square area on the image. The following area measurement modes are available:
  -  **Rectangle** – measures a rectangular area.
  -  **Polyline** – measures the area of an object consisting of several anchor points.
  -  **Magic wand** – measures an area by selecting pixels based on their tone and color. You can set a threshold to select a wider or narrower range of similar tones and colors.

## 4.5.2 Measuring Grid

The **Measuring grid**  tool is used for visual assessment of the size, distance, and relative position of objects.



The following parameters will appear on the **Tool control panel**:

- Grid Type:
  -  **Grid** — displays lines as a grid on the examined file.
  -  **Row** — displays horizontal lines on the examined file.
  -  **Column** — displays vertical lines on the examined file.
- **Row** — distance between horizontal lines.
- **Column** — distance between vertical lines.
- **Link levels** — measures row and column sizes proportionally to each other.
- **Save** — saves the changes and proceeds to the next grid.

### 4.5.3 Pipette

The **Pipette**  tool is used to measure the color characteristics of an image or video at any point or in any examination area.



The following tool parameters are available on the **Tool control panel**:

-  One point (**Pixel**)
-  Five neighboring points (**Cross**)
-  Nine neighboring points (**Array**)
-  The current examination area (**Rectangle**)

## 4.5.4 Marker

The **Marker**  tool is used to highlight the required area in the examined file.



The following tool parameters are available on the **Tool control panel**:

- **Marker type:**
  -  **Point** — highlights the examination area as a single point.
  -  **Rectangle** — highlights the examination area as a rectangular area.
  -  **Ellipse** — highlights the examination area as an elliptical area.
  -  **Text** — highlights the examination area with a text label.
  -  **Line** — highlights the examination area with a straight line.
  -  **Arrow** — highlights the examination area with a line and an arrow indicating direction.
  -  **Curve** — highlights the examination area with a freeform curved line.
- **Line type:**
  - **Solid** — the examination area highlight is displayed as a solid line.
  - **Dashed** — the examination area highlight is displayed as a dashed line.
- **Line color** — selects the line color from the drop-down list.
- **Fill color** — selects the fill color from the drop-down list for the Point, Rectangle, Ellipse, and Text highlight types.

- **Stroke width** — sets the line thickness in the range from 2 to 10 px.
- **Opacity** — sets the opacity level of the line.
- **Text** — adds a text label to the marker. After changing the text, click Apply to save and display the text on the examined file.

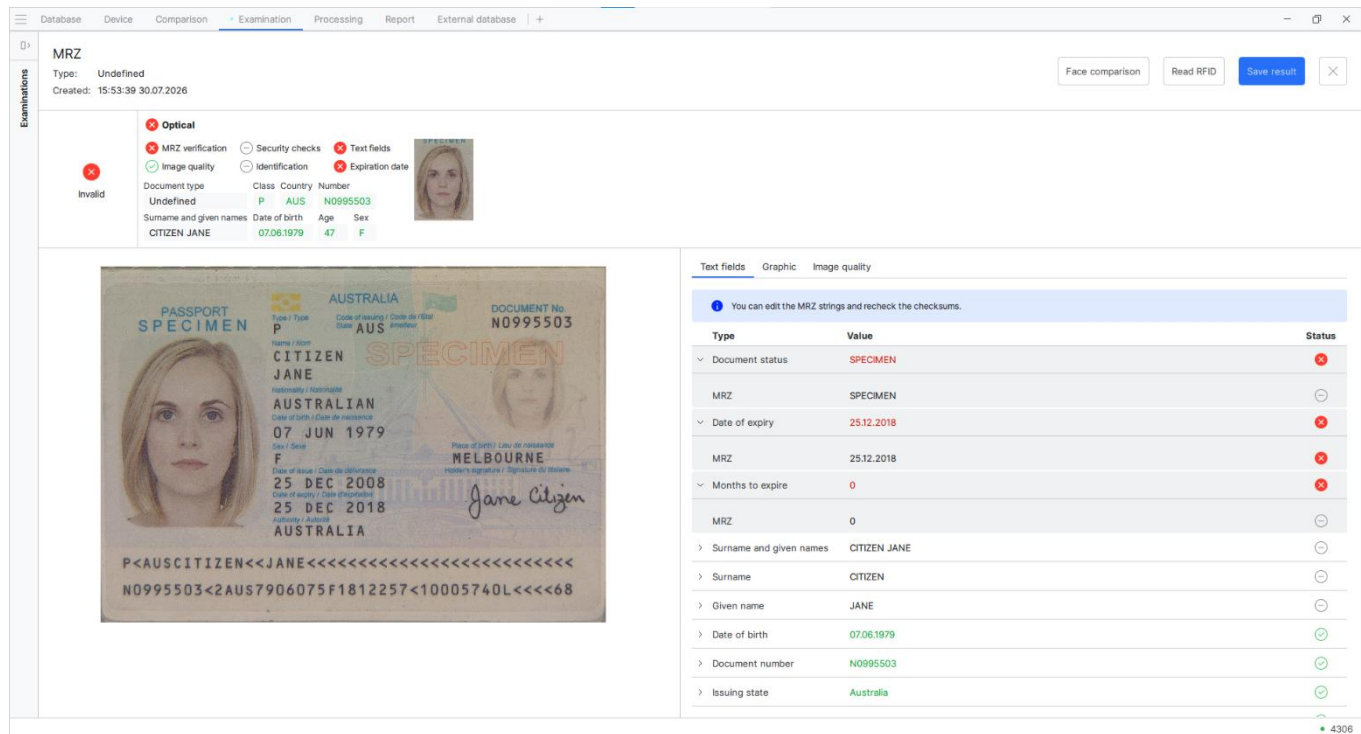
Examples of marker highlighting:



**Panel of current selection types.** To add a comment or delete a selection type, hover the cursor over the row with the type name and click the corresponding icon.

## 4.5.5 Reading MRZ

The **Reading MRZ**  tool is used to check the machine-readable zone of the file under examination. The MRZ reading result will be displayed in a separate window.



**MRZ**  
Type: Undefined  
Created: 15:53:39 30.07.2026

Face comparison Read RFID Save result

**Optical**  
☒ MRZ verification ☐ Security checks ☒ Text fields  
☒ Image quality ☐ Identification ☒ Expiration date

Document type: Undefined Class: P Country: AUS Number: N0995503  
 Surname and given names: CITIZEN JANE Date of birth: 07.06.1979 Age: 47 Sex: F

**Text fields** Graphic Image quality

You can edit the MRZ strings and recheck the checksums.

| Type                    | Value        | Status |
|-------------------------|--------------|--------|
| Document status         | SPECIMEN     | ✗      |
| MRZ                     | SPECIMEN     | ⊖      |
| Date of expiry          | 25.12.2018   | ✗      |
| MRZ                     | 25.12.2018   | ✗      |
| Months to expire        | 0            | ✗      |
| MRZ                     | 0            | ⊖      |
| Surname and given names | CITIZEN JANE | ⊖      |
| Surname                 | CITIZEN      | ⊖      |
| Given name              | JANE         | ⊖      |
| Date of birth           | 07.06.1979   | ✓      |
| Document number         | N0995503     | ✓      |
| Issuing state           | Australia    | ✓      |

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The read data includes the following information:

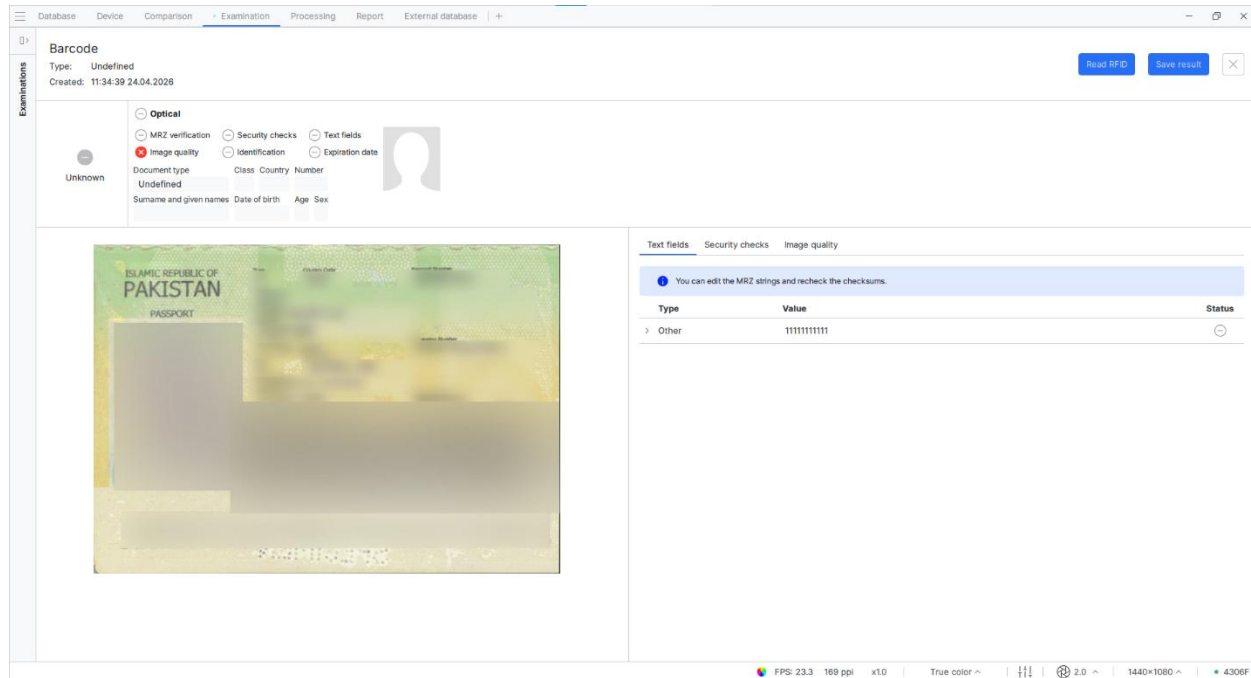
- Document type
- Reading time
- Optical verification data
- Display of the file under examination
- Text data
- Graphic data
- Image quality

To save the examination data, click **Save data**.

To close the examination without saving, click the **x** in the upper-right corner.

## 4.5.6 Reading Barcode

The **Barcode**  tool is used to examine a file that contains a barcode. The barcode reading result will be displayed in a separate window.



The read data includes the following information:

- Document type
- Reading time
- Optical verification data
- Display of the file under examination
- Text data
- Graphic data
- Image quality

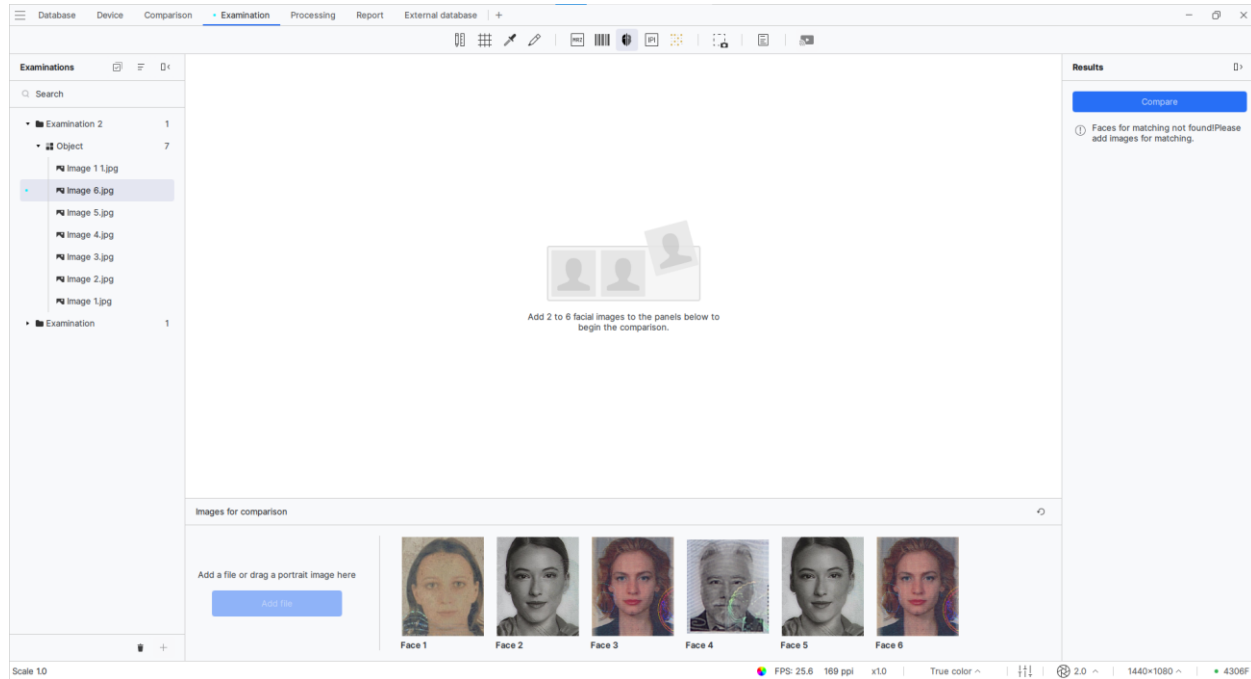
To save the examination data, click **Save data**.

To close the examination without saving, click the **x** in the upper-right corner.

## 4.5.7 Face Comparison

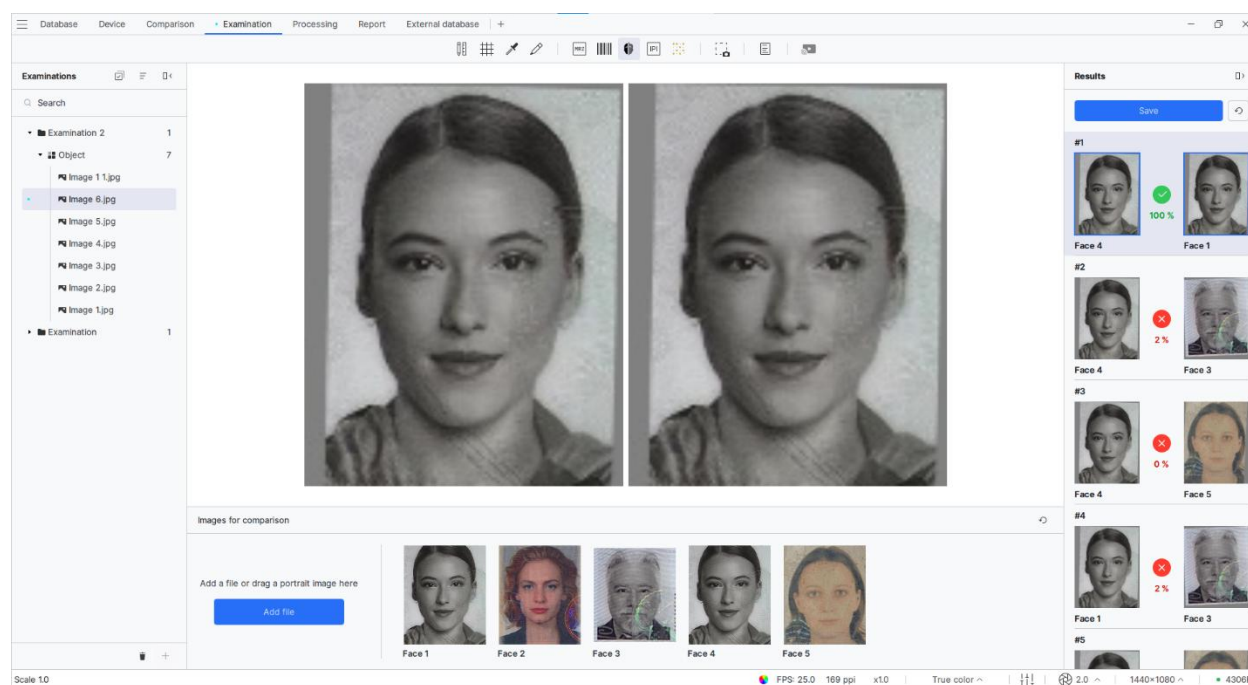
The **Face comparison**  is used to compare faces in graphic data.

**Note:** The feature works only if the **Face SDK service URL** is set in **Settings → Services**.



Drag and drop files, or select them from your computer or web camera. You can add up to 6 images. Then click **Compare**.

The file comparison result is displayed in the panel on the right. To open a specific comparison result in the **Main workspace**, select it in the panel on the right.

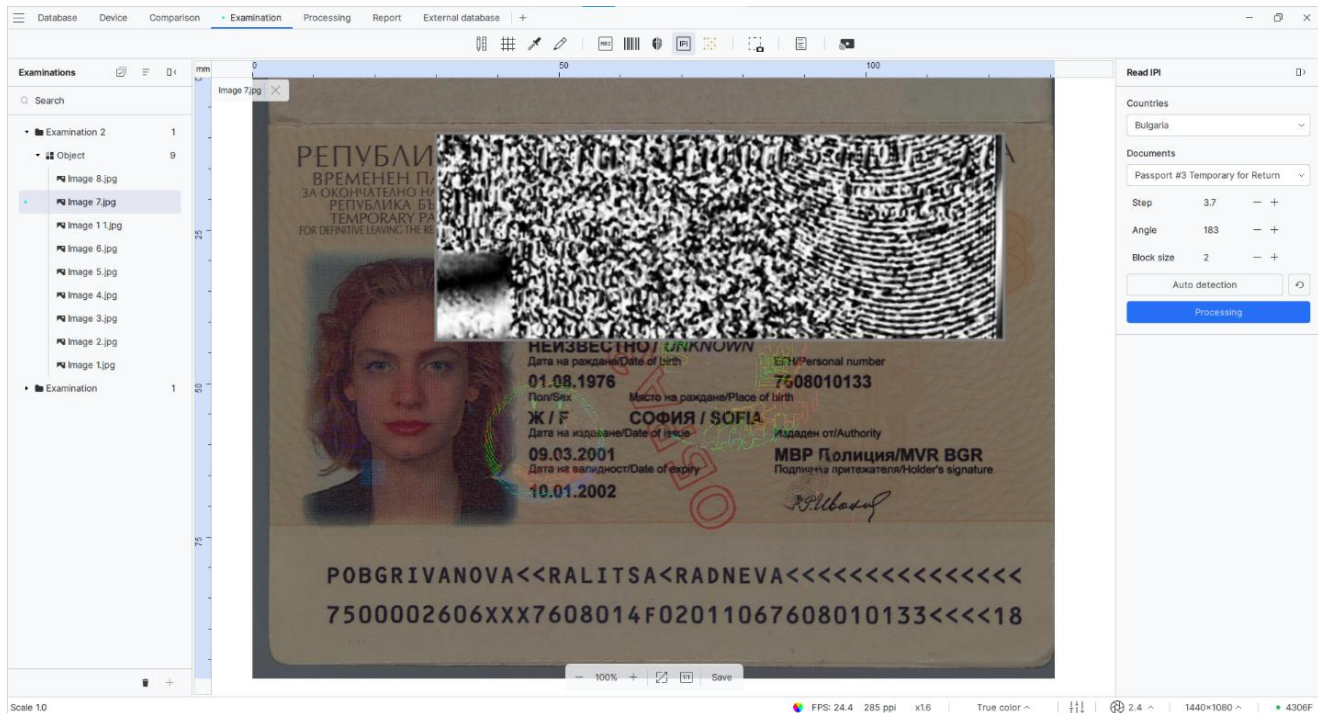


To save the comparison results, click **Save**.

To reset the comparison results, click the **Reset** icon.

### 4.5.8 IPI Visualization

The **IPI**  tool (Invisible Personal Information) is used to visualize and examine invisible personal information and hidden images contained in graphical document security elements and created using various technologies.



The following parameters are available on the **Tool control panel**:

- **Countries** – a list of available countries that can be selected from the drop-down list.
- **Documents** – a list of available documents that can be selected from the drop-down list.
- **Visualization parameters**:
  - **Step**
  - **Angle**
  - **Block size**
- **Auto detection** – this button starts automated selection of visualization parameters based on the contents of the selected area. As a result, hidden personal data will become visible in the selected area.
- **Reset** – to reset the hidden data visualization, click the  icon.
- **Processing** – the selected area processing.

To use this feature, select the area of the image that contains the IPI, choose the country and document type in the toolbar on the right, and click **Processing**. You can fine-tune the step, angle, and block size manually, or use the **Auto detection** option to set them automatically.

You can find more details about it in our glossary:

<https://regulaforensics.com/glossary/documents/latent-scrambled-image-invisible-personal-information/>

### 4.5.9 Yellow Dots Detection

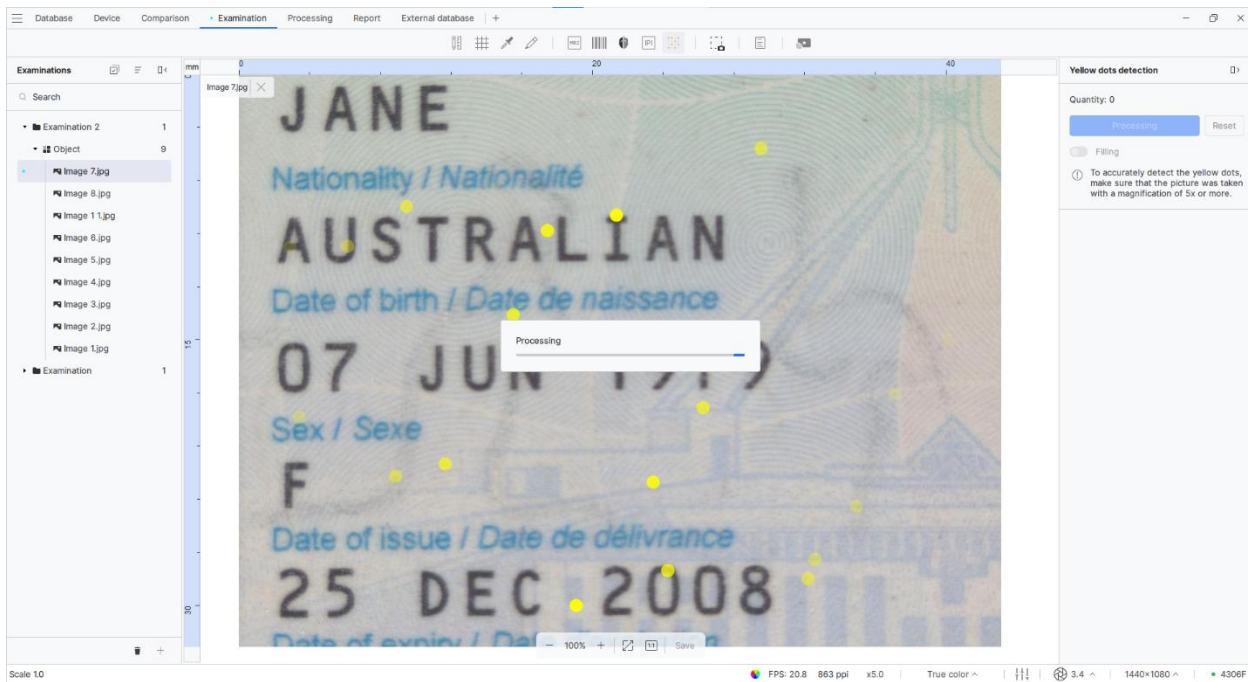
The **Yellow dots detection**  tool is used to check the examined file for the presence of yellow dots, which may be used as technological marks of a printing device.

This helps identify hidden printing features and obtain additional information about the examined file.



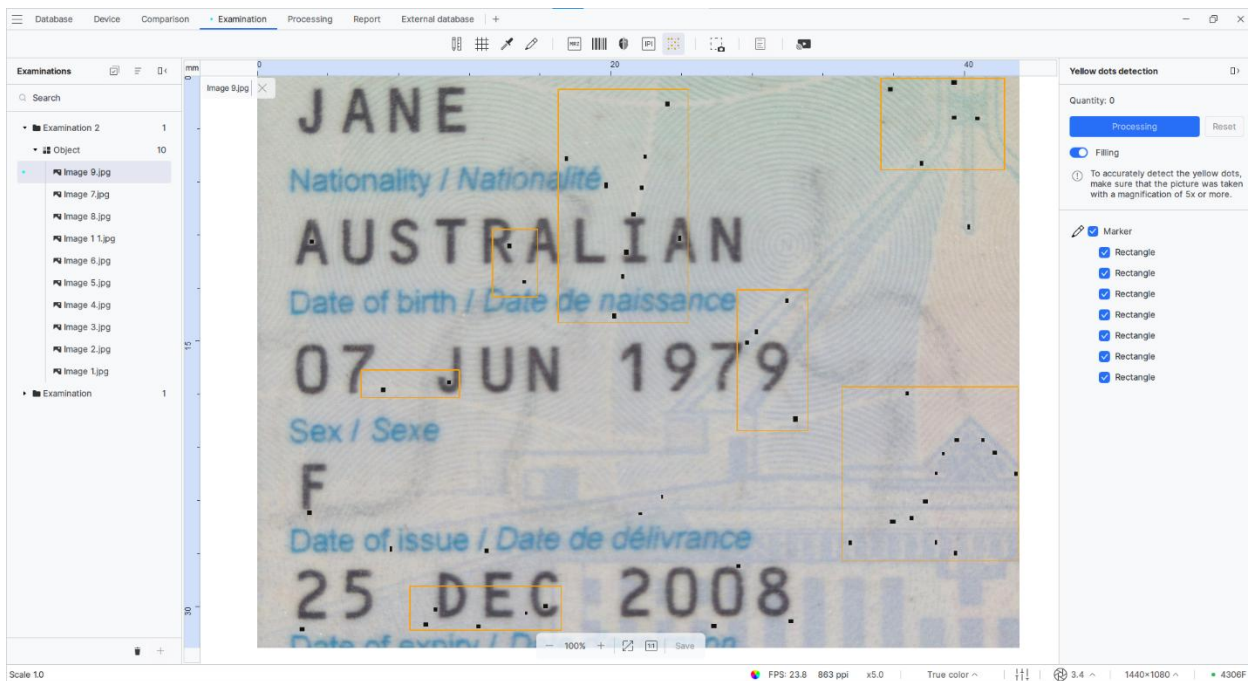
To get the number of yellow dots in the selected image fragment, click the **Yellow dots detection** icon. Select the fragment and click **Processing**.

As a result, the program will perform the analysis and display the number of yellow dots found.



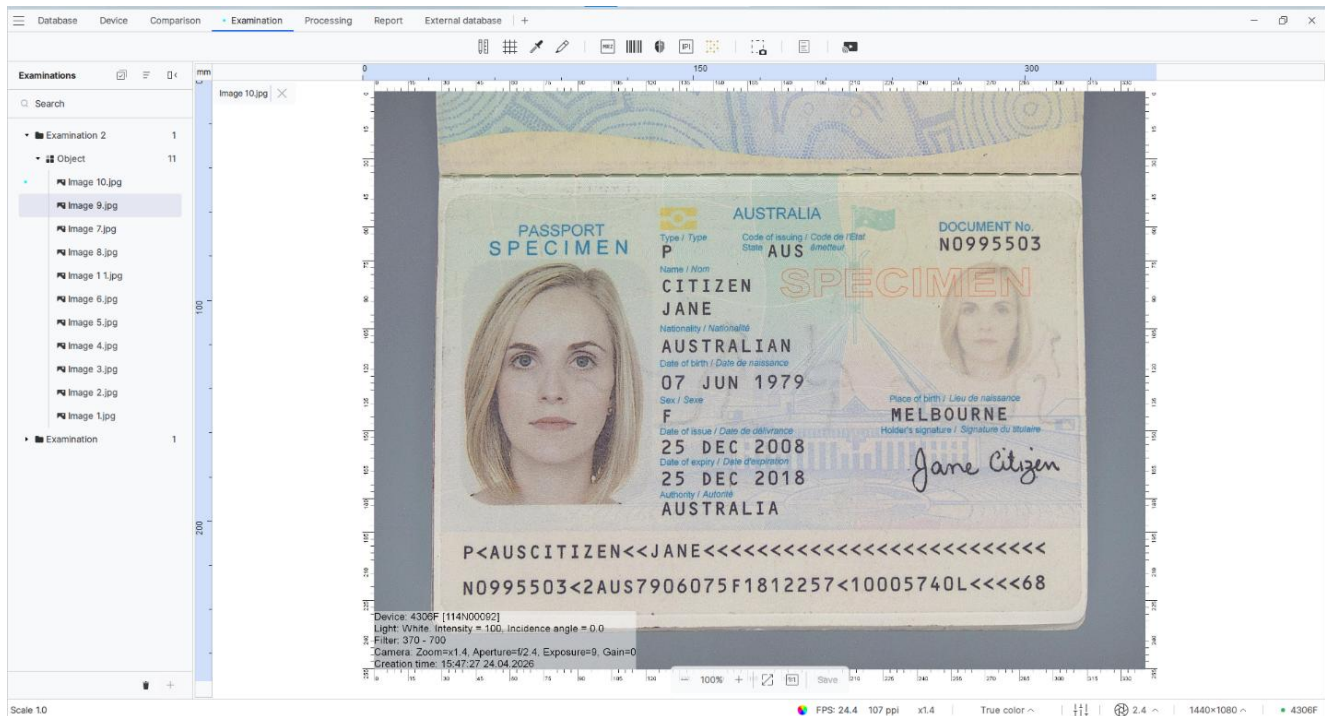
After detecting the yellow dots, click **Filling** to highlight the detected dots in black on the examined file.

This allows you to clearly see their location in the image.



### 4.5.10 Screenshot

The **Screenshot** tool is used to capture and save a screenshot of the current examination to the database and automatically include it in the examination.



**Note.** The data saved with the image, such as the ruler position, information display location, and the displayed information itself, is configured in **Settings → Database**.

### 4.5.11 Report

The **Report**  tool is used to create a report for the current examination.

To generate a report, click . The completed report is available on the **Report** tab, where all reports are stored.

For more information on working with reports, see the **Report** section of this guide.

#### 4.5.12 Live video

The **Live video**  tool is used when an external RFS device is connected. The real-time video feed from the device's camera can be added to the examination.



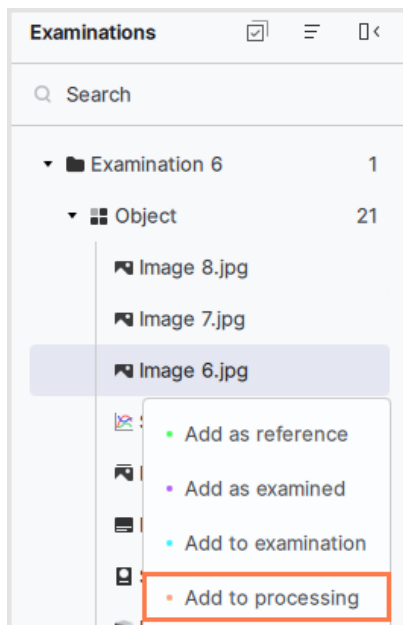
## 4.6 Processing

To modify the data and its elements, go to the **Processing** tab.



The **Processing** tab consists of the following elements:

### 1 RFS database



Contains a list of graphic and composite data related to the current examination object and provides quick access to them.

To add a file to the **Processing** tab, in the **RFS database** panel on the left side of the screen, double-click it with the left mouse button, or right-click it and select **Add to processing**.

The file will be added to the **Processing** tab and will become available for modification.

Use the mouse wheel to change the file scale. The current scale is displayed in the status bar.

---

## 2 Main workspace

Displays the selected file.

This window also contains the following controls:

- **Ruler** – allows you to measure the distance between objects or their elements on the examination object.
- **Zoom** – allows you to zoom in or out on the examination area of the object.
- **Fit to screen** – adjusts the file display size to fit the Main workspace.
- **Actual size** – returns the file to its original size.
- **Save** – saves the modified data to the database.

---

## 3 Toolbar

Contains the following tools:

-  Transformation
-  Adjustment
-  Correction
-  Embossing
-  Tracing
-  Pseudocolor
-  Report
-  Live video

See below for a detailed description of each tool.

---

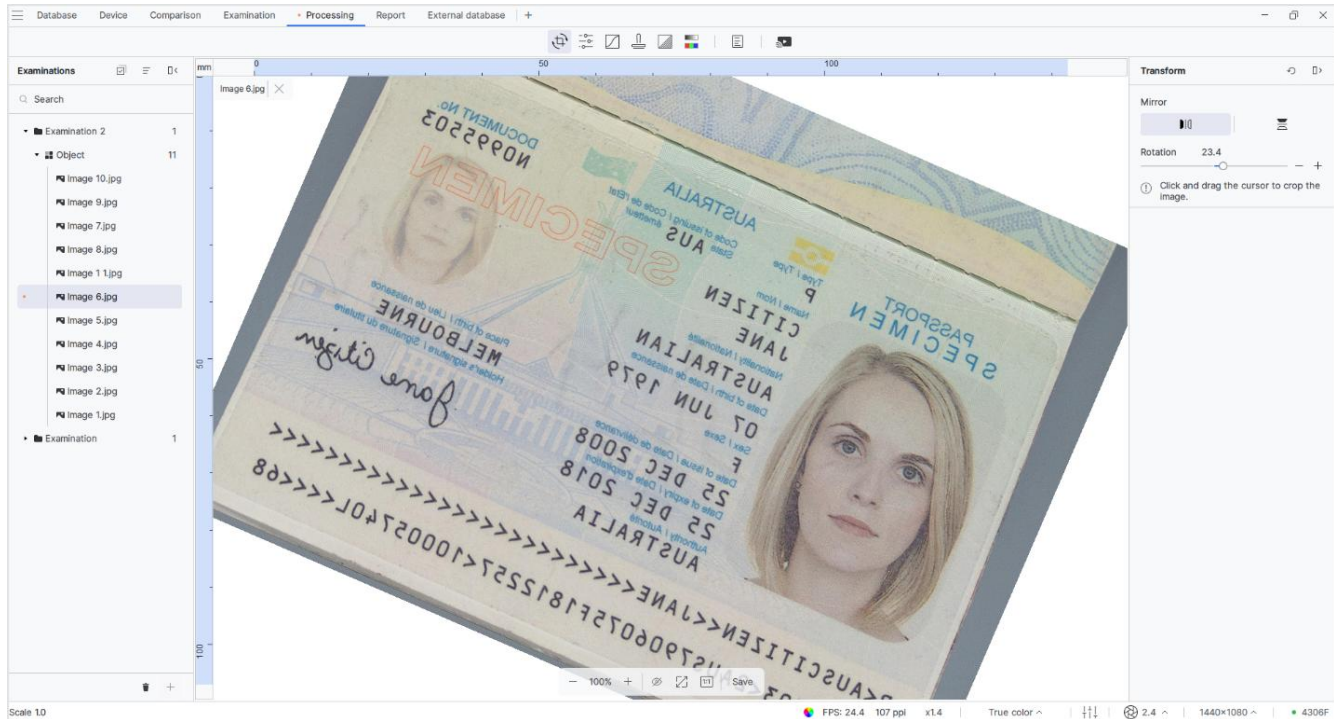
## 4 Tool control panel

Contains a different set of parameters for controlling the tools, depending on the tool selected on the **Toolbar**. See below for a detailed description.

---

### 4.6.1 Transformation

The **Transformation**  tool is used to change how data is displayed. For example, using the tool parameters, you can crop an arbitrary rectangular area, or fragment, from the source image, mirror the image, and rotate the image by any angle.



The **Transformation** tool contains the following parameters:

- **Mirror:**
  -  – vertical mirroring.
  -  – horizontal mirroring.
- **Rotation** – rotates the file around its axis by the specified angle.
-  **Reset** – cancels all changes.

## 4.6.2 Adjustment

The **Adjustment** tool is used to invert the color of all pixels in the source image.



The **Adjustment** tool contains the following parameters:

- **Brightness** — changes the brightness of the displayed data within the range from -127 to 127.
- **Contrast** — changes the contrast of the displayed data within the range from -127 to 127.
- **Gamma** — changes the gamma of the displayed data within the range from 0.01 to 8.88.
- **Hue** — changes the hue of the displayed data within the range from -180 to 180.
- **Saturation** — changes the saturation of the displayed data within the range from -100 to 100.
- **Luminosity** — changes the lightness of the displayed data within the range from -100 to 100.
- **Red** — changes the red signal component level of the source image within the range from 0.1 to 8.00.
- **Green** — changes the green signal component level of the source image within the range from 0.1 to 8.00.
- **Blue** — changes the blue signal component level of the source image within the range from 0.1 to 8.00.
- **Sharpness** — increases image clarity by enhancing edges and fine details.
- **Smoothing** — reduces abrupt transitions and noise.
- **Filter** — simulates applying a specific optical light filter to the image. Available filter modes:

-  **Cut-off filter** — passes radiation only within a specified range and blocks the remaining parts of the spectrum.
-  **Band-pass filter** — passes a narrow wavelength range and suppresses radiation outside that range.
-  **Halftone** — changes transparency from 0 to 1.00.
- **Wavelength** — adjusts the transmission wavelength of the optical light filter within the range of 380–705 nm.
- **Inversion** — replaces the color or brightness value with its opposite.

### 4.6.3 Correction

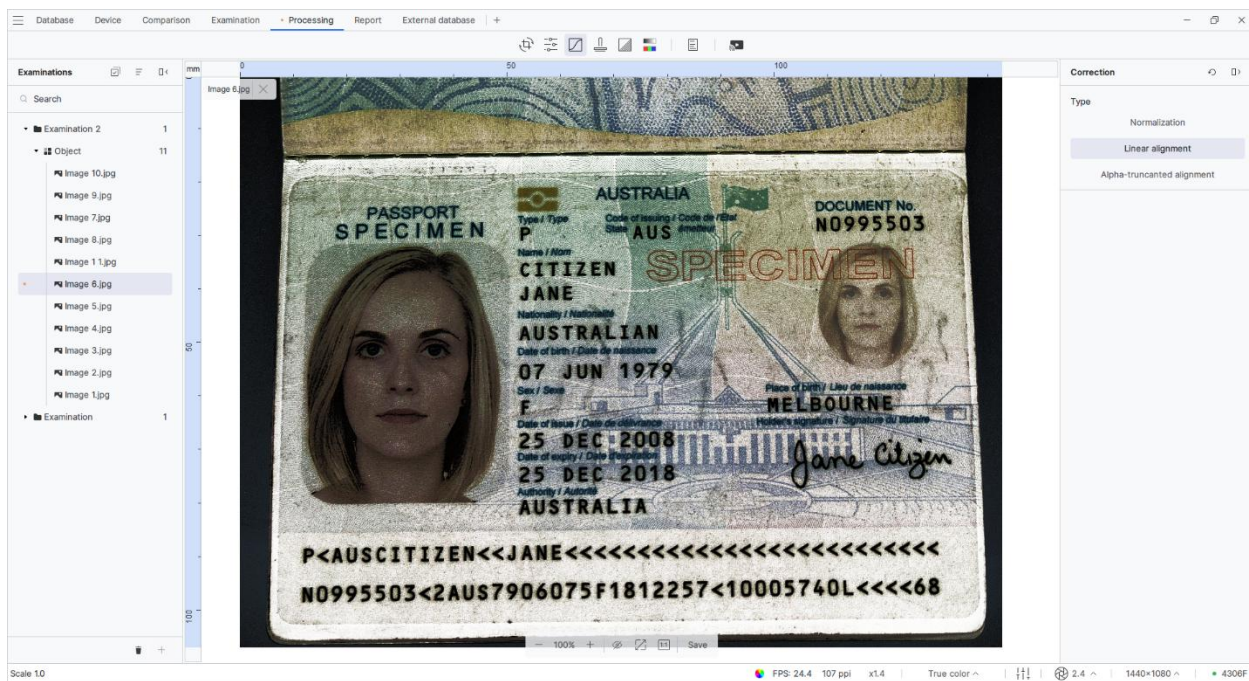
The **Correction**  tool is used to correct the signal of the source image.

The following correction types can be used for data processing:

- **Normalization** — adjusts the signal level to a standard value range to improve display uniformity and make further processing more convenient.



- **Linear alignment** — corrects the signal using a linear algorithm to equalize its distribution across the entire value range.



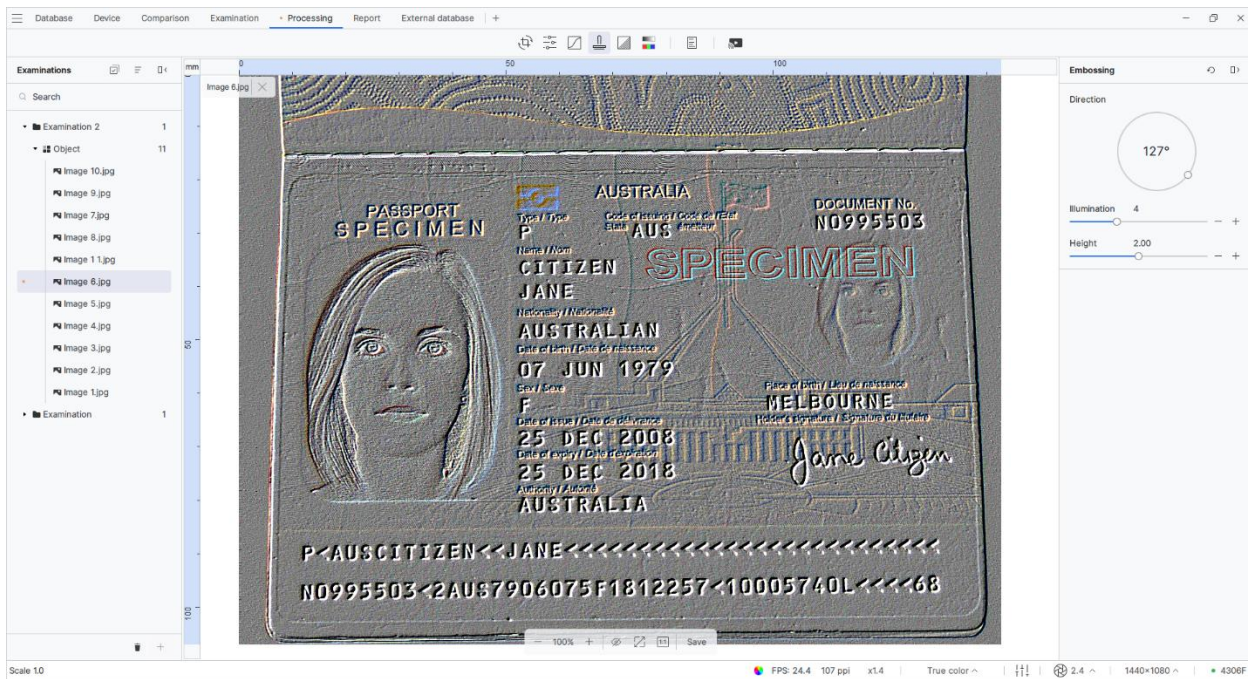
- **Alpha-truncated alignment** — corrects the signal by limiting the influence of extreme distribution values to reduce the impact of outliers and improve result stability.

When the **Alpha-truncated alignment** correction type is selected, the signal correction value can be changed within the range from 1 to 45.



## 4.6.4 Embossing

The **Embossing**  tool is used to examine the relief of an image.

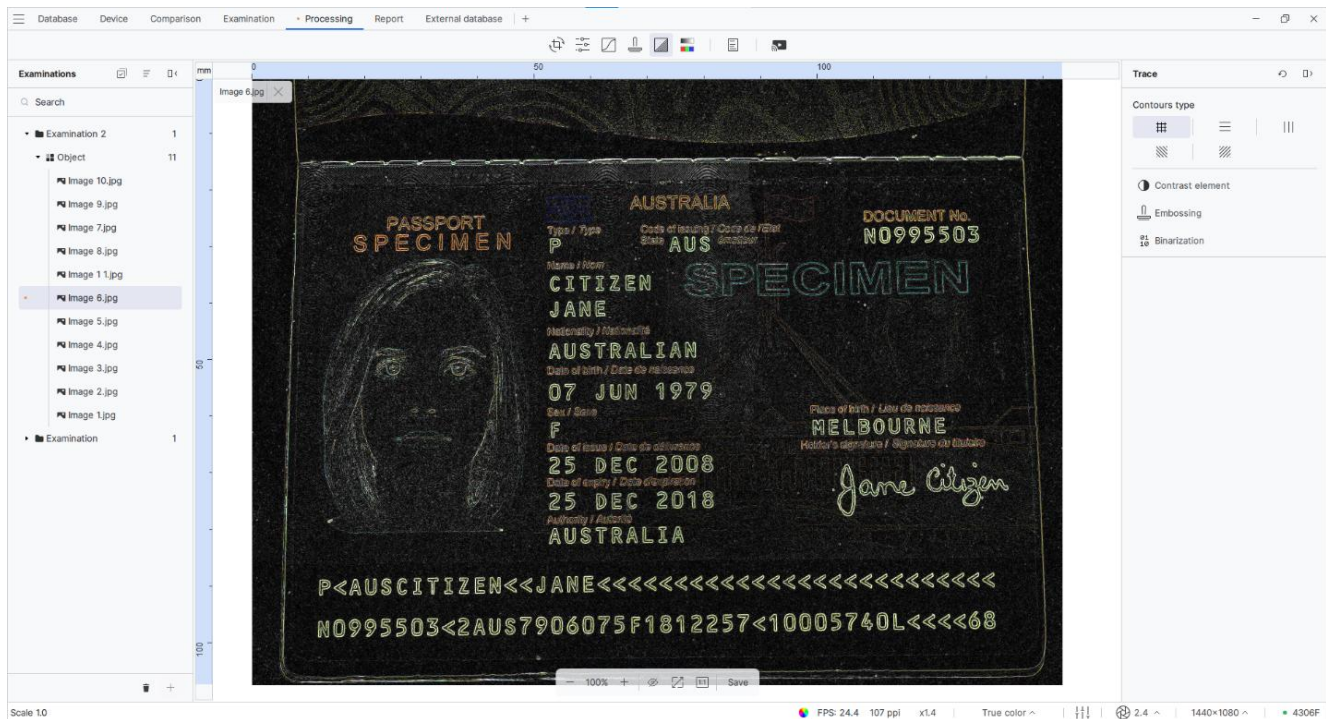


The **Embossing** tool parameters:

- **Direction** — adjusts the lighting direction from 0° to 360°.
- **Illumination** — adjusts the lighting brightness from 1 to 10 units.
- **Height** — adjusts the relief height of file elements from 1.00 to 3.00 mm.

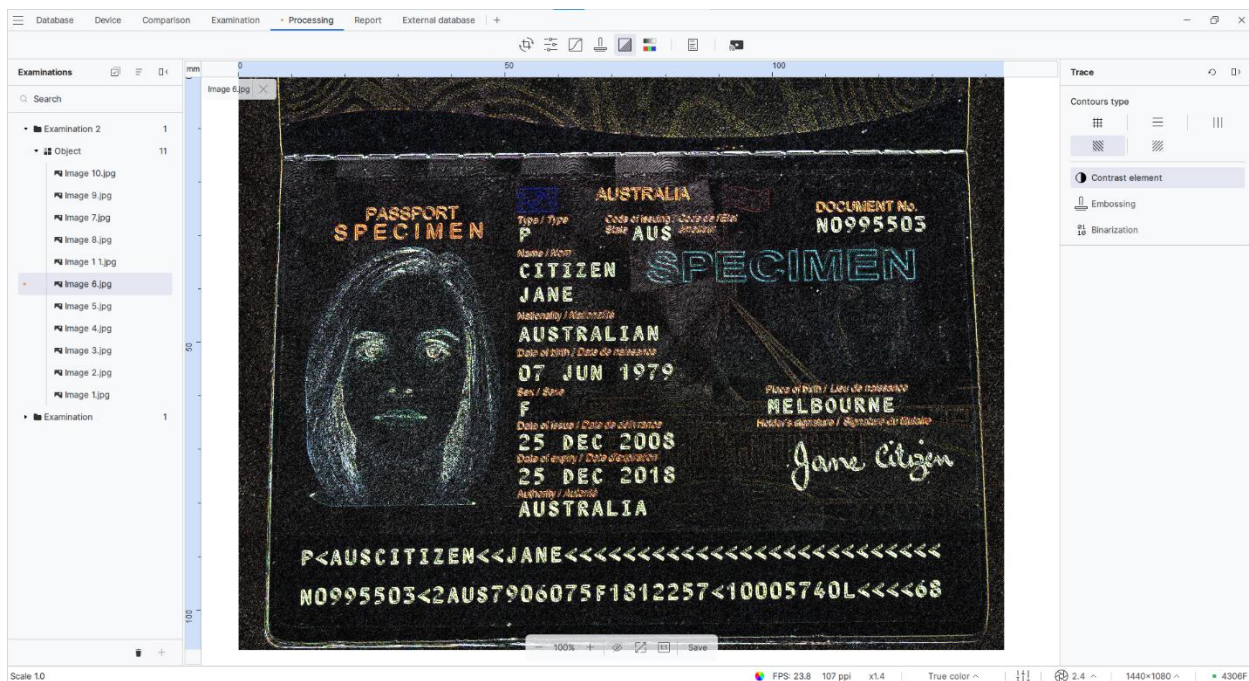
## 4.6.5 Tracing

The **Tracing**  tool is used to highlight the contours of source data elements.

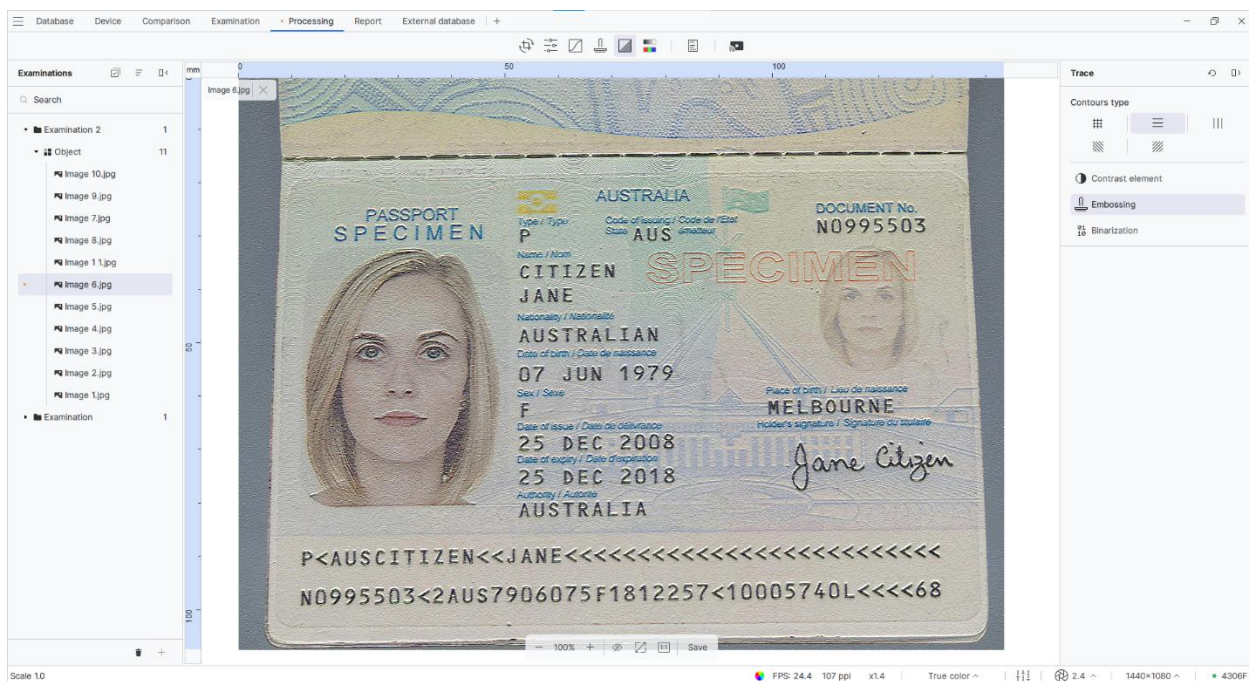


The **Tracing** tool parameters:

- **Contour types:**
  -  **All contour elements** — displays and processes all detected contour elements, regardless of their direction.
  -  **Horizontal contour elements** — displays and processes horizontally oriented contour elements.
  -  **Vertical contour elements** — displays and processes vertically oriented contour elements.
  -  **Slanted contour elements** — displays and processes contour elements angled relative to the horizontal and vertical axes.
- **Contrast element** — highlights a data element by brightness relative to the surrounding background or adjacent areas, making it easier to detect and trace its boundaries.



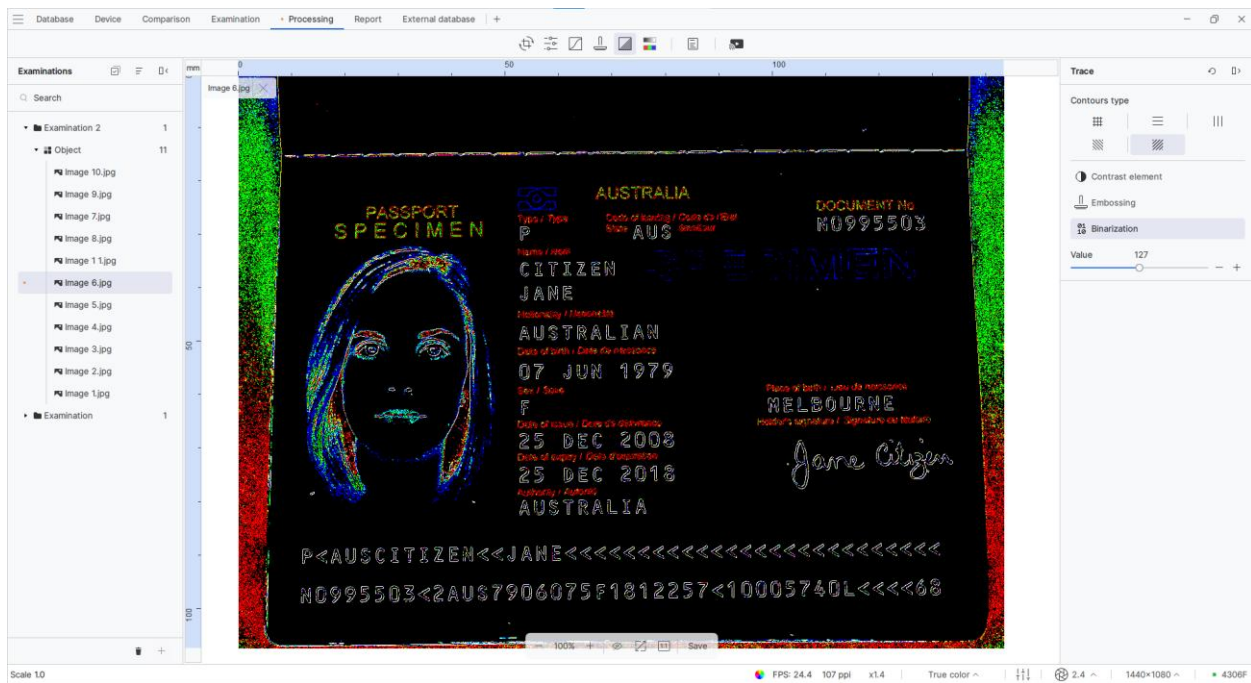
- **Embossing** — enhances the relief of data elements by emphasizing light-and-shadow transitions typical of recessed or raised surface areas.



- **Binarization** — converts the image into a two-level view, where pixels are divided into two classes, usually background and object, based on a specified or automatically detected brightness threshold.

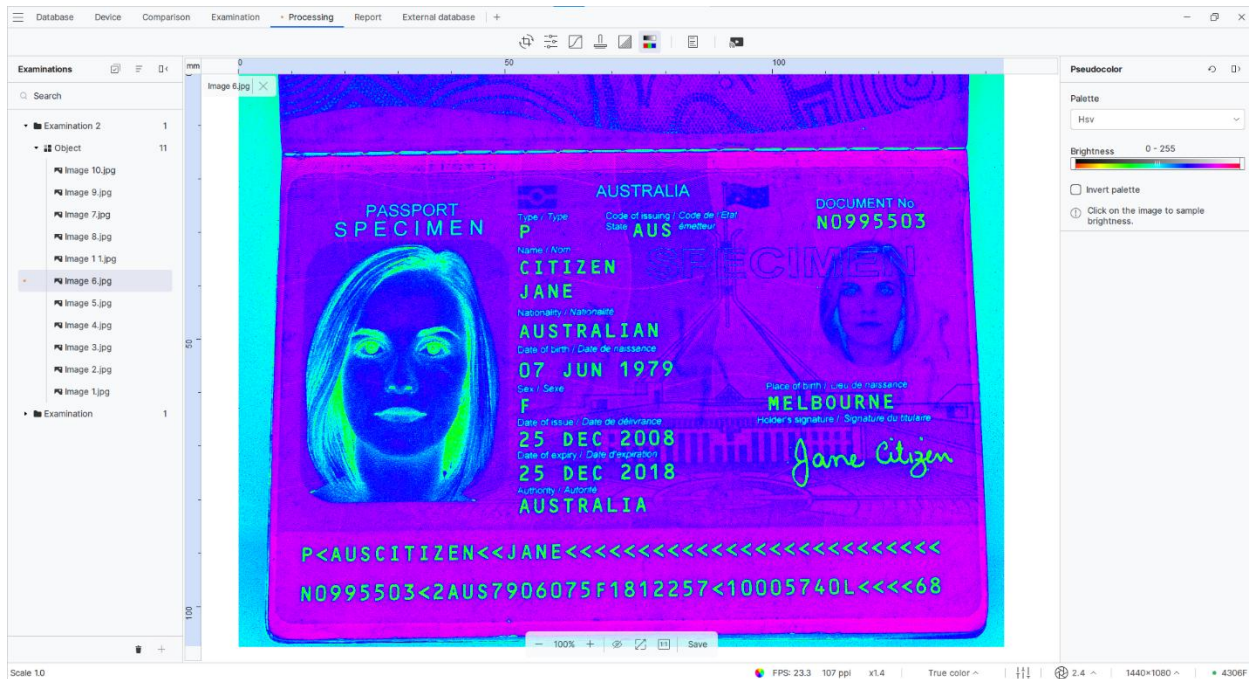
The main parameter for image conversion in the **Binarization** mode is the threshold: a value that serves as the criterion for checking the intensity of an image point. Contour highlighting of

elements in the original image in **Binarization** mode is possible within the range of values from 0 to 255.



## 4.6.6 Pseudocolor

The **Pseudocolor** tool is used to examine an image from the database or live video by replacing grayscale shades with colors from the selected palette.



The **Pseudocolor** tool parameters:

- **Palette** – selects a color scheme from the drop-down list to display data brightness gradations in false colors.
- **Brightness** – adjusts the overall brightness level of the data when displayed using the selected pseudocolor palette.
- **Invert palette** – reverses the order of colors in the selected palette by selecting or clearing the checkbox.

## 4.6.7 Report

The **Report**  tool is used to create a report for the current processing.

To generate a report, click . The completed report is available on the **Report** tab, where all reports are stored.

For more information on working with reports, see the **Report** section of this guide.

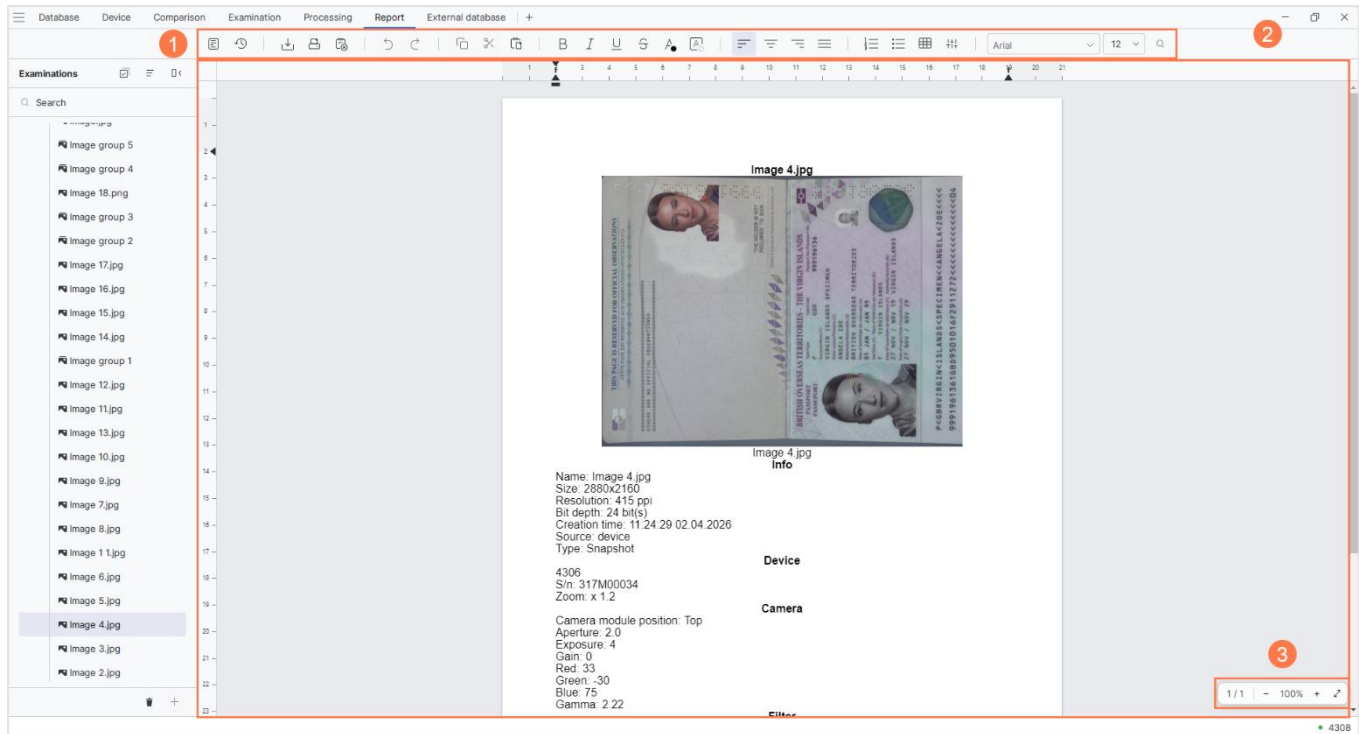
## 4.6.8 Live video

The **Live video**  tool is used when an external RFS device is connected. The real-time video feed from the device's camera can be added to the processing.



## 4.7 Report

On this tab, all the saved reports are collected, including visual and textual data. You can edit your reports by using the standard text editor tools on the horizontal panel.



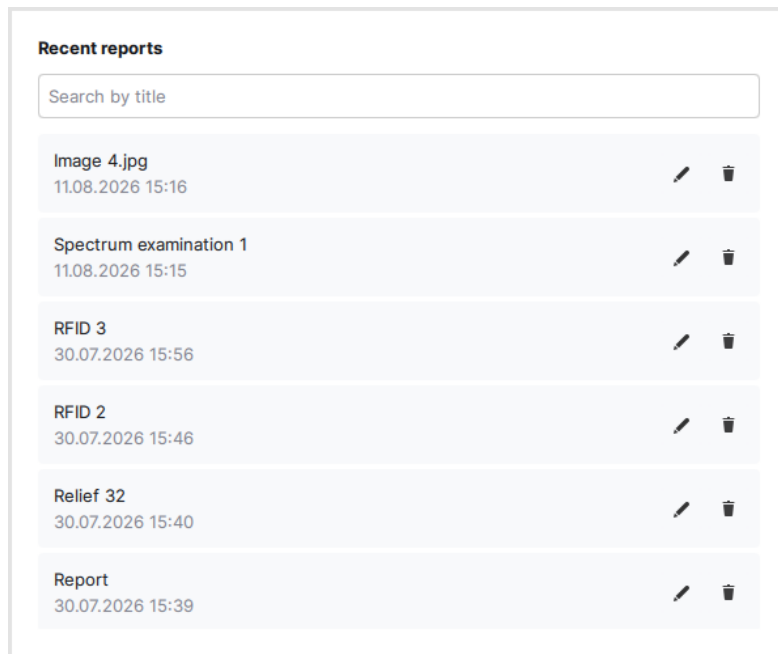
The **Report** tab consists of the following elements:

1. Toolbar and settings
2. Text editor
3. Zoom controls

### 4.7.1 Toolbar and settings

The **Toolbar and settings** panel contains:

-  **New document** – click to start a new report.
-  **Recent reports** – contains a history of recent reports. Click this button to open the list of previous reports.



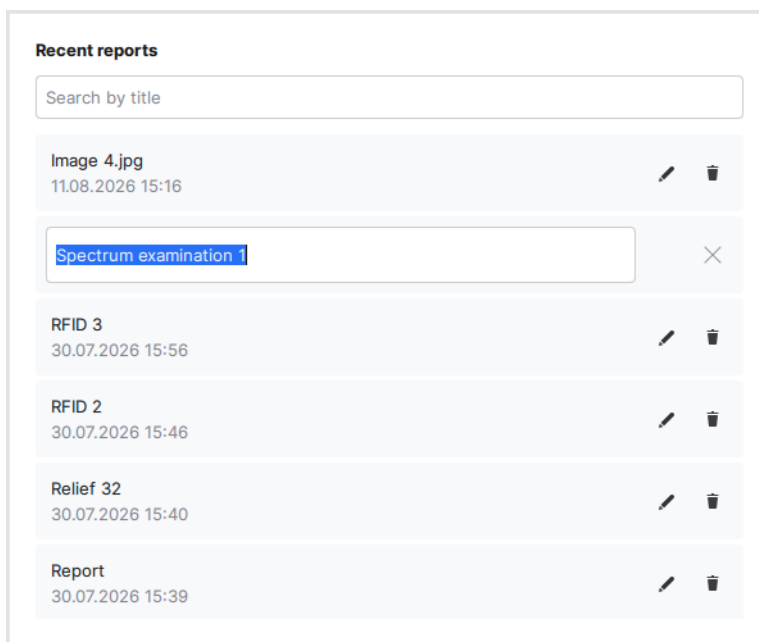
In the opened **Recent reports** pop-up window, you can:

- **Find a report by title**

In the **Search by title** field, enter the name of the report you are looking for. All matching reports will be sorted by the date and time they were edited, from most recent to oldest.

- **Edit the report title**

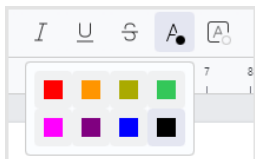
To do this, click the  button. Enter a new report title, then click anywhere in the window to save the changes.



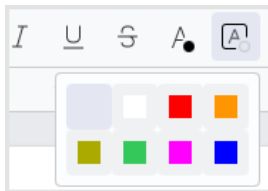
- **Delete a report**

To delete a report, click the  button. Please note that deleted reports cannot be recovered.

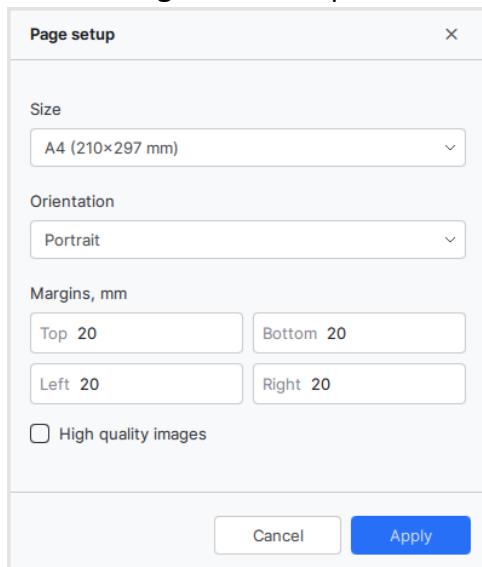
-  **Save as** – click to save the report to your local computer.
-  **Print (Ctrl + P)** – click to print the report.
-  **Clear** – click to delete all data in the report. Please note that deleted data cannot be recovered.
-  **Undo (Ctrl + Z)** – click to undo the last action performed.
-  **Redo (Ctrl + Y)** – click to redo the last undone action.
-  **Copy (Ctrl + C)** – click to copy the selected data to the clipboard.
-  **Cut (Ctrl + X)** – click to cut the selected data from the report.
-  **Paste (Ctrl + V)** – click to paste the copied data.
-  **Bold (Ctrl + B)** – click to apply bold formatting to the selected text.
-  **Italic (Ctrl + I)** – click to italicize the selected text.
-  **Underline (Ctrl + U)** – click to underline the selected text.
-  **Strikeout (Ctrl + 5)** – click to apply strikethrough formatting to the selected text.
-  **Text color** – open the color list and select the desired color.



-  **Text background color** – open the color list and select the desired background color.



-  **Align left (Ctrl + L)** – click to align the text with the left margin of the page.
-  **Center (Ctrl + E)** – click to center the text on the page.
-  **Align right (Ctrl + Shift + R)** – click to align the text with the right margin of the page.
-  **Justify (Ctrl + J)** – click to justify the text across the page.
-  **Numbered list** – click to create a numbered list.
-  **Bulleted list** – click to create a bulleted list.
-  **Table** – click to insert a table.
-  **Settings** – click to open the settings window.



The 'Page setup' dialog box contains the following settings:

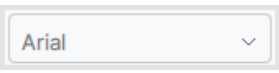
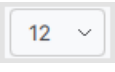
- Size:** A4 (210×297 mm)
- Orientation:** Portrait
- Margins, mm:**
  - Top: 20
  - Bottom: 20
  - Left: 20
  - Right: 20
- ☐ High quality images
- Buttons:** Cancel, Apply

In the settings window, you can change the following page parameters:

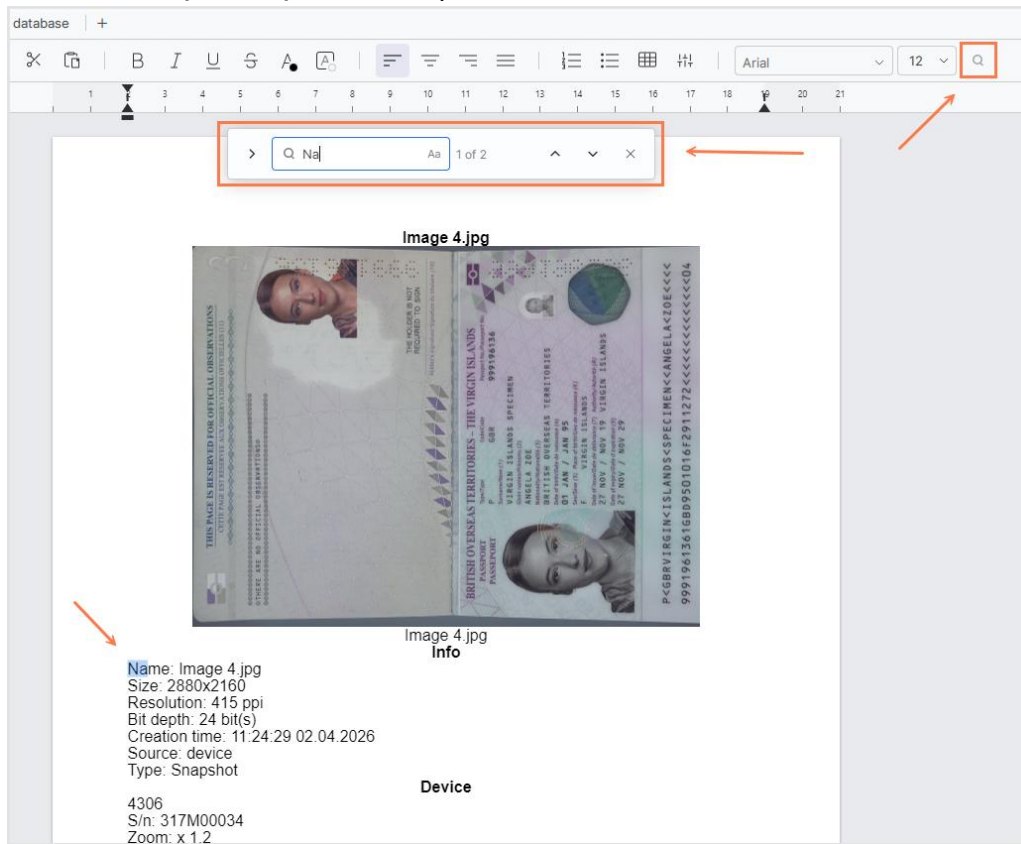
- **Size** – select a page size from the drop-down list.
- **Orientation** – select portrait or landscape page orientation from the drop-down list.
- **Margins, mm** – enter the margin values.
- **High quality images** – select the checkbox to enable high image quality.

Click **Apply** to save the changes.

Click **Cancel** to discard the changes and restore the default settings.

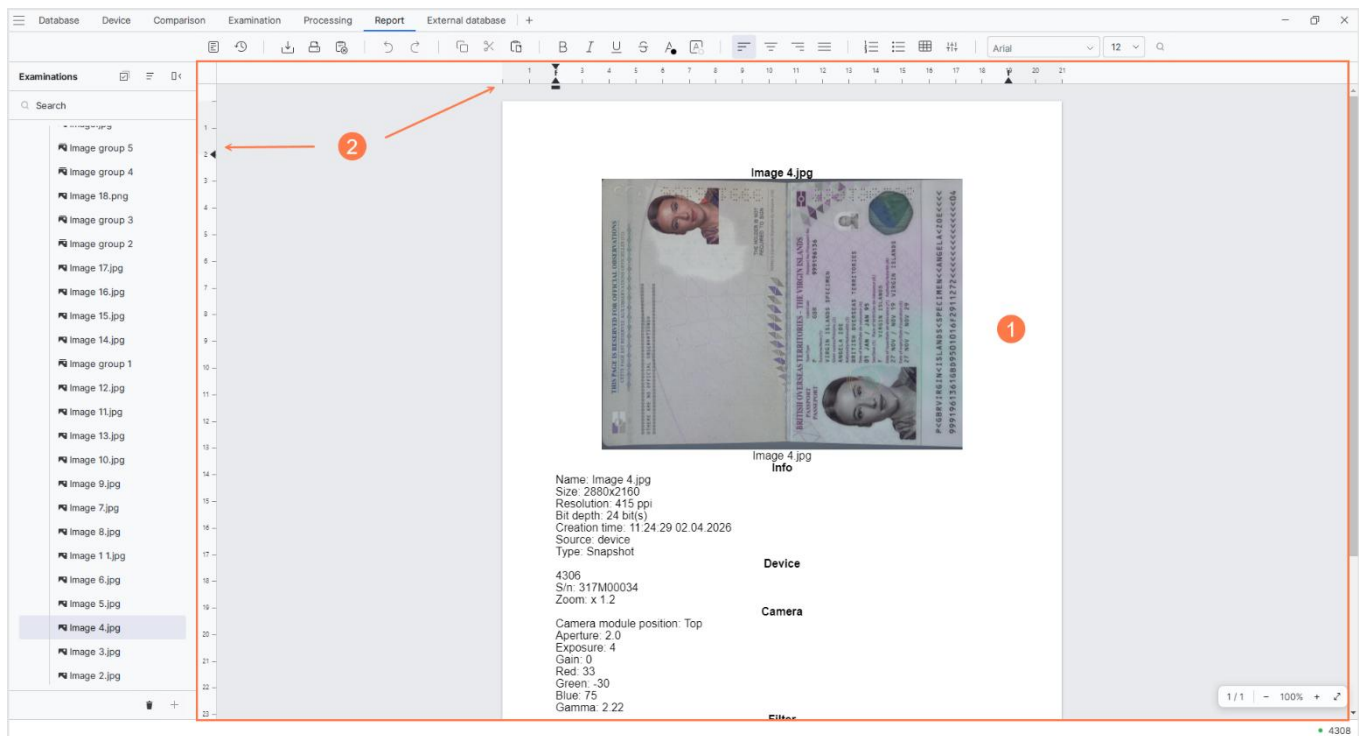
-  **Font** – click to select the text font from the drop-down list.
-  **Font size** – click to select the text font size from the drop-down list.

-  **Search (Ctrl + F)** – click to open the search window.



Enter the text search parameters. Found matches will be highlighted.

## 4.7.2 Text Editor



**Text editor** window contains the following elements:

- |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>1 Report</b> | The main workspace where report pages are displayed. Here, you can work with the report's textual and graphical data.                                                                                                                                                                                                                                                                                                                                                    |
| <b>2 Rulers</b> | <ul style="list-style-type: none"> <li>• <b>Horizontal ruler</b> – used to adjust paragraph indents, tab stops, and the width of the workspace. To change an indent, drag the corresponding marker on the ruler to the desired position.</li> <li>• <b>Vertical ruler</b> – used to control the vertical position of text on the page and adjust the top and bottom margins. To change a margin size, drag its boundary on the ruler to the desired position.</li> </ul> |

## Hyperlink

In the **Text Editor** window, you can work with hyperlinks. Hyperlinks can be edited, removed, cut, copied, and pasted.

After inserting a hyperlink into the document, you can perform the following actions:

- **Edit**
  1. Right-click the hyperlink and select **Edit link**.
  2. In the window that opens, edit the hyperlink in the **Address** field and click **Save**.
- **Delete**
  1. Right-click the hyperlink and select **Remove link**.  
or
  1. Right-click the hyperlink and select **Edit link**.
  2. In the window that opens, click **Remove link**.
- **Open**
  1. Hold down **Ctrl** on the keyboard and left-click the hyperlink. The hyperlink will open in your browser.

## Headers and Footers

You can add text, an image, and a page number to headers and footers.

To add a **Header**:

1. Double-click the top of the page with the left mouse button.
2. In the header area that opens, you can insert an image and text. To add page numbering, click **Page number**.
3. Click **Done** to save the changes.

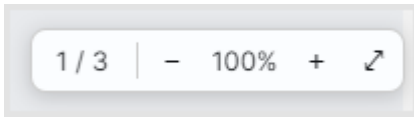
To add a **Footer**:

1. Double-click the bottom of the page with the left mouse button.
2. In the footer area that opens, you can insert an image and text. To add page numbering, click **Page number**.
3. Click **Done** to save the changes.

After saving the report in PDF or Word format, the headers and footers are displayed in the document. In Word, they can be edited.

### 4.7.3 Zoom Controls

Using the zoom controls, you can increase or decrease the document's display scale for more convenient viewing and editing.



On the zoom toolbar, you can:

- View the number of the currently open page and the total number of pages.
- Zoom out or zoom in by clicking the corresponding – or + button.  
Maximum zoom: 400%.  
Minimum zoom: 50%.
- View the current zoom level as a percentage, for example, 100%.
- Open the document in full-screen mode. To return to the default zoom level, click the current zoom percentage, for example, 100%.

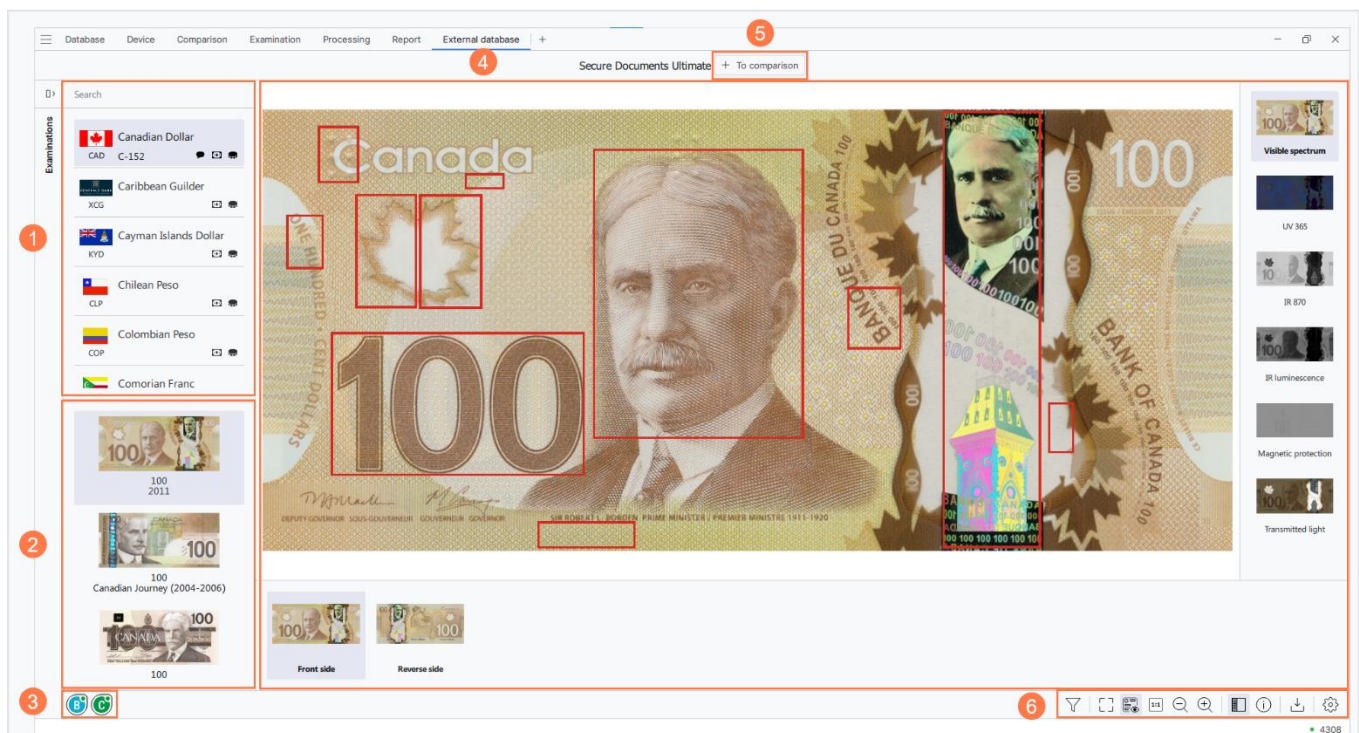
## 4.8 External Database

**Note.** The **External Database** tab becomes available only after the Information Reference System (hereinafter referred to as the IRS) has been purchased.

For information about databases available in the informational reference system and their usage conditions in RFS, contact a Regula representative or fill out the form at <https://explore.regula.app/docs-support-request>.

The **External Database** tab displays IRS containing images of banknotes, passports, identification cards, visas, driver's licenses, certificates, along with information about their key authenticity features across various levels (technological, polygraphic, and physico-chemical protection).

The IRS functionality is described below using the Secure Documents Ultimate (SDU) database as an example.



The External Database tab consists of the following elements:

### 1 Countries and Currencies List

The **Countries and Currencies List** contains a list of countries and their national currencies.

To find the required document or currency, enter its name in the **Search** field in the upper-left corner of the screen and select the country of issue.

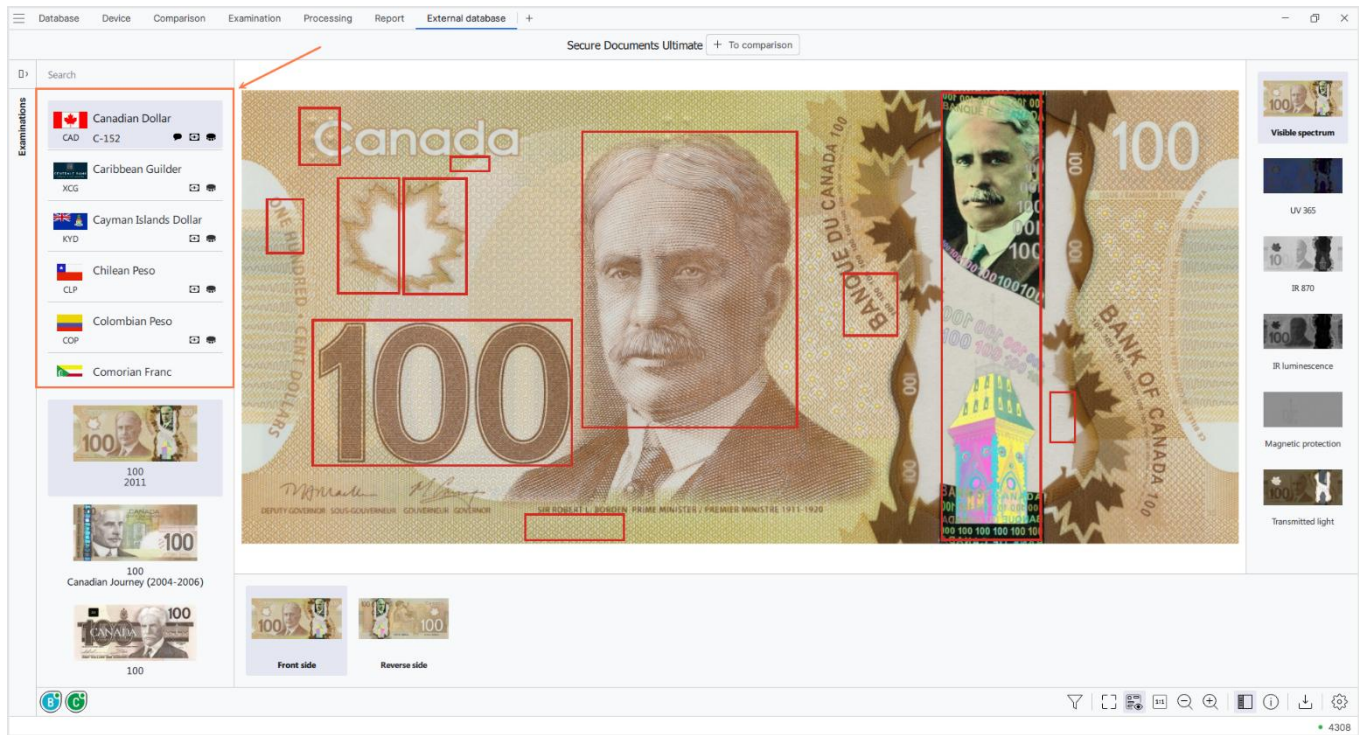
---

|                                              |                                                                                                                                                                                                                       |
|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>2 Documents and Banknotes List</b>        | A list of available documents and banknotes. Each document and banknote display a name and one or two images, depending on the file type.                                                                             |
| <b>3 Database List</b>                       | A list of available databases.                                                                                                                                                                                        |
| <b>4 Document and Banknote Display Panel</b> | Used to view an image of the selected document or banknote. The available tools allow you to examine a database specimen in detail.                                                                                   |
| <b>5 To comparison</b>                       | To use a document from the database as a reference specimen for comparison, select the document and click <b>To comparison</b> above the image. Then follow the instructions in the Comparison section of this guide. |
| <b>6 Toolbar</b>                             | This panel contains tools for filtering, examining, and updating the list of documents and banknotes.                                                                                                                 |

---

### 4.8.1 Countries and Currencies List

The **Countries and Currencies List** is located in the upper-left part of the main window. An image of the country's flag is displayed next to each country name.



The IRS contains the following symbols:

-  – indicates that the document list for this country contains electronic documents.
-  – indicates that a user comment has been added to a document. The symbol will appear next to the country name. Hover the mouse cursor over the symbol, and the user comment will be displayed as a pop-up message.
-  – indicates that the list of payment documents for this country contains paper banknotes.
-  – indicates that the list of payment documents for this country contains coins.

## 4.8.2 Documents and Banknotes List

The list of documents/banknotes is located below the list of countries/currencies on the left side of the main window. Each document/banknote in the list has a name and one or two images, depending on the document/banknote type.

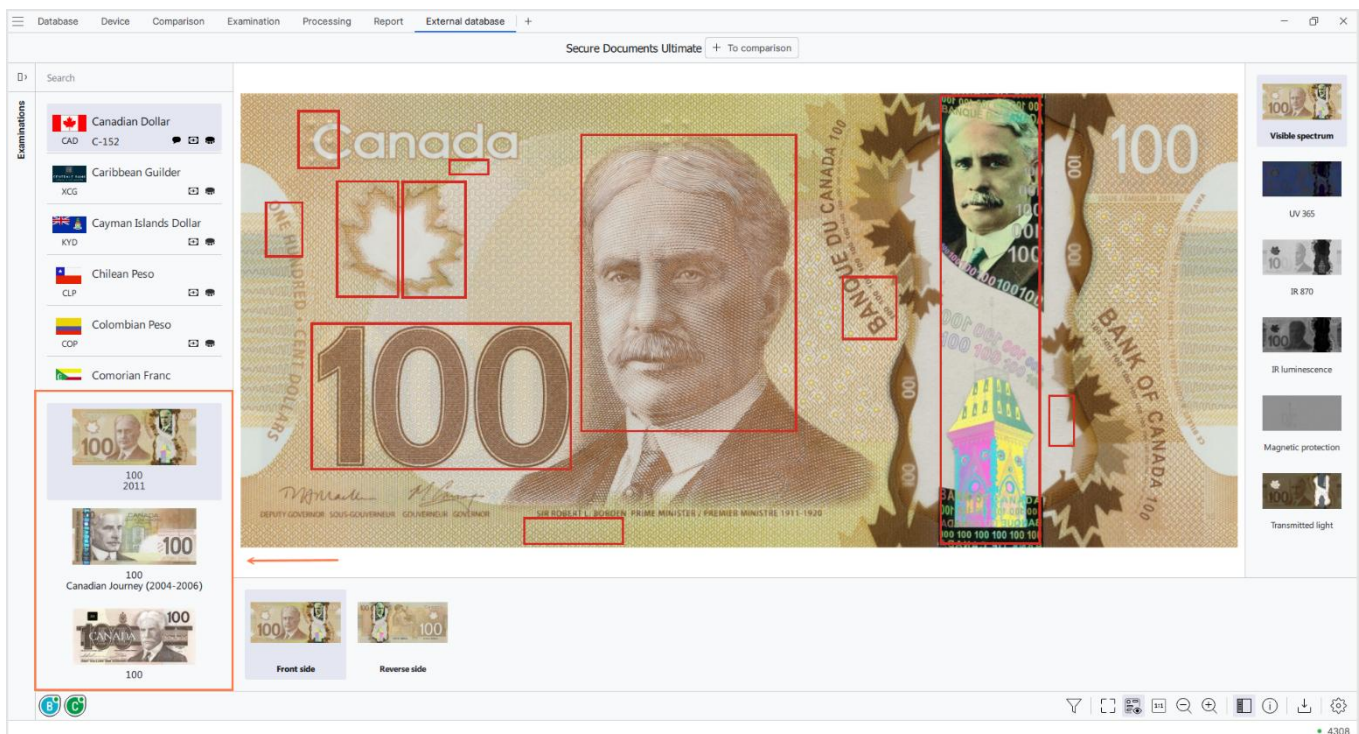
Electronic documents are marked with the  symbol.

Documents/banknotes with user comments are marked with the  symbol. Hover the mouse pointer over the  symbol. The user's comment will appear in a pop-up message.

Documents/banknotes withdrawn from circulation are marked with an orange label in the upper-left corner.

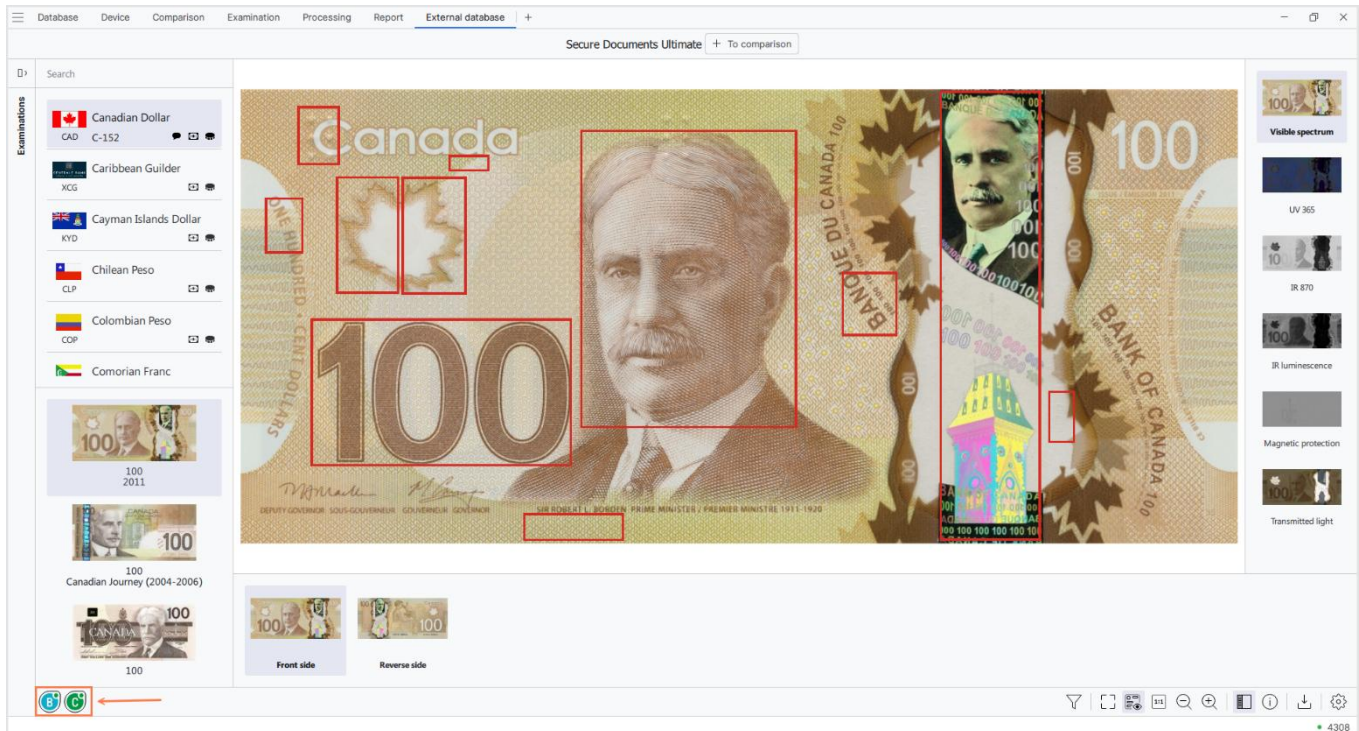


Select a document from the list by left-clicking it, and the image will open in the **Document and Banknote Display Panel**.



### 4.8.3 Database List

The database connection/disconnection buttons are located in the lower-left corner of the main window.



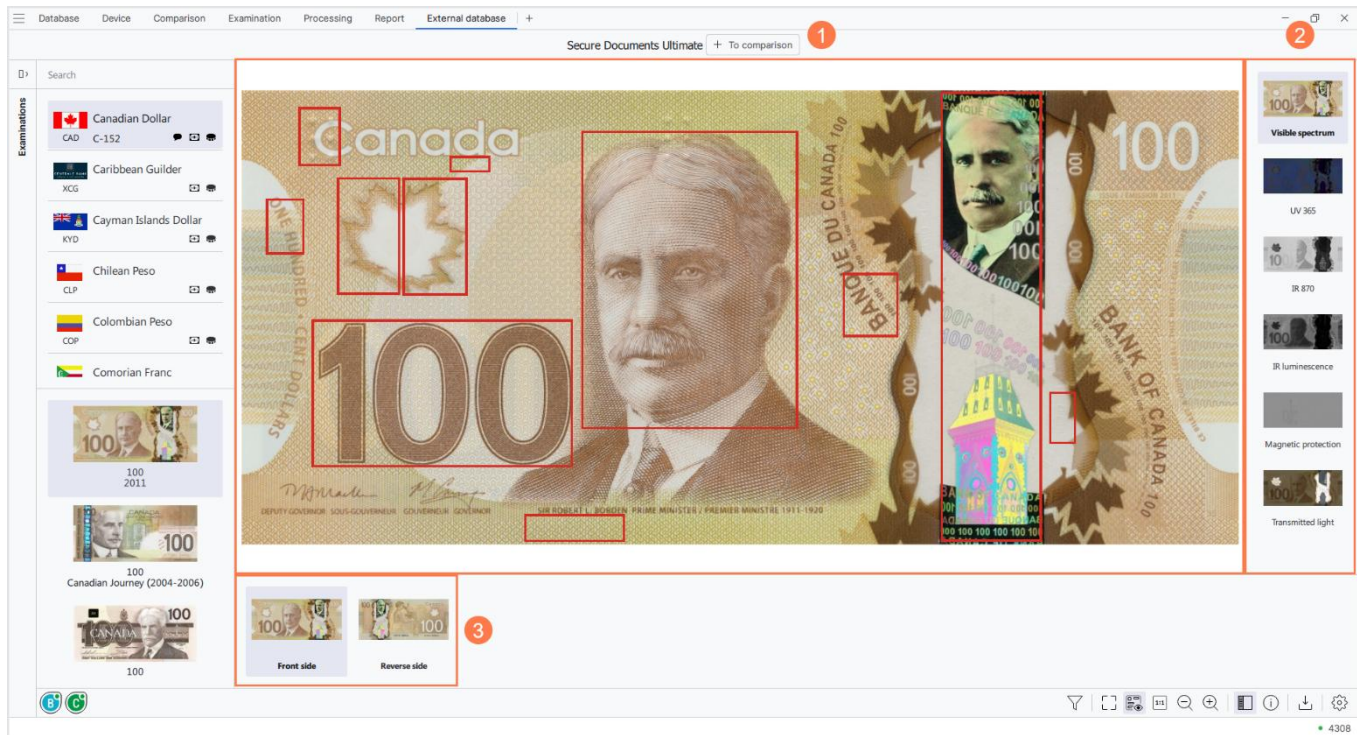
Available databases:

-  – passports database.
-  – visas database.
-  – banknotes database.
-  – coins database.
-  – autodocs database.

A green indicator in the upper-right corner of the button means that the database is connected; a grey indicator means that the database is disconnected.

#### 4.8.4 Document and Banknote Display Panel

The **Document and Banknote Display Panel** is located in the central part of the main window, displays images of the selected document or banknote, and consists of three parts:



1. Image of the selected page/side of the document/banknote in the center.
2. List of available images of the selected page/side of the document/banknote under different light sources on the right.
3. List of pages/sides of the document/banknote in the bottom part of the **Document and Banknote Display Panel**.

#### Security Features

The security features of the document/banknote are displayed as rectangles positioned on the document/banknote images in the main window. When you hover the mouse cursor over a security feature, the name of the feature and its printing method will appear.

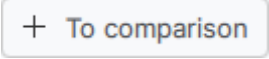
To display an enlarged image of a security feature, left-click it. The image of the examined document/banknote will be located in the upper-right corner of the application window. You can zoom it in or out using the mouse wheel, with the mouse cursor positioned over the image. To return to the main image view mode, click **Esc** or right-click the image of the security feature.

The database contains GIF-animations of security features that change its properties in certain conditions. If you click on a security feature with GIF animation, it will start automatically.

If the image is animated, below it you will see the buttons allowing to control the animation. Click the button  to pause the animation. Use  and  buttons to view the animation frame by frame. It allows examining any image of the animation.

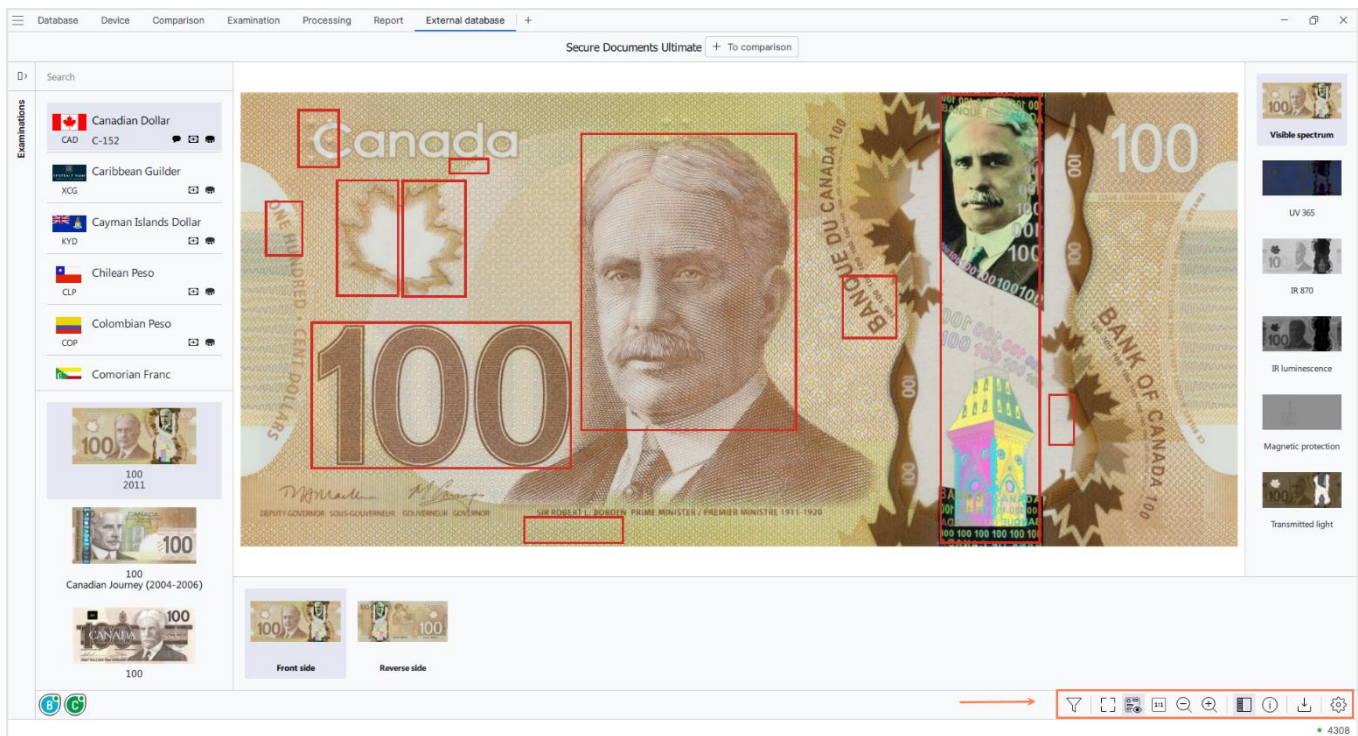
#### 4.8.5 To comparison

To add a document or banknote specimen for comparison:

Click the  button at the top of the screen. The selected specimen will be added to the **Comparison** tab as a reference specimen.

Go to the **Comparison** tab, add the file to be examined, and use the available tools to compare the images and identify differences. For more information about working with the reference specimen and the file being examined, see the **Comparison** section of this guide.

## 4.8.6 Toolbar



The toolbar is located at the bottom of the main application window and contains the following tools:

-  **Advanced search (Ctrl+D)**  
The **Advanced search** tool is used to precisely filter the document database by document, transaction, security feature, and date parameters.  
To open the **Advanced search** window:
  - Click the  icon in the toolbar at the bottom of the screen
  - Or
  - Press **Ctrl+D**

**Advanced search (Ctrl+D)** ×

☐ Coin

☐ Fake

☐ Invalid

☐ Low quality

Document group  

▼

Document name  

▼

Document construction  

▼

Light condition  

▼

Circulation  

▼

Protection type  

▼

Printing method  

▼

Creation date

01/01/1900

01/01/1900

In circulation

01/01/1900

01/01/1900

Out of circulation

01/01/1900

01/01/1900

Number of countries/currencies: 205

Number of documents: 8123

Reset

Apply

Use the following parameters to filter documents:

- **Coin** – select this checkbox to search for currency items or coins.
- **Invalid** – select this checkbox to search for documents marked as invalid.
- **Low quality** – select this checkbox to search for documents marked as having low image or data quality.
- **Document group** – helps narrow the search to a specific category, such as passports, ID cards, driving licenses, or visas. Open the drop-down list and select the required document group.
- **Document name** – allows you to find a specific document type within the selected group or country. Select the document name from the list.

- **Document construction** – allows you to filter documents by their physical format or production type, such as card, booklet, sheet document, booklet block, sticker, banknote, or another construction type.
- **Light condition** – helps search for documents by available viewing modes, such as visible spectrum, UV, or IR. Select the required lighting type to check the document in a specific spectral mode.
- **Circulation** – used to search for documents by status or period of use. Select the required value to search for documents that are or were in circulation.
- **Protection type** – allows you to find documents with specific security features. In the image, such elements may be highlighted with red frames. Select the required security type to quickly find documents with the corresponding features.
- **Printing method** – helps search for documents by the technology used to apply text, images, or security features. Select a printing method from the list to search for documents produced using a specific method.
- **Creation date** – allows you to find documents added to the database during a specific period. Specify the start and end dates to limit the search to the required time range.
- **In circulation** – allows you to find documents that were valid during the selected period. Enter a date range to find documents relevant to a specific time period.
- **Out of circulation** – allows you to find documents that were withdrawn from use or replaced by new versions. Fill in the dates to find outdated or no longer valid documents.

Click the **Apply** button to get the search result. The search will run using the specified filters. The document list will then be updated.

Click the **Reset** button if you want to start the search again and clear the selected parameters.



- **Full screen (Ctrl+F11)**

The **Full screen** tool is used to open the document viewing workspace in full-screen mode.

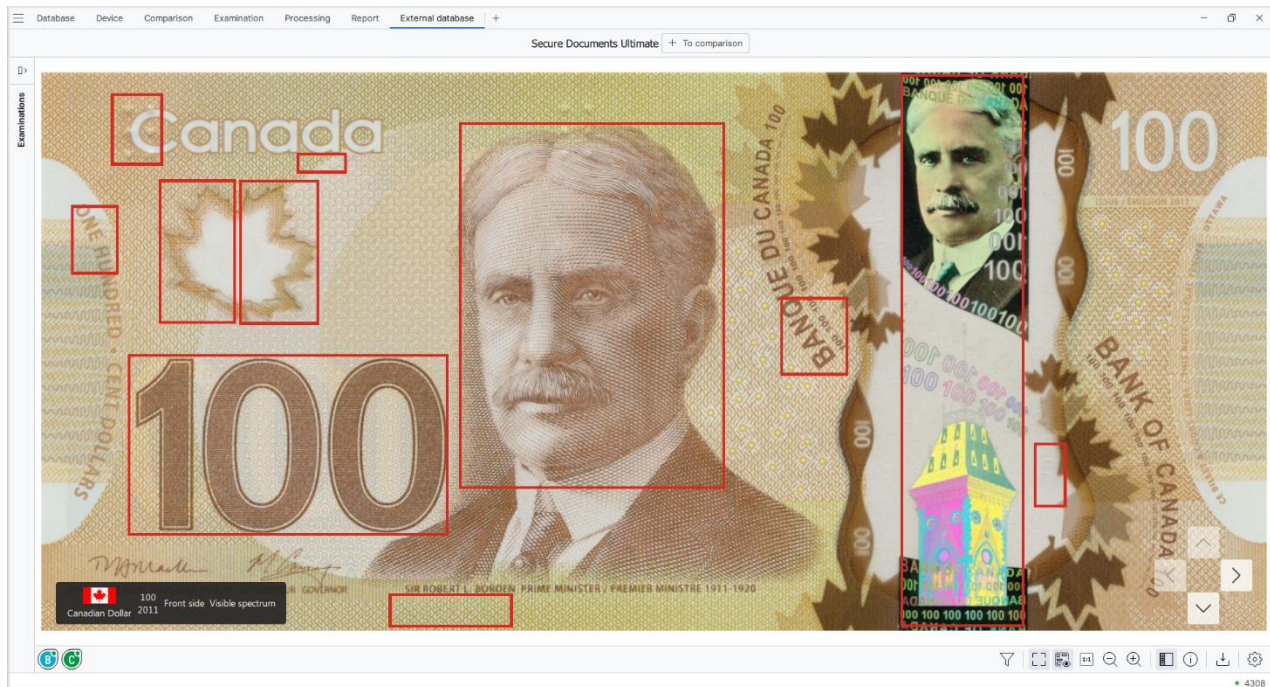
Full-screen mode lets you expand the document display area and hide unnecessary interface elements. This is useful when you need to examine an image in detail, check small security features, compare document zones, or work with a document without distracting visual panels.

In full-screen mode, the lists of countries and documents, pages, and document images in various light sources are not displayed.

To display the document in full-screen mode:

- Click the  icon in the toolbar at the bottom of the screen
- Or

- Press **Ctrl+F11**



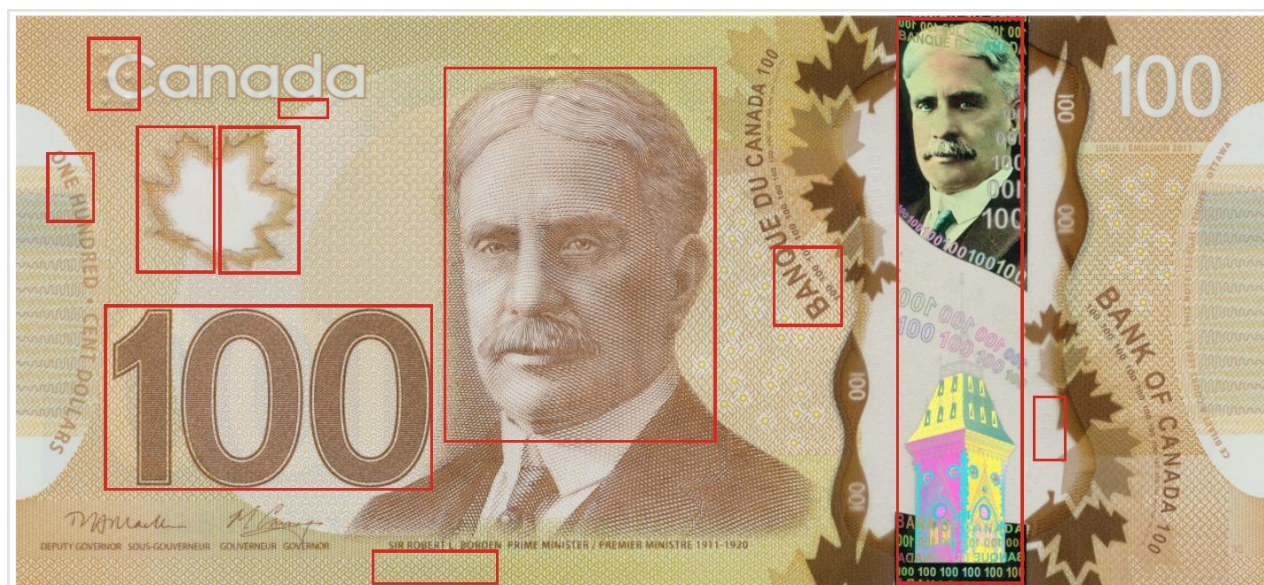
To switch to another document/banknote page in **Full screen** mode, use the following navigation arrows:

-  – go to the previous document page.
-  – go to the next document page.
-  – go to the next document page examination result obtained using a different light source.
-  – go to the previous document page examination result obtained using a different light source.

To exit the mode, click the  icon again or press Ctrl+F11.

-  **Show fragments (Ctrl+0)**

The **Show fragments** tool enables and disables the display of security features on the selected document page, except for Brief-type databases.



To enable or disable the display of security features on the document:

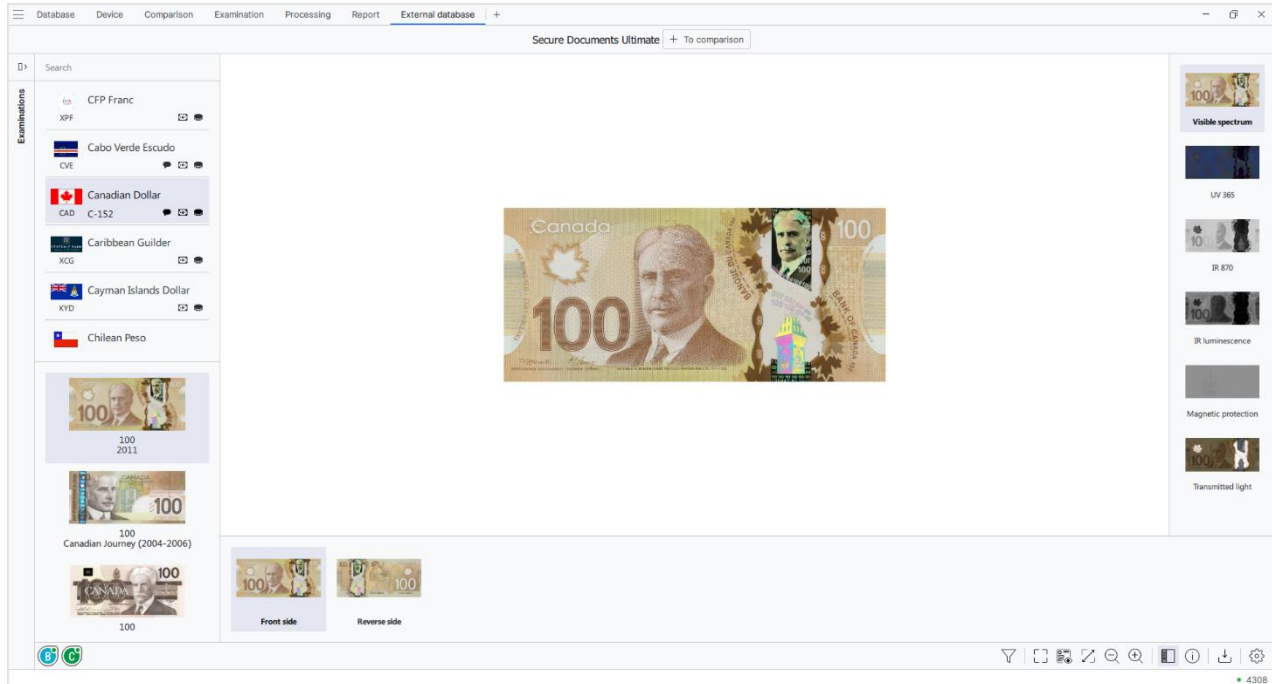
- Click the  icon in the toolbar at the bottom of the screen
- Or
- Press **Ctrl+0**

-  **1+1 (Ctrl+1)**

The **1+1** tool switches the document display modes: fit image to window/original image size.

To fit the image to the window:

- Click the  icon in the toolbar at the bottom of the screen
- Or
- Press **Ctrl+1**



In **1+1** mode, the tool will be replaced with the **Fit to window**  tool.

To disable it, click the  icon or press **Ctrl+1**.

-  **Fit to window (Ctrl+1)**

The **Fit to window** tool appears only in **1+1** mode and allows you to return to the mode where the document is fully displayed using all available space in the **Document and Banknote Display Panel**. Low-resolution images are displayed at the maximum available zoom level and may appear smaller than the application window.



- **Zoom out (Ctrl+-)/Zoom in (Ctrl++)**

The **Zoom out/Zoom in** tool allows you to change the size and scale of the displayed document.

To zoom out or zoom in on a document fragment:

- Click the corresponding  icon in the toolbar at the bottom of the screen
- Or
- Press **Ctrl+-** and **Ctrl++**

Press **Esc** to return to the original image size.

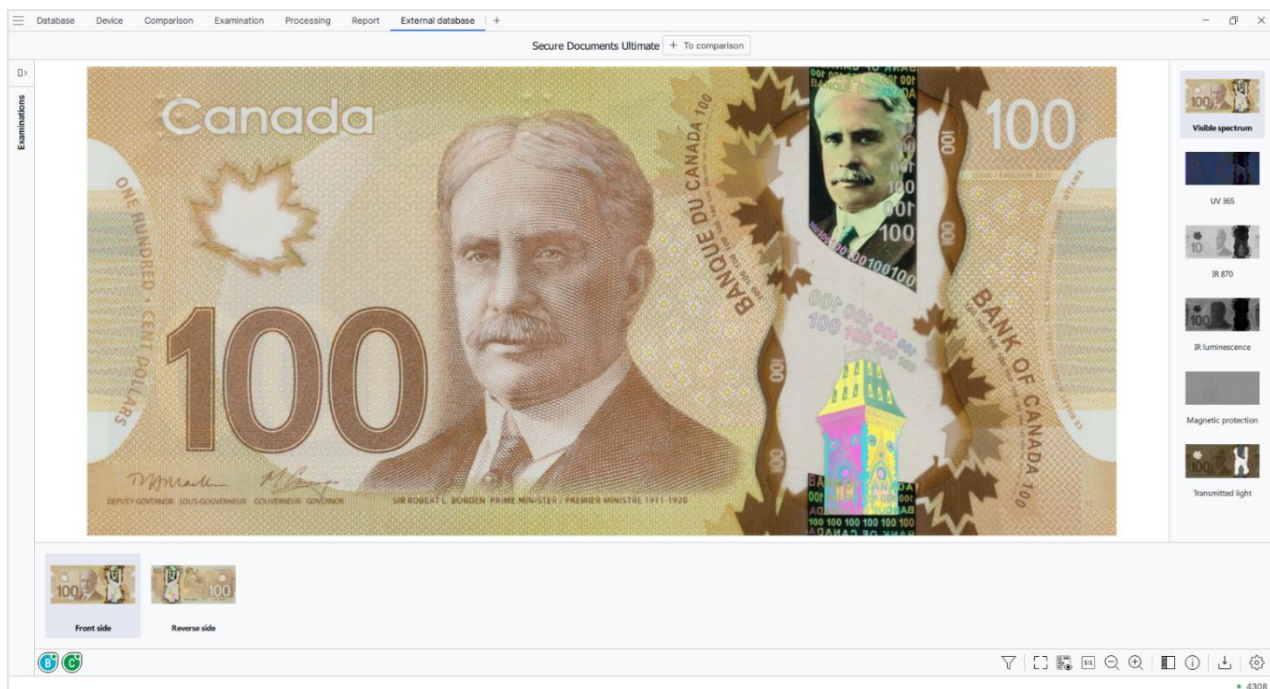


- **Document list (Ctrl+L)**

The **Document List** tool allows you to show or collapse the panel with the lists of countries/currencies and documents/banknotes. By default, the lists are displayed in the panel on the left.

To show or collapse the **Countries/Currencies and Documents/Banknotes Lists**:

- Click the  icon in the toolbar at the bottom of the screen
- Or
- Press **Ctrl+L**





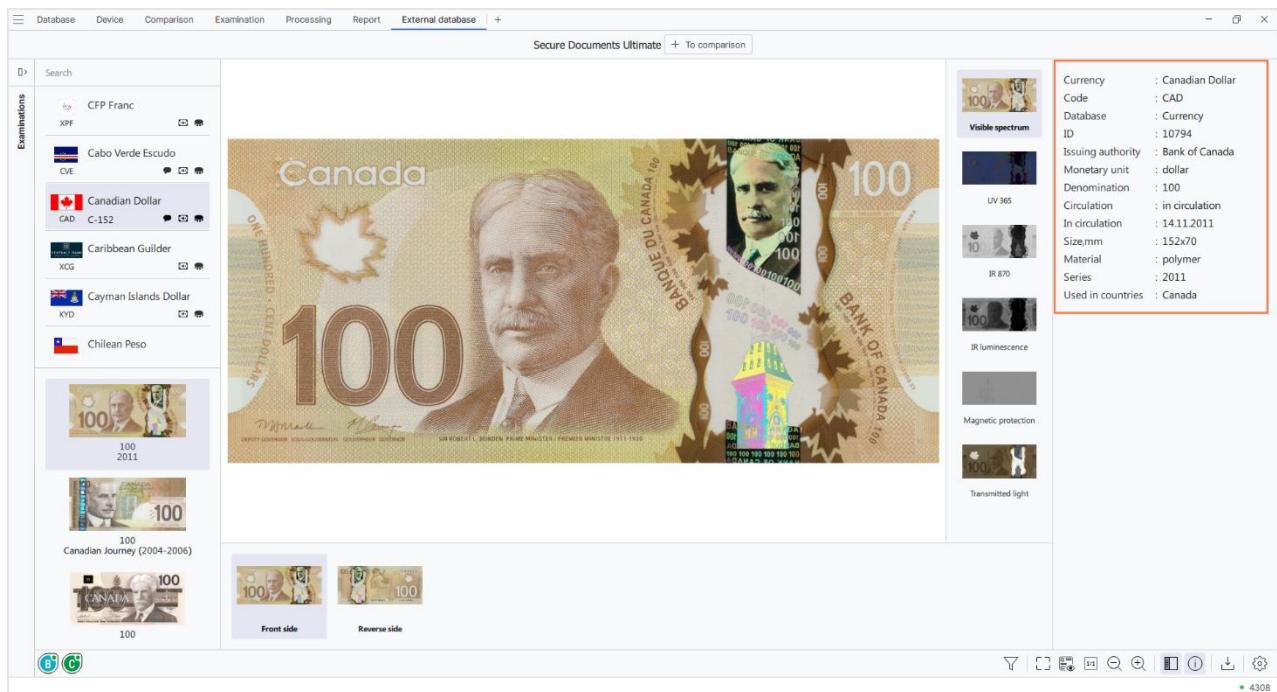
## • Document/Banknote info (Ctrl+I)

The **Document/Banknote Info** tool shows or hides the document/banknote description panel.

The document/banknote description panel contains information about the selected document/banknote, including the issuing country, the document code according to the ISO standard, the document/banknote name, the document/banknote ID number in the database, the size and shape of the corners, the date when the document/banknote was introduced or withdrawn from circulation, cover description, page stitching, data page description, and other details.

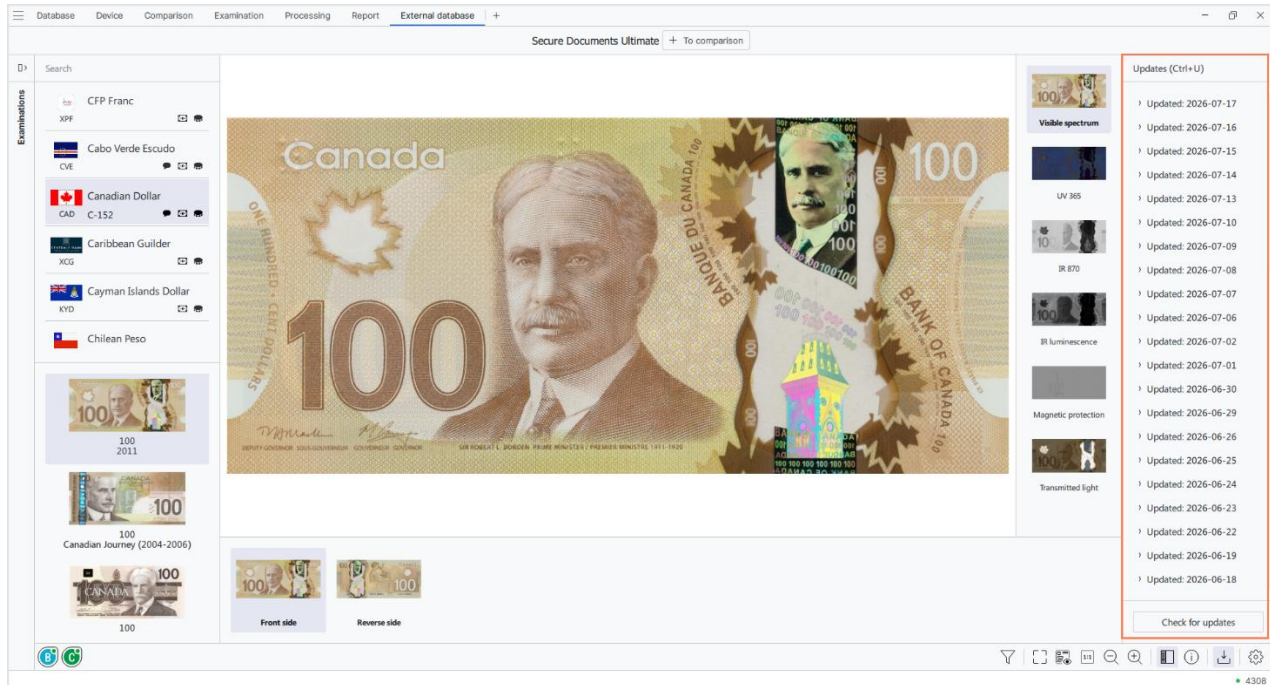
To show or collapse the document/banknote information panel:

- Click the  icon in the toolbar at the bottom of the screen
- Or
- Press **Ctrl+I**

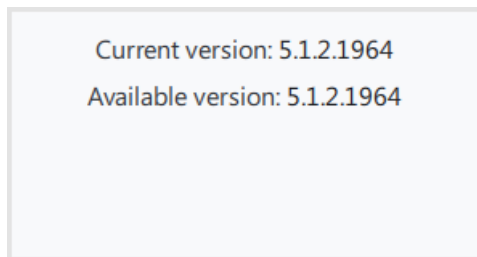


-  **Updates (Ctrl+U)**

To update the database, click the **Updates**  icon in the toolbar at the bottom of the screen or press **Ctrl+U**. The panel with information about the latest database updates opens on the right.

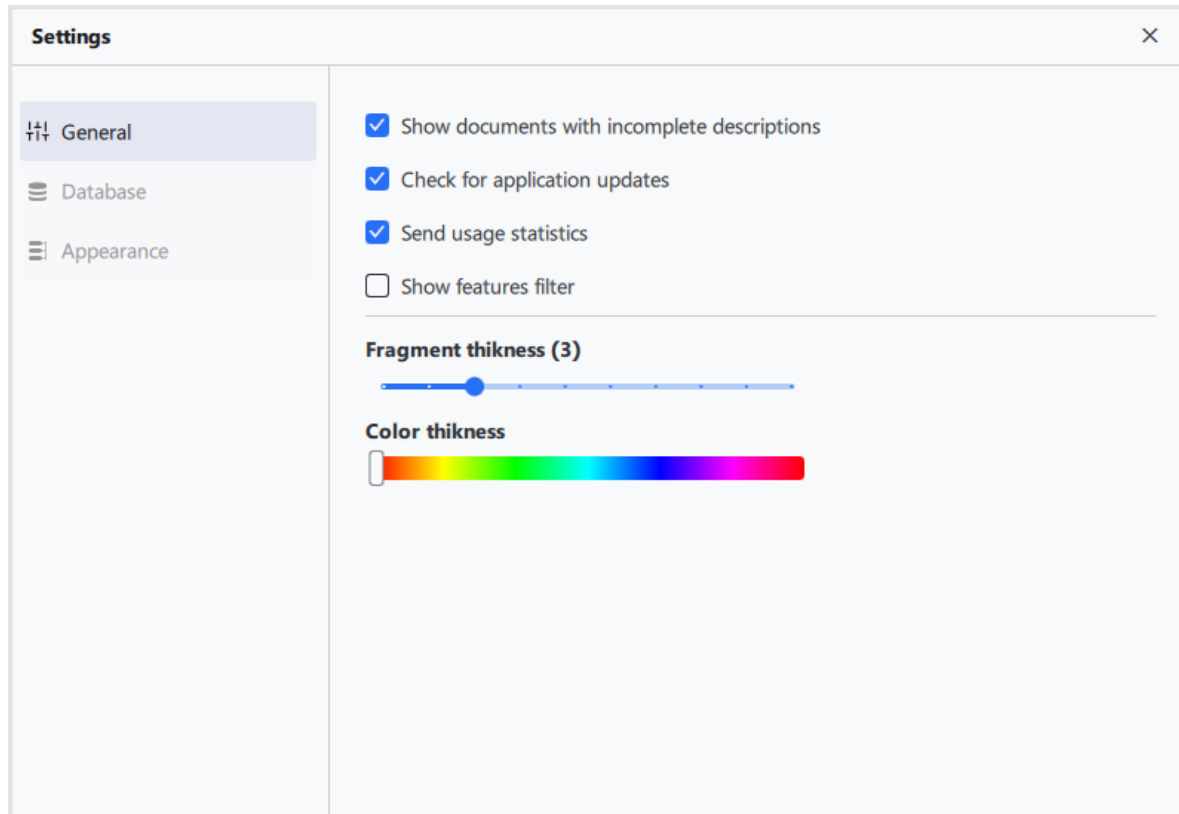


Click **Check for updates** to check for database updates. The check result is displayed in a separate window.



-  Settings (Ctrl+O)

To go to the external database settings, click the **Settings**  icon in the toolbar at the bottom of the screen or press **Ctrl+O**.



The **General** tab contains the following parameters:

- **Show documents with incomplete descriptions** – select this checkbox to display documents with incomplete descriptions in the document list.
- **Check for application updates** – select this checkbox to enable checking for application updates.
- **Send usage statistics** – select this checkbox to automatically send application usage statistics.
- **Show features filter** – select this checkbox to display a filter that allows elements to be filtered by control type.
- **Fragment thickness ( )** – select the thickness of the highlight line for fragments. The selected line size will be shown in parentheses, for example (3).
- **Color thickness**– set the color of the fragment highlight line by moving the slider on the color slider.

## 5 ADDITIONAL EQUIPMENT

Some of Regula devices can be used with additional equipment, where the device acts as the **primary** device and the additional equipment as the **secondary** device.

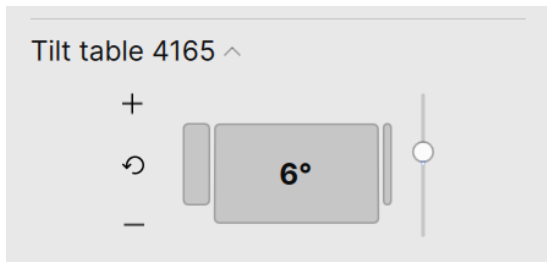
For proper operation, ensure that you connect the additional equipment to one of the USB ports on the Regula device.

## 5.1 Adjustable Tilt Table Regula 4165

The **adjustable tilt table Regula 4165** is used to examine document security features at different tilt angles relative to the table's surface.

The adjustable tilt angle range of the table is from -30° to +30°.

When this type of table is detected and connected to the USB port of the Comparator, an additional control group **Tilt table 4165** appears in the instrument control panel in the **Device** tab.



## 5.2 Trinocular Stereo Microscope Regula 5003

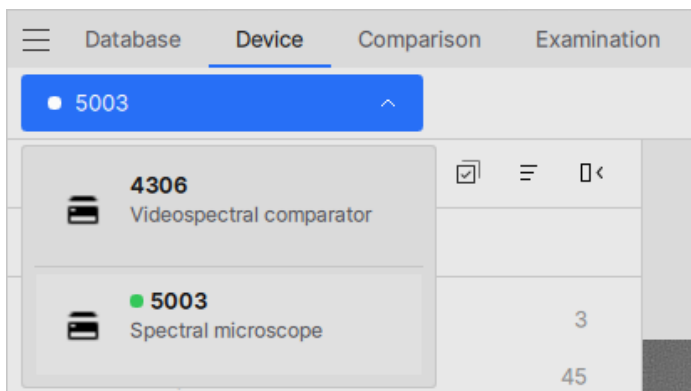
The **trinocular stereo microscope Regula 5003** is designed for forensic examination and document authenticity verification.

The microscope provides the following capabilities:

- Displaying an enlarged image of the examined object on a monitor.
- Providing additional visual inspection through the trinocular head.
- Performing fragment-by-fragment analysis of examined objects.
- Capturing, processing, and storing images on a PC using Regula Forensic Studio (RFS) software.
- Zooming the image of the examined object and providing additional illumination with visible light.

To begin working with the microscope:

1. Connect the microscope to the computer's USB port.
2. Select **5003** from the drop-down list on the **Device** tab:



Adjust the settings and click the **Capture**  button above the image view window to save the image in the **database**.

### 5.3 Polarizer Regula 4169

The **polarizer Regula 4169** is used for detailed authenticity verification of passports, driving licenses, ID cards, technical and vehicle documents, visas and entry stamps, banknotes, securities and other security documents. The device operates by examining a questioned document while varying the polarization angle.

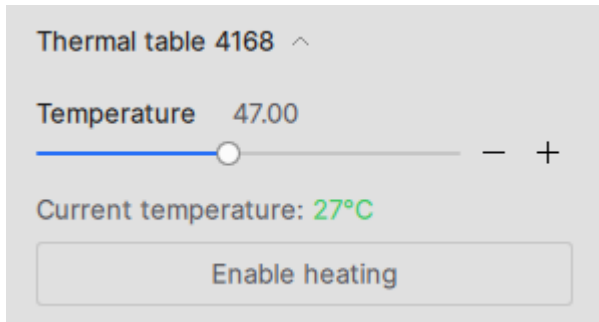
To begin working with the polarizer, connect it to the USB port of the Comparator. An additional control group **Polarizer 4169** appears in the instrument control panel in the **Device** tab.



## 5.4 Thermostage Regula 4168

The **Thermostage Regula 4168** is used for detailed authenticity verification of passports, driving licenses, ID cards, technical and vehicle documents, visas and entry stamps, banknotes, securities and other security documents containing thermochromic ink which changes its color, transparency and other properties when heated.

To begin working with the thermostage, connect it to the USB port of the Comparator. An additional control group **Thermostage 4168** appears in the instrument control panel in the **Device** tab.



Use the **Temperature** parameter to set the required heating temperature of the thermostage table when checking the document, and press the **Enable heating** button.

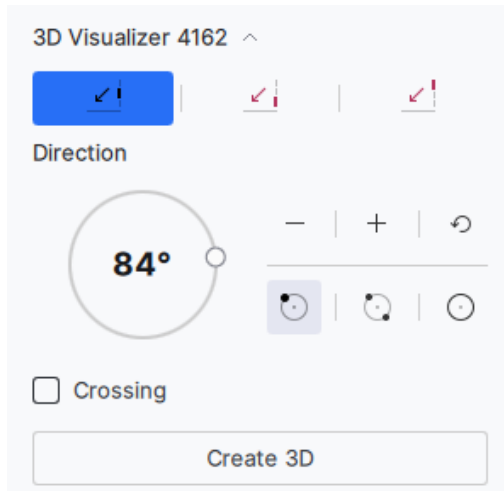
## 5.5 3D Visualizer Regula 4162

The **3D Visualizer Regula 4162** is used for examining and verifying the authenticity of documents: passports, driver's licenses and ID cards, technical documents, visas, seals, banknotes, and other securities.

The device works by examining the sample in detail using 90 light sources arranged in a circle on three levels. The first and third levels generate IR light with a wavelength of 860 nm, while the second provides light in the visible spectrum for the most informative analysis of security features.

The 3D Visualizer Regula 4162 is compatible with the Regula 4306 and Regula 4308 video spectral comparators and similar devices.

To begin working with the 3D Visualizer, connect it to the USB port of the Comparator. An additional control group **3D Visualizer 4162** appears in the instrument control panel in the **Device** tab.



To precisely position the object in the center of the ring, use the system of two intersecting laser beams. They indicate the geometric center of the device ring. To enable the laser crosshair during document scanning and 3D visualization creation, select the **Crossing** checkbox. To disable the intersection of the light sources, clear the **Crossing** checkbox.

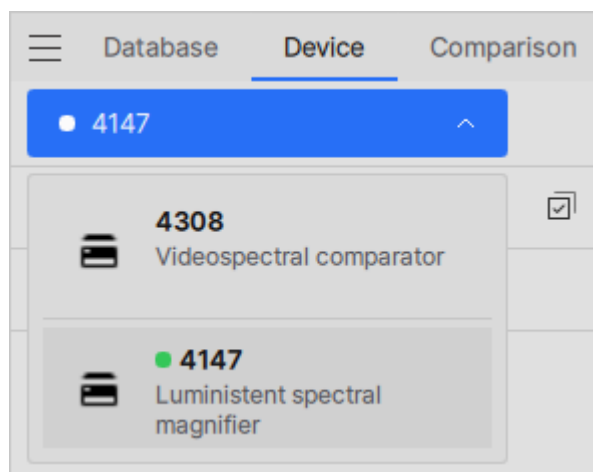
To scan the document and create a 3D visualization, adjust the device settings and click the **Create 3D** button.

## 5.6 Spectral Luminescent Magnifier Regula 4147

The **spectral luminescent magnifier Regula 4147** is used for advanced examination of passports, driving licenses, ID cards, technical and vehicle documents, visas and entry stamps, banknotes, securities and other documents with special security features in visible light and in high-IR range (anti-Stokes luminescence).

To begin working with the spectral luminescent magnifier:

1. Connect it to the computer's USB port.
2. Select **4147** from the drop-down list on the **Device** tab:



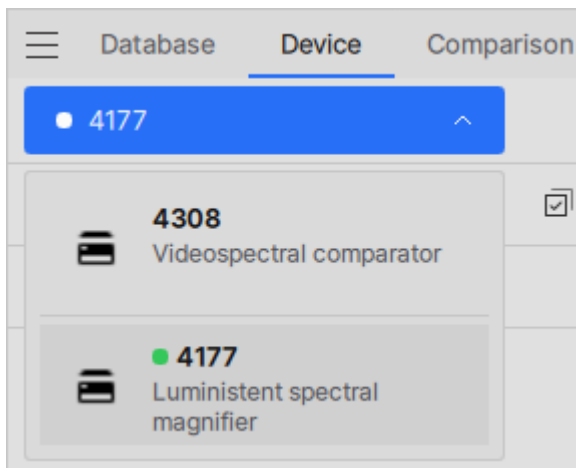
Adjust the settings and click the **Capture**  button above the image view window to save the image in the **database**.

## 5.7 Spectral Luminescent Magnifier Regula 4177

The **spectral luminescent magnifier Regula 4147** is used for an in-depth examination of passports, driver's licenses, technical and vehicle documents, visas, seals and stamps, banknotes, securities and other documents with special security features in the visible spectrum range. The magnifier enables to examine luminescent features of materials in the visible spectrum range when exciting the material by UV light and luminescent features in IR spectrum range when exciting the material by the intensive light of the visible spectrum range. In addition, this device allows examination of luminescent features in the visible range when the material is excited by intense IR light (anti-Stokes luminescence).

To begin working with the spectral luminescent magnifier:

1. Connect it to the computer's or device's USB port.
2. Select **4177** from the drop-down list on the **Device** tab:



Adjust the settings and click the **Capture**  button above the image view window to save the image in the **database**.

## 5.8 Magneto-Optical Magnifier Regula 4198

The **Magneto-optical magnifier Regula 4198** is designed to visualize and examine magnetic security features in documents. It allows users to detect their presence, determine their location, and assess how the magnetic material is distributed within the examined object.

The magnifier operates as follows:

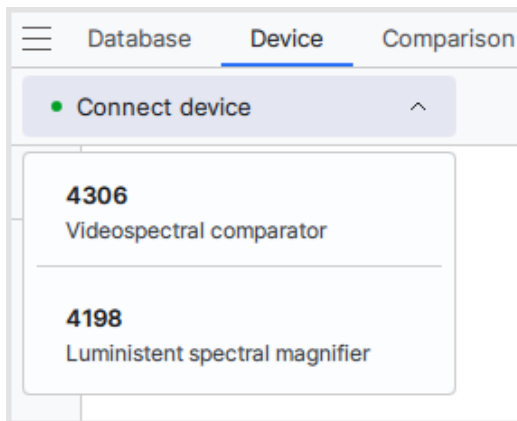
- The examined object is magnetized by an external magnetic field.
- The stray magnetic fields of the magnetized object are visualized magneto-optically using the Faraday effect.
- The resulting image is converted into digital data.

An efficient magnetization system and the high sensitivity of the magnifier make it possible to examine magnetic materials with low stray magnetic flux levels.

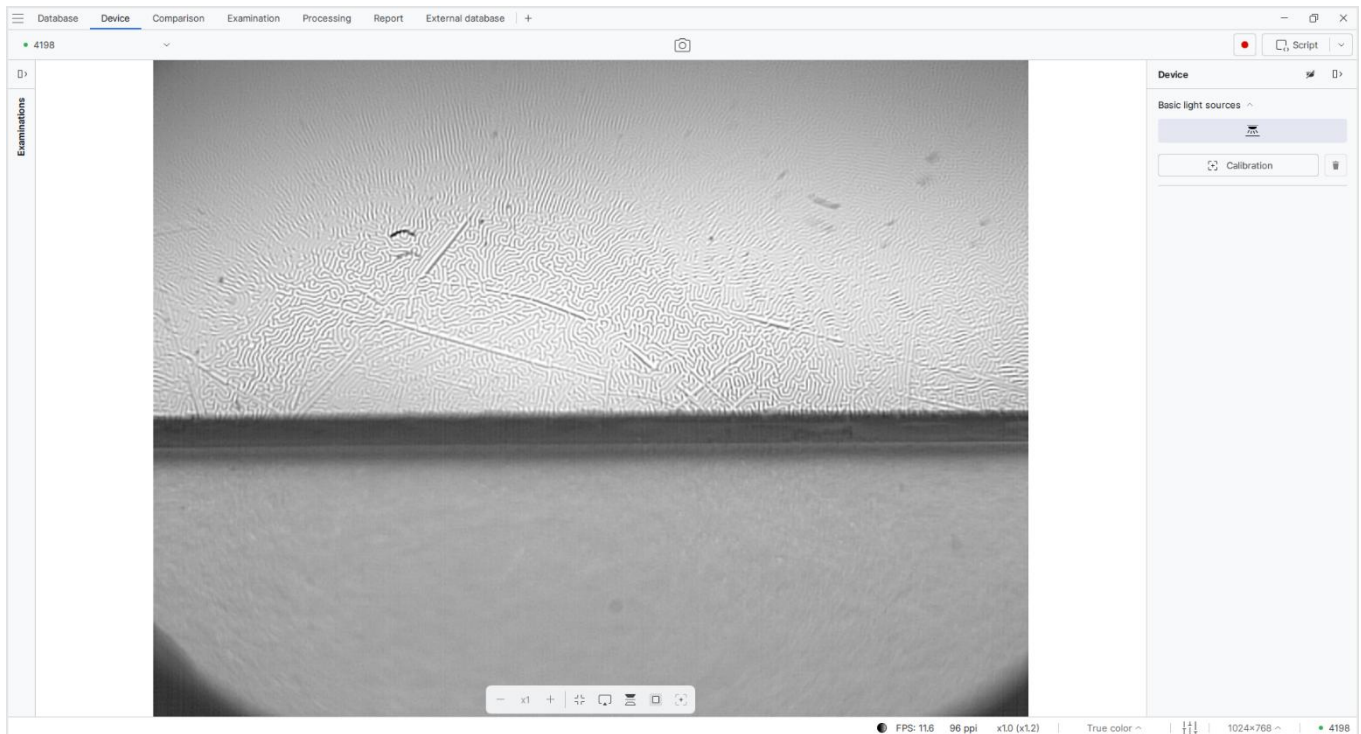
**Note.** Do not use the magnifier to examine objects with residual magnetization, including credit cards, metallic security threads and strips, magnetic keys, and other similar objects.

To begin working with the magneto-optical magnifier:

1. Connect it to the computer's USB port.
2. Select **4198** from the drop-down list on the **Device** tab:



After the device is connected, the main application window will appear as follows:



The following tools are available on the **Device** tab:

- **Calibration** — calibrate the device by clicking the Calibration button on the right-hand panel.
- **Basic light sources** — click the **White**  button to turn the light source on or off.
- **Snapshot** — click the **Snapshot**  button above the image viewing area to save the image to the database.
- **Clear calibration** — click the  button to delete the calibration results.