



# Instructions Manual

## **INSPECTIS<sup>®</sup> CAP Pro** v7.2

## Table of contents

<b>Installation and Setup .....</b>	<b>4</b>
Installing INSPECTIS Software.....	4
Running INSPECTIS for the First Time .....	4
Software Preferences.....	5
Device Settings .....	8
Selecting Magnifications .....	9
Calibrating Magnifications .....	10
<b>Working with INSPECTIS Software .....</b>	<b>12</b>
Live Video and Still Images.....	12
Zooming .....	12
Saving Images.....	13
Loading Images.....	13
Image Adjustments .....	14
<b>Managing Patient Files and Databases.....</b>	<b>16</b>
Database and Security.....	16
Open Patient Manager .....	17
Selecting or creating a new patient in a different database .....	17
Export Patient File.....	18
Open Database Manager.....	18
Create a New Database.....	18
Add Database.....	19
Remove Database .....	19
Patient Data Interchange Between Different Databases .....	19
<b>Workflow of Capillaroscopy Examination .....</b>	<b>20</b>
Patient Examination .....	20
Finger Map .....	21
Capturing Capillary Images and Videos.....	22
Following up a Finger.....	22
Writing Comments for Specific Images .....	23

Record Video.....	24
Record Audio.....	24
Examination Data Table.....	25
Exporting an Examination .....	25
Examination Notes .....	26
Picture Gallery.....	27
Create Report.....	28
<b>Analysing Nail-fold Capillary Images.....</b>	<b>30</b>
Reference Overlays .....	30
Assessing Capillaries .....	31
Counting Capillaries .....	32
Measurement Tools .....	32
Annotation Tool .....	34
Saving Measurements .....	34
Comparison Tools .....	34
<b>Shortcut Key List.....</b>	<b>35</b>
<b>System Requirements.....</b>	<b>36</b>

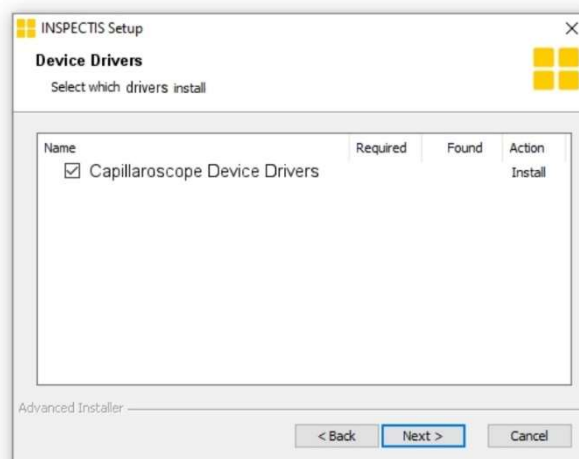
## Installation and Setup

### Installing INSPECTIS Software

- Installation shall be done with full administration privileges.
- You might need to disable antivirus system of your computer temporary during the installation.


To install INSPECTIS software:

1. Plug the provided software protection Dongle to a free USB port of your computer.
2. Run the setup file. The installation wizard will start and guide you through the installation.
3. **Capillarscope** device Drivers are installed automatically by installation wizard. If Drivers are already installed in your computer, uncheck the Capillarscope Device Driver.  
No Driver is needed for **CapiScope** and **DigiScope** devices.



4. Follow on-screen instructions to complete the installation.
5. When the installation is complete click "Close" to exit the window.

### Running INSPECTIS for the First Time

1. Connect your **Capillarscope** to a free USB3.0, USB3.1 or USB3.2 port of your computer. Minimum 5Gbit/s data transmission is required. **CapiScope** and **DigiScope** devices can be plugged to a USB2.0 port.
2. Click on INSPECTIS  icon on your computer desktop and select **Run as Administrator** first time. Running as Administrator will enable you to register and activate the software automatically over internet.

3. Select language from the list.
4. From the "Software Version" selection window, select:
  - "INSPECTIS CAP Pro".
5. Fill in license number (found in the package) and the other requested information.

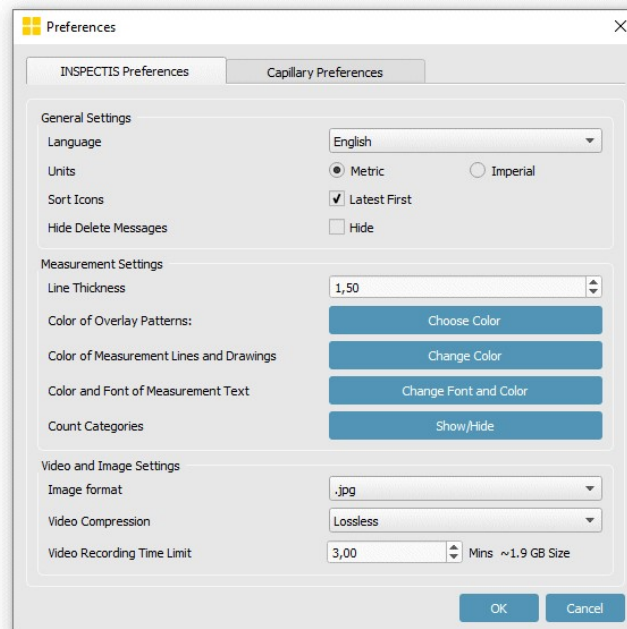
If automatic on-line registrations is not possible, complete the Off-line Registration form and email it to [info@inspect-is-com](mailto:info@inspect-is-com) to get an software activation key.

## Software Preferences



Click on  icon to display the preferences window.

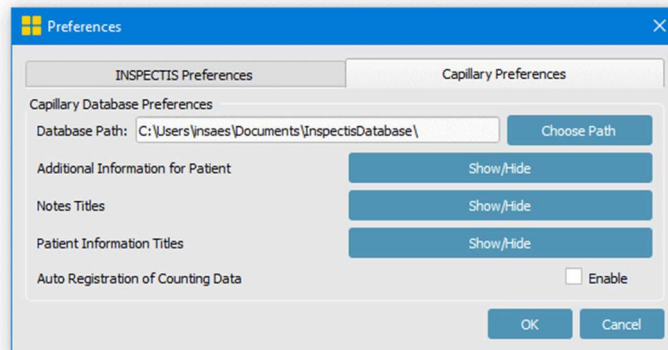
In **INSPECTIS Preferences**, the user may change overall settings of the INSPECTIS software



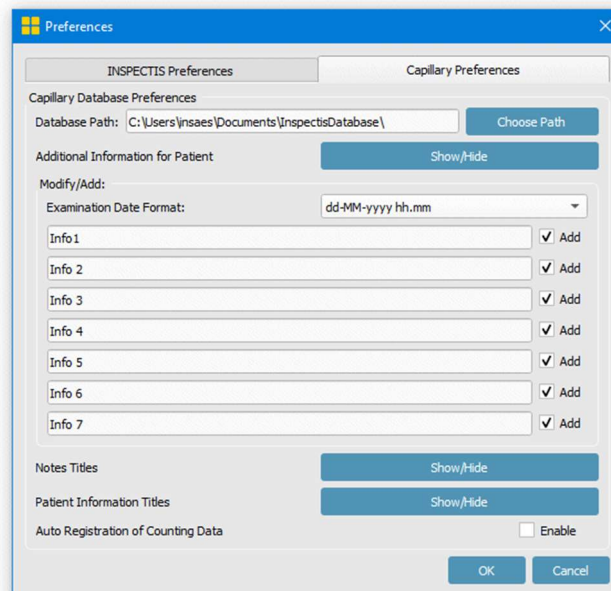
In **Capillary Preferences**, the user may change settings related to Capillaroscopy examination. This includes being able to add up to seven additional database fields. It is advisable to consider this when beginning to use the program as new fields cannot be applied to existing patient records.

**Database path:**

Standard Patient Database is saved under local user folder. If you wish to save the database under a network drive, select the right path. However, to avoid losing data, you need to ensure the network communication in your IT environment is fast and stable. It is not recommended to save the database on an external device like USB hard disks.

**Additional Information for Patient:**

If you wish to add additional patient data than Name, Surname, ID and Data of Birth, select Show/Hide button and check the Add boxes. Note well that the added new fields are applied only to subsequently created patients, i.e they are not retroactive.



Note that additional fields are only created on the current computer installation and that if a database containing extra fields is opened on another computer running the CAP Pro software, the same additional fields must be added to the installation on second computer.

**Notes Titles:**

Title of standard patient notes can be edited and changed if desired. Besides saving in patient file database, these notes can also be printed on examination report in PDF format.

The screenshot shows the 'INSPECTIS Preferences' dialog box with the 'Capillary Preferences' tab selected. The 'Capillary Database Preferences' section shows the 'Database Path' as 'C:\Users\insaes\Documents\inspectisDatabase\' with a 'Choose Path' button. Below this are 'Additional Information for Patient' and 'Notes Titles', each with a 'Show/Hide' button. The 'Modify:' section contains three text input fields labeled 'Anamnesis', 'Status', and 'Actions'. The 'Patient Information Titles' section has a 'Show/Hide' button. At the bottom, there is an 'Auto Registration of Counting Data' checkbox which is currently unchecked, with an 'Enable' label next to it. 'OK' and 'Cancel' buttons are at the bottom right.

**Patient Information Titles:**

You can edit the standard titles of patient data (Name, Surname, ID and Data of Birth) under Patient Information Titles.

This screenshot is similar to the previous one but shows the 'Patient Information Titles' section expanded. The 'Show/Hide' button for 'Patient Information Titles' is now highlighted. Below it, the 'Modify:' section contains four text input fields labeled 'Name', 'Surname', 'ID Number', and 'Date of Birth'. The 'Auto Registration of Counting Data' checkbox remains unchecked. 'OK' and 'Cancel' buttons are at the bottom right.

If you wish the software to automatically register the Capillary counting data in patient file, check the Enable box.

## Device Settings

### Selecting Device

The software normally finds the installed Inspectis device and automatically sets the optimal device settings when starting the program. INSPECTIS software displays available device names on the status bar:




**Capillaroscope** (older devices are displayed as **Inspectis USB3.0 DM**)

**CapiScope**

**DigiScope** is displayed as GENERAL - UVC

Should the software fail to indicate your Inspectis device select it manually.

To select a device manually from the list of available devices, click  under Device Settings group or right click **Device Name** on status bar of INSPECTIS as shown above. Right click on Device Name and select between available devices.

To automatically select your device, click  under Device Settings group. Software will search and select the available Inspectis device.

To restart your device while software is running, press F12 on your computer keyboard.

### Device Resolution

**Resolution** and **Format** (aspect ratio) of the live image can be set according to below table.



Default resolution for Capillaroscope and CapiScope devices is **2000x1500 pixels**. For regular usage the default format is recommended.

Default resolution for DigiScope is 1280x720 pixels.





## Selecting Magnifications

INSPECTIS CAP software features pre-defined calibrations for all available lenses supplied with the Capillaroscopy devices. There is no need for manual calibration even if re-calibration is possible via

**Magnification and Calibration** tool .

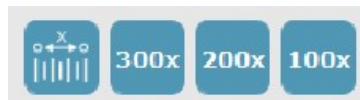
Since the Capillaroscope is supplied with the 200x lens as standard, default magnification is set to 200x. If the lens is changed to another type, the magnification must be set accordingly.

If no magnification is selected, the  icon is displayed. Left click on the icon and select  or other relevant magnification.

If your device is Capillaroscope the following pre-defined magnifications are available:




If your device is CapiScope the following pre-defined magnifications are available:

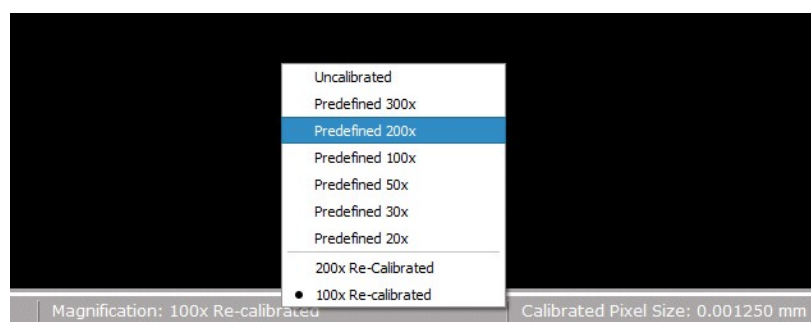


If your device is DigiScope the following pre-defined magnifications are available:



To select a Magnification, open the Magnification and Calibration Manager dialogue , select the desired magnification, and click OK button.


For quick selection of magnifications, right-click on the magnification in the INSPECTIS status bar and select the desired magnification.

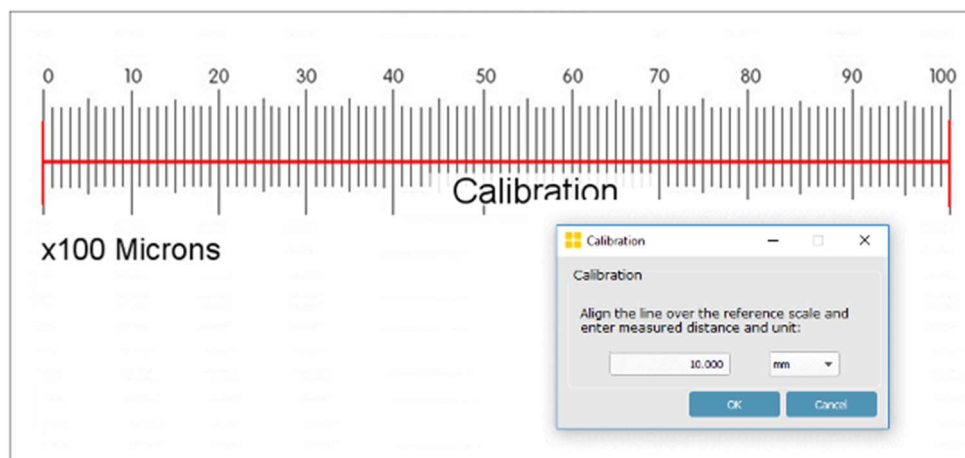


## Calibrating Magnifications

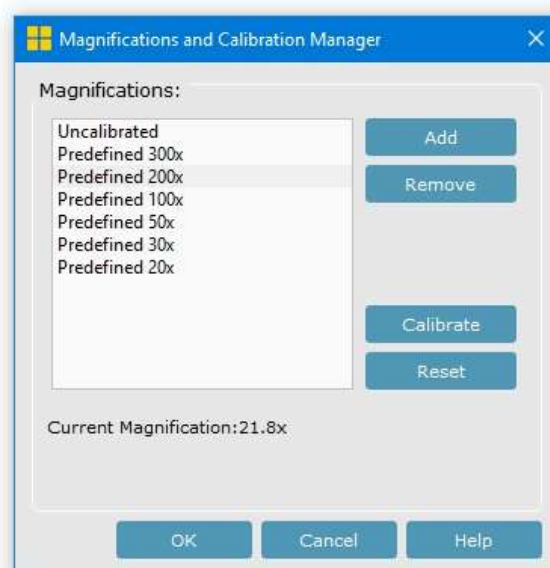
INSPECTIS CAP Basics software includes the pre-defined calibrations for all Capillaroscope devices and lenses. There is no need for manual calibration but re-calibration is possible under Magnification and Calibration tool if higher measurement accuracy is desired.

Before starting to calibrate a magnification, place an accurate ruler or micrometre scale under the

microscope and make sure the live image is on best focus. Click  under Magnifications icon group, select the desired magnification and click **Calibrate**. The live image will be frozen and calibration windows with a calibration line will appear.



Select, drag, and align both ends of the calibration line to the matching lines on the reference image. Type in the distance and select the unit (**mm** or **µm**) in the calibration window. If imperial units are selected in Preferences, imperial units (**inch**, **mil**) will be shown in calibration window. Click OK to finish the calibration process.

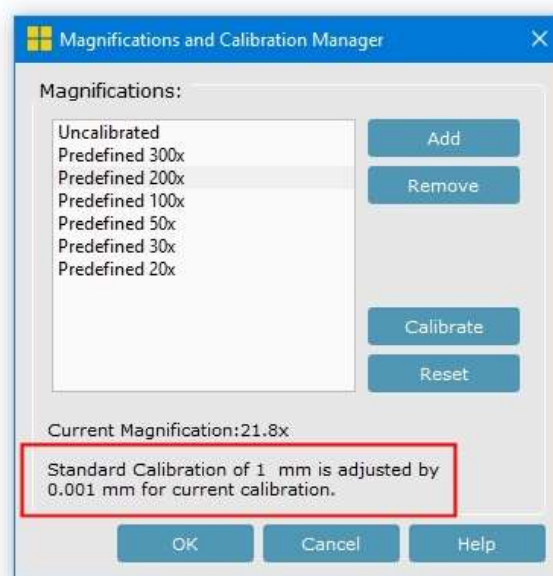


When you re-calibrate a factory-set Magnification, the new calibration will override the Standard Calibration. Information about how much the Standard Calibration is adjusted for this magnification is displayed below the magnification list on Magnification and Calibration Manager dialogue.

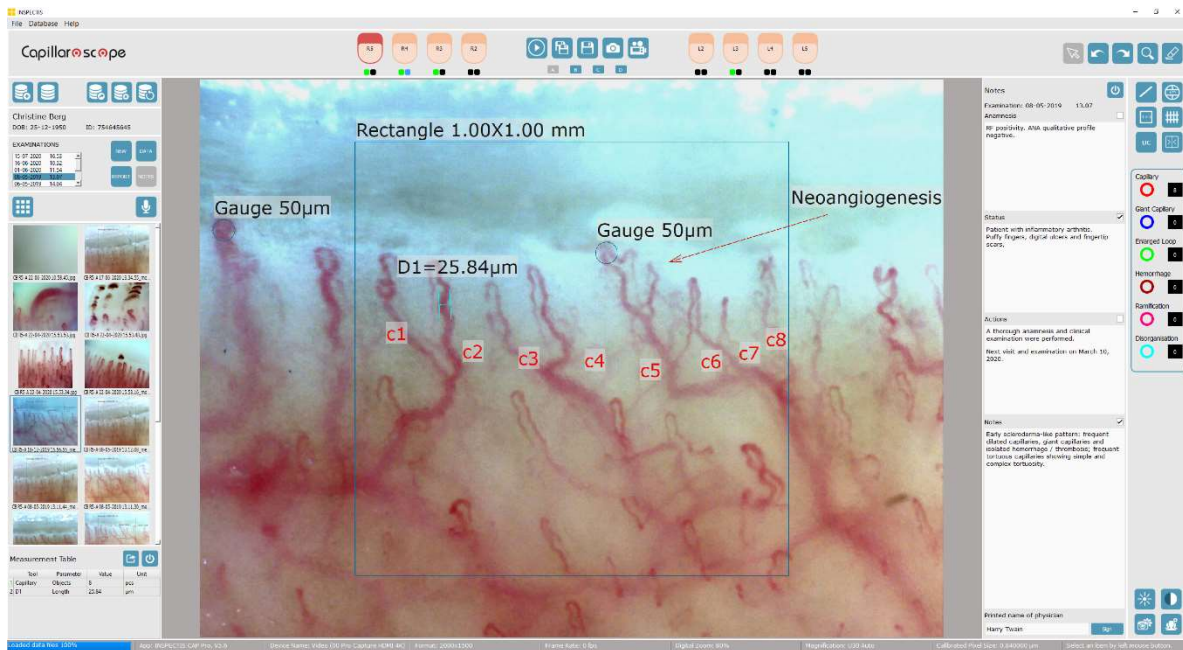
You may restore a custom-made re-calibration to factory set Standard Calibration any time by using **Reset**

Reset


button.



## Working with INSPECTIS Software



### Live Video and Still Images

INSPECTIS software automatically shows the live image on start. To pause the live image, click  or SPACE BAR.

To start the live image again click  icon or press SPACE BAR.

### Zooming

Both live and still images can be zoomed in and out digitally. Zoom functions are accessed by clicking



**Zoom In** [Shortcut Key: F4]




**Zoom Out** [Shortcut Key: F3]



**Zoom to Fit Screen** [Shortcut Key: F5]



**Full Screen** [Shortcut Key: F6]. To close the full screen view, press ESC or press the  icon


Digital zoom-in and zoom-out can also be done by the wheel of the computer mouse. Mouse cursor defines centre of the zoomed area. To pan the image when zoomed-in, press and hold the middle button of the mouse.

## Saving Images

To save an image, there are three options:



**Capture Live Image** [Shortcut Key: F11]. Captures a still image from live video of the connected device and saves it under current working folder as .png (default) or .jpg. Image will be automatically labelled with date and serial number. Use the .jpg format to limit database size over time.

If the live image is paused and there are measurements and overlays on it,  will only save the image without overlays and measurements.

Images can also be saved using middle-pedal of the footswitch.

Each captured image is automatically named, i.e. **JS L5-B 01-06-2011 14.39.19** where

**JS** *initials of the patient*

**L5-B:** *finger and position reference*

**01-06-2011:** *date as in format DD-MM-YYYY*

**14.39.19:** *time as in format HH:MM:SS*



**Save Image** [Shortcut Key: F10]. Saves the image, measurements, and overlays under the current working folder as .png (default) or .jpg. Image will be automatically labelled with date and serial number with "*\_measured*" suffix.



**Save Image As** [Shortcut Key: F8]. Saves the image with user specified name and folder.

Saving pictures in .jpg format is recommended as it helps reducing size of the database.


## Loading Images

To load a thumbnail image from the working folder, left click on it or right click and choose open. If the image contains measurements or counted categories, the results will be shown in a table below image thumbnail field.

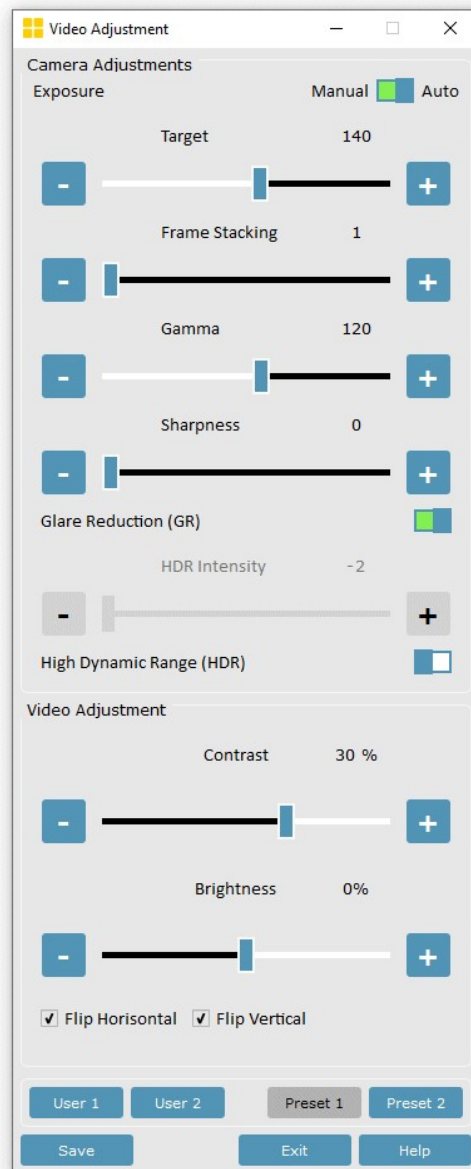
To load a video or a document from the working folder, double-click on it.

To load an image from another location, click "File/Open Image", then select the image to be opened.

## Image Adjustments

To adjust contrast and brightness of the image, click  icon. Depending on the connected device and whether it is in live or still image mode different adjustment windows will appear.

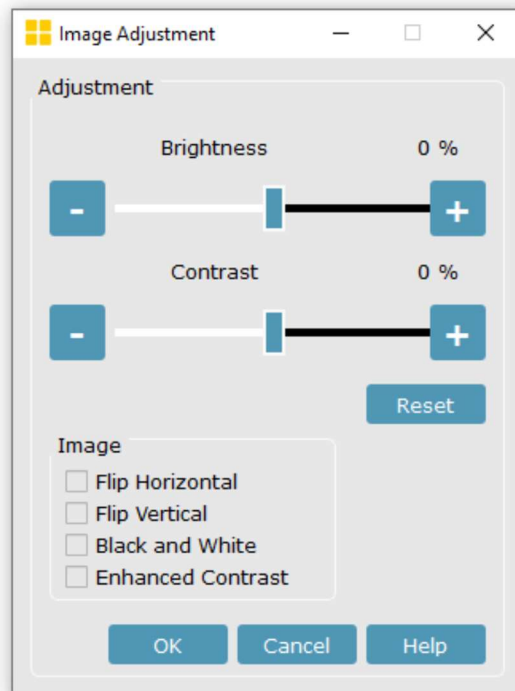
If your connected device is Inspectis Capillaroscope (Inspectis USB3.0 DM) and in live mode, the Video Adjustment dialogue will be according to below picture.



Two user-defined camera setups **User 1** and **User 2** are available. Camera attributes can be adjusted for producing best picture and saved as User 1 or User 2 anytime for future use.

Two pre-defined camera setups **Preset 1** and **Preset 2** are available. These Presets are factory defined and cannot be changed.

If image is still, user can change Brightness and Contrast value according to right-side above picture. Image Flip, Black & White and Contrast enhancement can also be applied to still images.



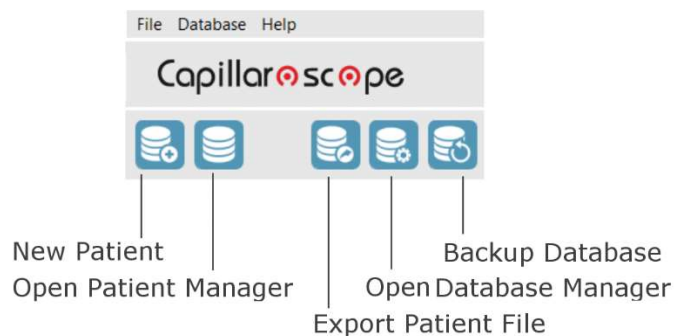
## Managing Patient Files and Databases



### Database and Security

INSPECTIS CAP Pro allows user to create, manage and archive patient journals and examinations for nail-fold capillaroscopy on a secure encrypted database. The provided USB dongle is the key to the database security. The database can only be accessed if the correct dongle is used. It is important to have a password-protected Windows login to the PC where the software is installed.

At program installation a default database is created named InspectisData which will be used unless another is created and selected: See Open Database Manager.


In INSPECTIS software Patient files and Databases are accessed via below shown buttons. This view is seen after selecting or creating a patient: See Open Patient Manager:



Click  or  to add a new patient and create a patient file. When a new file is created, a new examination is generated automatically with current Date and Time.

The 'Add Patient' dialog box contains the following fields and controls:

- Database:** A text field labeled 'Database Name:' containing 'InspectisData'.
- New Patient:**
  - Name:** A text field containing 'Marry'.
  - Surname:** A text field containing 'Watsson'.
  - ID Number:** A text field containing '19632101'.
  - Date of Birth:** Three separate text fields for 'Day' (21), 'Month' (01), and 'Year' (1973).
- Buttons:** 'OK' and 'Cancel' buttons at the bottom right.


The user will be prompted to back up the database periodically. It is highly recommended to back up the database regularly. A manual back up can be made at any time by clicking on .



Default Patient information fields are Name, Surname, ID and Date of Birth. Seven extra custom fields can be added to the Patient database. To learn how to add extra fields, refer to Preferences section.

All Patient files and data are saved in an encrypted database.

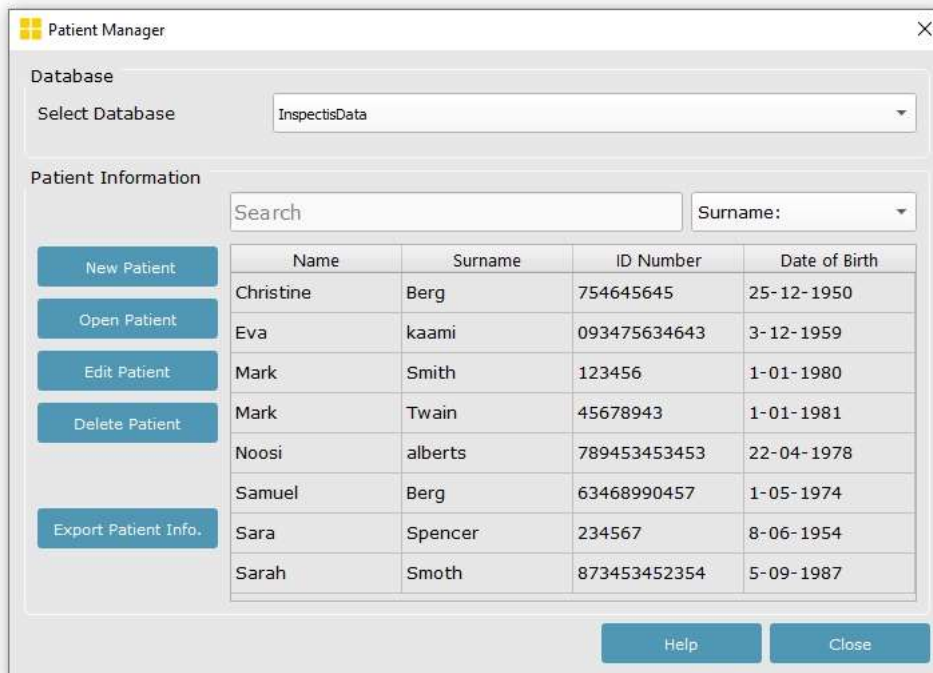
## Open Patient Manager

Patient Manager opens automatically when the software starts. It can also be opened by clicking  or from the menu " Database\Patient Manager".

When the software is restarted the last used database will open in the Patient manager. If desired, another data base that has been added can be selected from the Select Database bar. See Open Data Base manager.

Patient Manager allows the user to add new Patients and Open, Edit, Export or Delete Patient journal files.

Export Patient Info, will create an Excel table of all patients listed in the current Database.



The screenshot shows the 'Patient Manager' window. At the top, there's a 'Database' section with a 'Select Database' dropdown menu currently set to 'InspectisData'. Below this is the 'Patient Information' section, which includes a 'Search' text box and a 'Surname:' dropdown menu. On the left side of the patient list, there are five buttons: 'New Patient', 'Open Patient', 'Edit Patient', 'Delete Patient', and 'Export Patient Info.'. The main area is a table with four columns: 'Name', 'Surname', 'ID Number', and 'Date of Birth'. The table contains eight rows of patient data. At the bottom right, there are 'Help' and 'Close' buttons.

Name	Surname	ID Number	Date of Birth
Christine	Berg	754645645	25-12-1950
Eva	kaami	093475634643	3-12-1959
Mark	Smith	123456	1-01-1980
Mark	Twain	45678943	1-01-1981
Noosi	alberts	789453453453	22-04-1978
Samuel	Berg	63468990457	1-05-1974
Sara	Spencer	234567	8-06-1954
Sarah	Smoth	873453452354	5-09-1987

## Selecting or creating a new patient in a different database

If during use it is desired to pick or create a new patient in a different database, then the current database must be closed via the menu/ Database/ close database. Then reopen the Patient manager and select the desired database before selecting or creating a patient.

## Export Patient File

To extract a Patient file from the encrypted database and export it to your computer file system, click



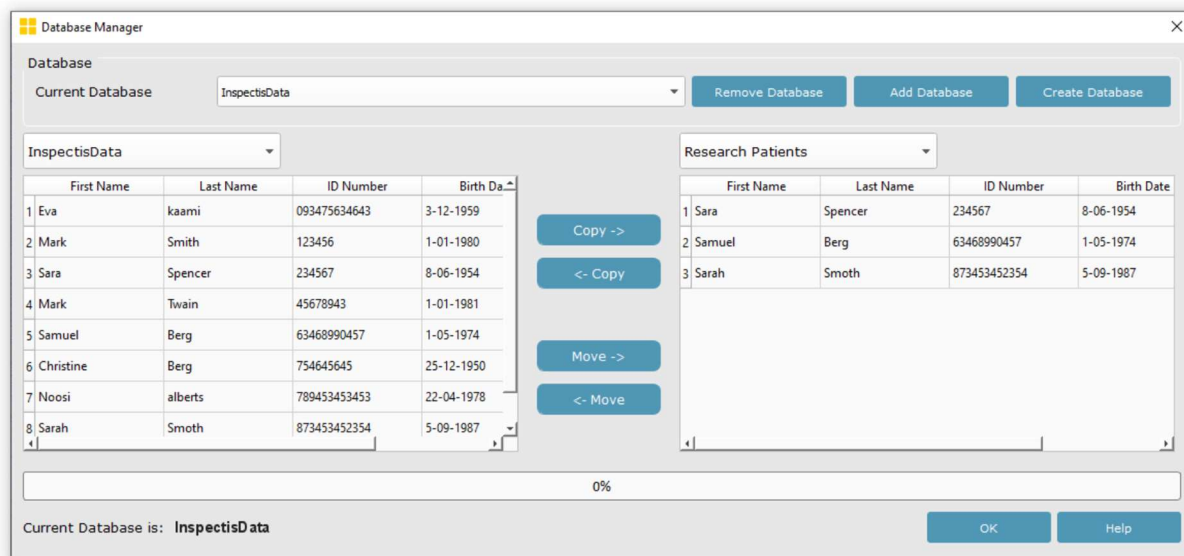
on All patient data, images and reports will be exported to a user-defined folder.

To export a single image, right click on image and click on Save As a Copy or click on .

## Open Database Manager

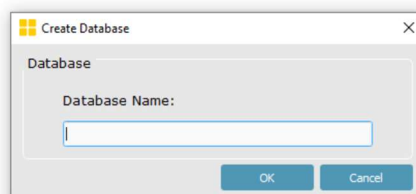


Click or select Database Manager from Database menu.



## Create a New Database

Click to create a new Database and connect it to the software. Insert Database name and select OK. INSPECTIS databases are normally saved under:  
C:/User/xx/Document/InspectisDatabase.



In the first run the software creates an empty database called InspectisData by default.

## Add Database

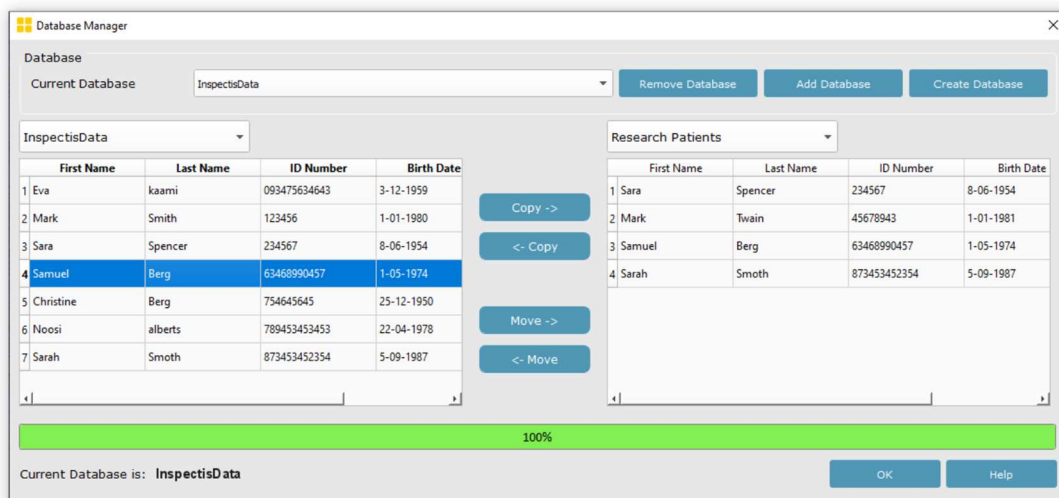
To add an existing database like a “backed-up” database to the software, click **Add Database**. Find and select the database file to open.

## Remove Database

To remove a database from the software, click **Remove Database**. Notice, a removed database is not deleted and can be added to the software later anytime.

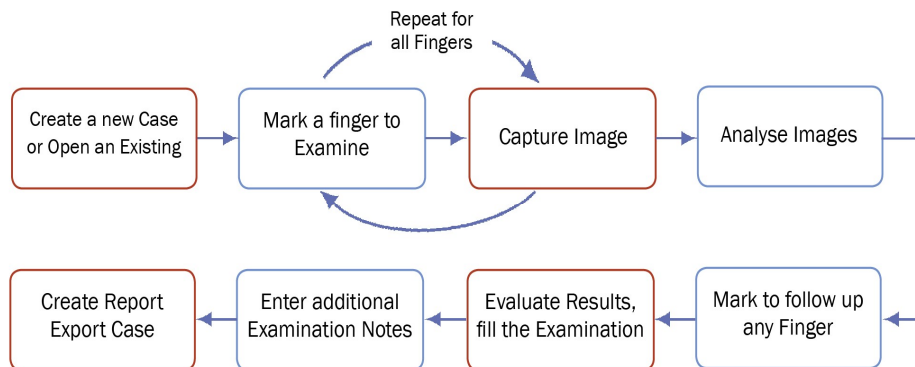
## Patient Data Interchange Between Different Databases

It is possible to Copy or Move Patients from a Database to another. Select the Databases you wish to copy or move to/from first. Highlight the patients you wish to move or copy and click **Copy** or **Move** to proceed. Multiple patients can be selected by holding the Ctrl or Shift on your computer keyboard. Notice it may take several minutes to transfer all data if several patients are moved or copied together.



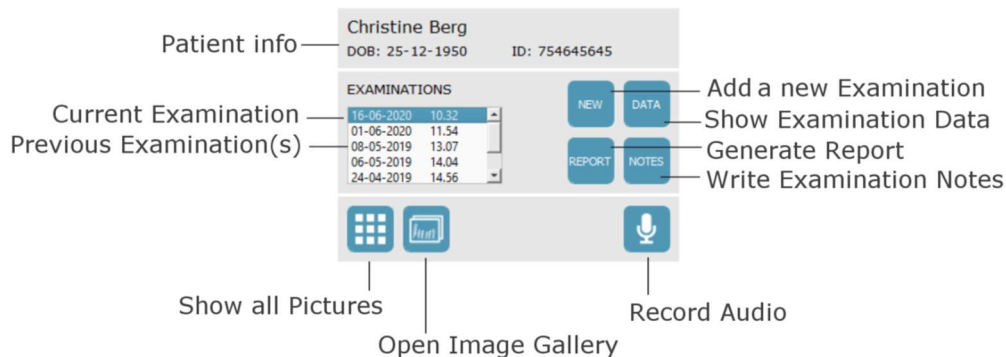
## Workflow of Capillaroscopy Examination

INSPECTIS CAP Pro software is designed to provide an efficient workflow for capillaroscopy examination. We suggest the following steps but there are no restrictions; the functions can be taken in any order that suits the operator or need best. Instructions relevant to the steps are flagged by the corresponding letters in the following sections.



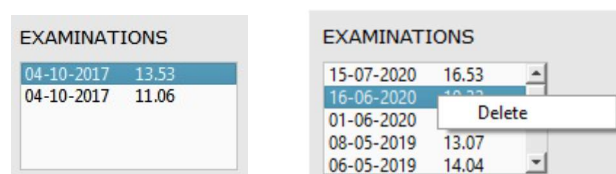
## Patient Examination

When a new Patient is added or a previous Patient file is selected, following information and tools will be presented.



If an existing Patient file is opened, all her/his previous examinations will be listed. Related pictures and data for each examination is loaded as soon as the Examination is selected.

**Add a New Examination** to the Patient file by clicking **NEW**.



**Notice** you can Delete an Examination by right click on the examination in the list and click delete.

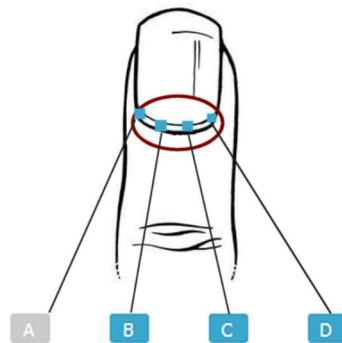
## Finger Map


The interactive finger chart helps users to navigate and organise, to capture and view images of respective nail folds. All related images and files are displayed as thumbnails in the thumbnail view for selected finger. You can toggle between fingers by mouse, by keyboard left/right arrows or by footswitch.

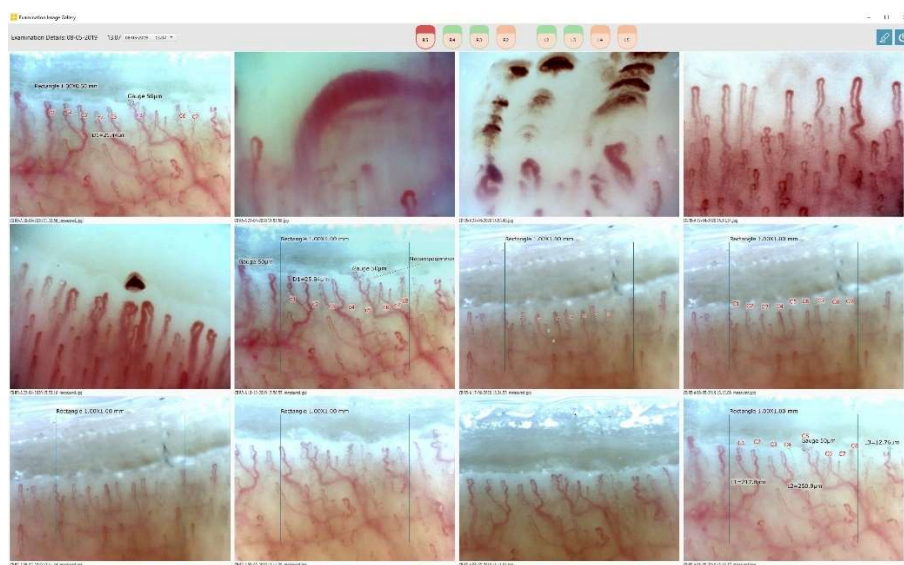


The red marked finger indicates the current selected finger. Green dots indicate examined fingers. A green dot below the finger map indicates whether a finger contains images. A dark blue dot indicates that the finger is marked for follow up and cyan colour indicates that the finger is being followed up from previous examinations.

The A, B, C, D position references allows you to indicate which part of the nailfold the capillary pictures you capture are related to.



All the images from current examinations of the current patient can be loaded to a gallery window by activating the Gallery Function. Activate / Deactivate the Gallery Function by clicking on .



## Capturing Capillary Images and Videos

Select a finger by clicking on the finger-map before capture images. A selected finger is high-lighted red.



Capture an image by clicking [F11] on your computer keyboard, pressing the foot pedal (middle if 3-pedal foot switch is used) or the image capture button of the Capillaroscope.

Switch to next finger and repeat the procedure. To quickly navigate between the fingers, [Page Up] and [Page Down] keys can be used. Home and End keys can be used to navigate between position reference.

Captured images are listed in image thumbnail filed and saved automatically into the current Patient examination.

## Following up a Finger

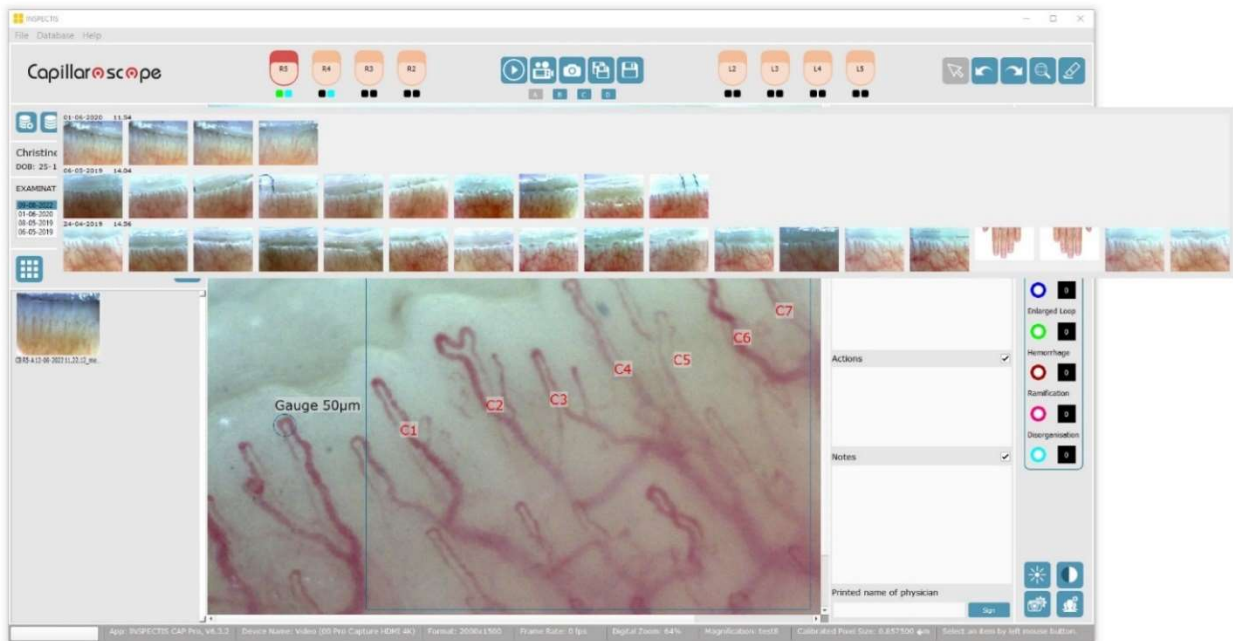
The user can mark any finger to follow up. Following up will enable the user to see images quickly that were taken in previous examinations, without opening them. Click on the right indicator of the finger to be followed up. The right indicator will turn blue.



To stop following a finger, click on the right indicator again.

When a new examination is created, the followed-up finger will be indicated with cyan coloured dot. When the cursor is moved on the indicator, the images from the previous examinations will be displayed. User can open an image or insert them in compare window by clicking on it.

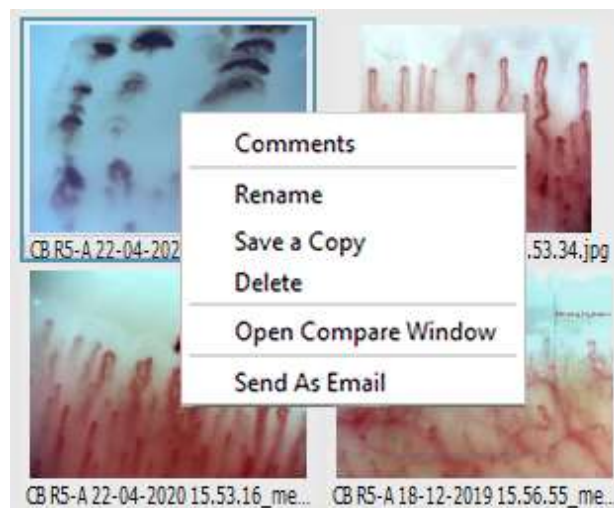
To display the thumb-nail images from previous examinations, hover and hold the mouse cursor over the follow-up blue indicator dot for a few seconds.



## Writing Comments for Specific Images


Comments and text can be written for a specific image by right clicking on the image and choosing “*Write Comments*”. A new window will be opened, where the user can write comments about the image.


Comments will also be part of the report if the image is exported to the report.





## Record Video

Click on  icon to start recording a video at .AVI format. [Shortcut Key: F9].

To stop the video recording press . [Shortcut Key: F9].


Recorded video file will be saved under the current working folder and automatically named with date and serial number.

Video compression level can be set to Low, Medium and High under Preferences. Low compression means better video quality but bigger video file size. Lossless does not apply compression. File size will be large, but video quality will not be reduced when Lossless is selected.

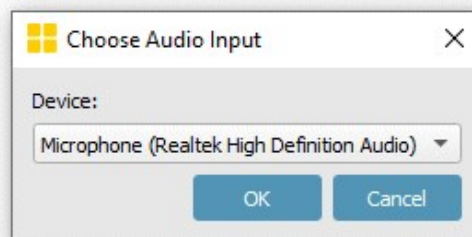
Video recording is time-limited to 3 minutes by default. Video recording time limit can be changed under Preferences.

To playback a recorded video, click on the video file, the default media player will start playing the recorded file.

## Record Audio

Click on  icon to start recording sounds or dictations at .WAV format. A microphone must be connected to your computer to record Audio. [Shortcut Key: F1].

Select your microphone and press OK to start recording audio.




To stop the video recording press  [Shortcut Key: F1].

Recorded audio file will be saved under the current working folder and automatically named with date and serial number. The specific audio device can be selected after clicking on record audio icon.

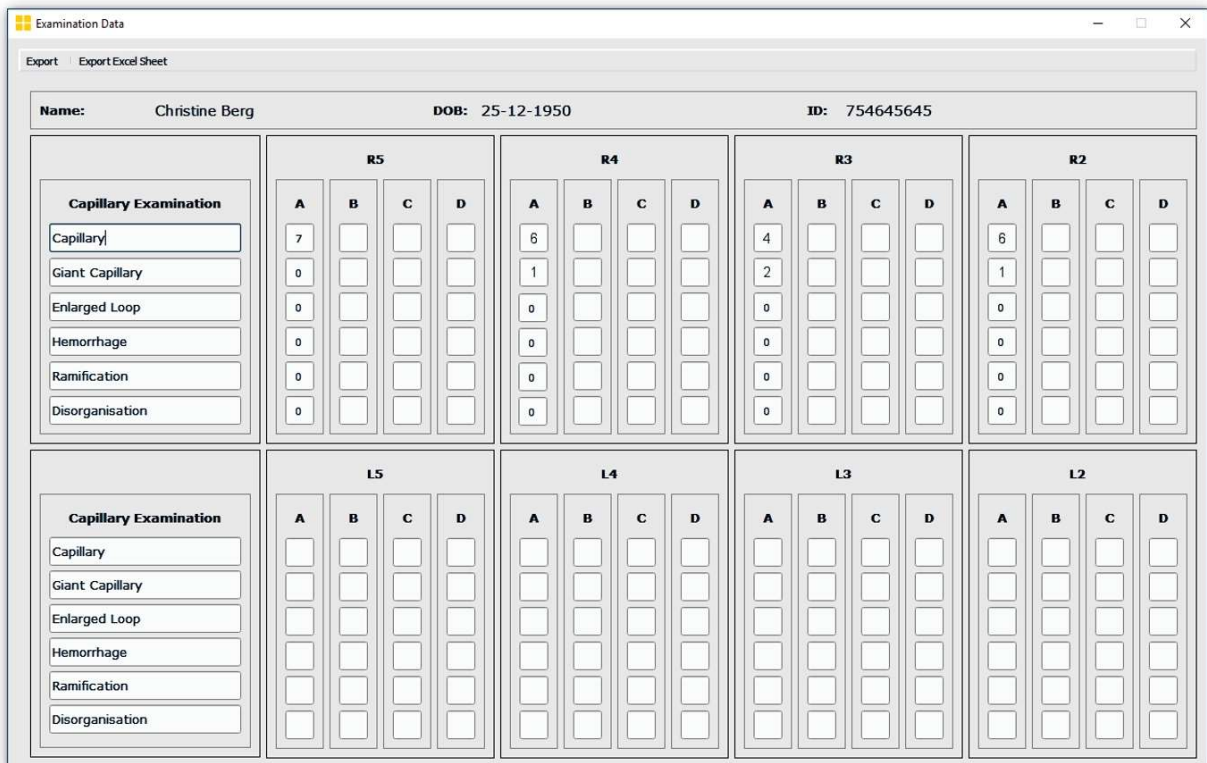


## Examination Data Table

To open the Examination Data Table, click on .

In the examination data table, results from counting of capillaries from all eight fingers can be filled manually or automatically in the different fields. The field titles picked up from the global category names that can be changed in the preferences. When a new image is saved, the counting information will be automatically inserted to the table if **"Auto registration of counting data"** is enabled at the System Preferences.

The system will automatically save the data once it is filled in.




The screenshot shows the 'Examination Data' window for a user named Christine Berg (DOB: 25-12-1950, ID: 754645645). The window contains a 'Capillary Examination' section with input fields for 'Capillary', 'Giant Capillary', 'Enlarged Loop', 'Hemorrhage', 'Ramification', and 'Disorganisation'. Below this is a grid of 80 small input fields arranged in 8 columns (A, B, C, D) and 10 rows (R5, R4, R3, R2, L5, L4, L3, L2). The 'Capillary' field is currently filled with '7'.

To export the data as a CSV or Excel file click to **Export**

To export the data to an existing Excel file, click to **Export Excel Sheet**

## Exporting an Examination

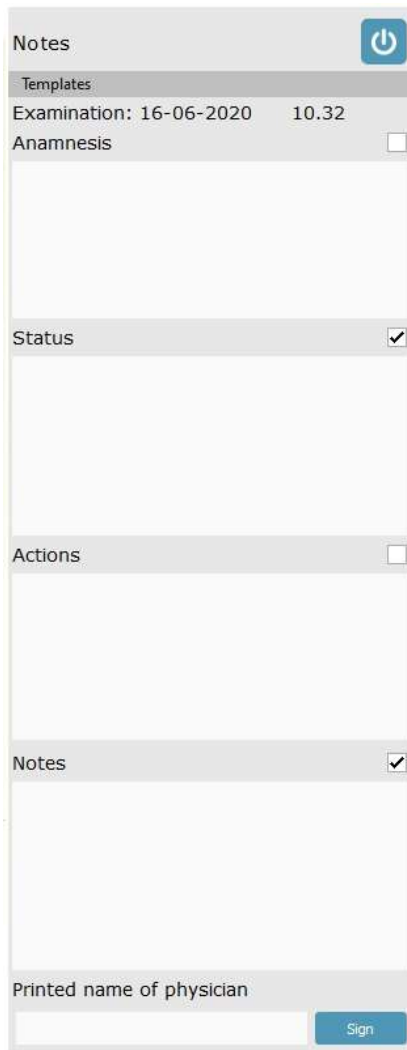
To extract and export an examination from the database, click on . All images, comments, examination data and reports will be exported to a user-defined folder.

## Examination Notes

To show the Notes click on 

The Notes consist of five predefined fields: Anamnesis, Status, Actions, Notes, Printed name of the Physician. Title of the fields can be edited in Preferences.

Written text will be saved and loaded automatically for each examination. By checking the boxes on top-right of each field, written text will be exported to the Report sheet. By clicking on the Sign button, the entire examination will be locked, and no further change can be done.



Notes

Templates

Examination: 16-06-2020 10.32

Anamnesis ☐

Status ☒

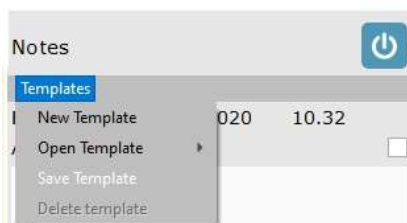
Actions ☐

Notes ☒

Printed name of physician

Sign

Notes can be saved as templates to be reused. To save note as a template with pre-defined text, click Templates -> Save Template.



Notes

Templates

- New Template
- Open Template
- Save Template
- Delete template

Examination: 16-06-2020 10.32

Anamnesis ☐

Status ☒

Actions ☐

Notes ☒

Printed name of physician

Sign

## Picture Gallery



Select Show Gallery icon to display and review all captured pictures referenced to each patient finger in current Examination on a new window.

Click on finger map on top of the window to show captured pictures for each finger. A selected finger is marked by red. Fingers containing pictures are marked by green.




Right-click on a gallery picture to add a Comment. Comments will be saved together with the pictures and be printed automatically on Reports.

Pictures can be renamed, saved as a copy, or be deleted permanently in Gallery. Add Counting data Examination Table if a capillary counting is performed on the current picture. Compare Window can be opened directly from Gallery. Selected pictures can be Sent as Email.

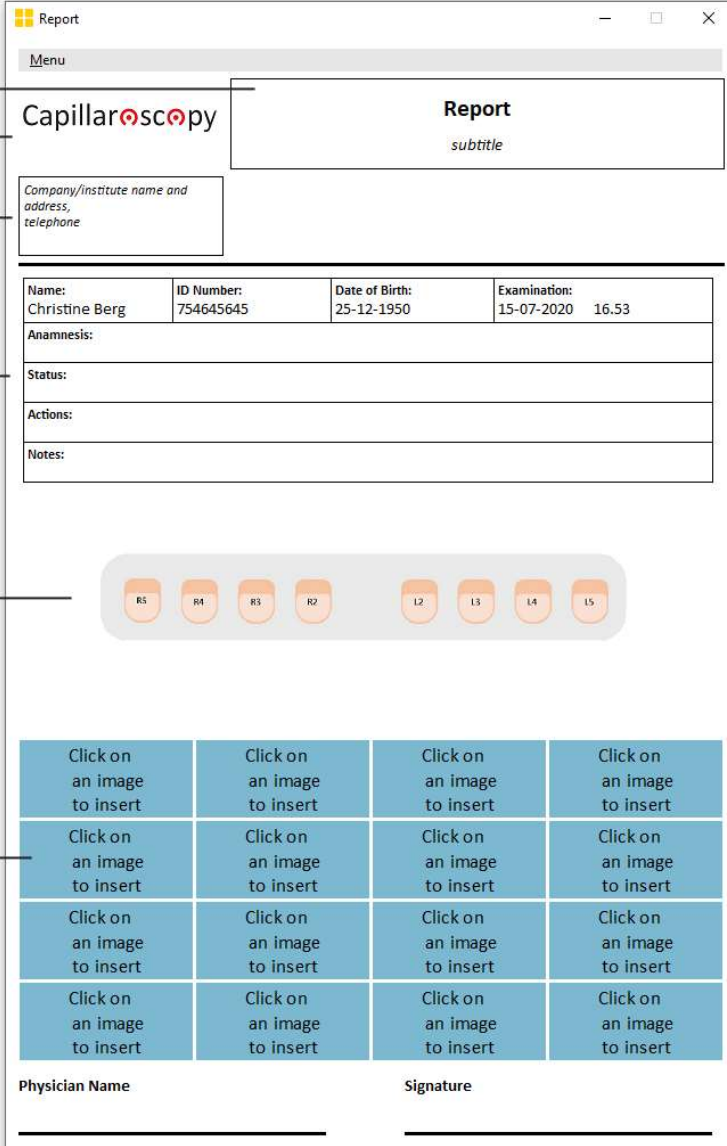


Multiple pictures can be selected by holding Ctrl-key and Left mouse click!

## Create Report

To start creating a report click .

Under Menu you can create a New Template including 16 or 32 pictures or Open and existing report Template. When the report is completed Save it as PDF or Send as Email.



The screenshot shows a 'Report' window with the following sections and labels:

- Report title:** Points to the 'Menu' bar at the top.
- Editable Logo:** Points to the 'Capillaroscopy' logo.
- Institute name and address:** Points to the text field containing 'Company/institute name and address, telephone'.
- Patient and examination details:** Points to the table containing patient information.
- Editable reference picture:** Points to the row of image thumbnails labeled R5, R4, R3, R2, L2, L3, L4, L5.
- Capillary image thumbnails:** Points to the 4x4 grid of buttons, each labeled 'Click on an image to insert'.
- Physician Name:** Points to the text field at the bottom left.
- Signature:** Points to the text field at the bottom right.

Name: Christine Berg	ID Number: 754645645	Date of Birth: 25-12-1950	Examination: 15-07-2020 16.53
Anamnesis:			
Status:			
Actions:			
Notes:			

**Title area:** Add title/subtitle to a report by clicking on the respective area.

**Logo area:** **Capillaroscopy** is displayed originally at this area. Left-click on the picture to replace it with your own logotype.

**Institute details:** Editable field to update organisation details. "Menu/Save Template" also saves company details.

Select **Menu** -> **Save** Template to save a template for future use. Institute details, logotype and other common information will be saved into the new template.

**Patient and Examination details:** Patient information and all written notes for the current examination will be automatically imported to this area if checkboxes are ticked. To adjust the text in these fields, press

NOTES

under patient Examinations.

Check box for adding  
Anamnesis to the Report

Check box for adding  
Status to the Report sheet

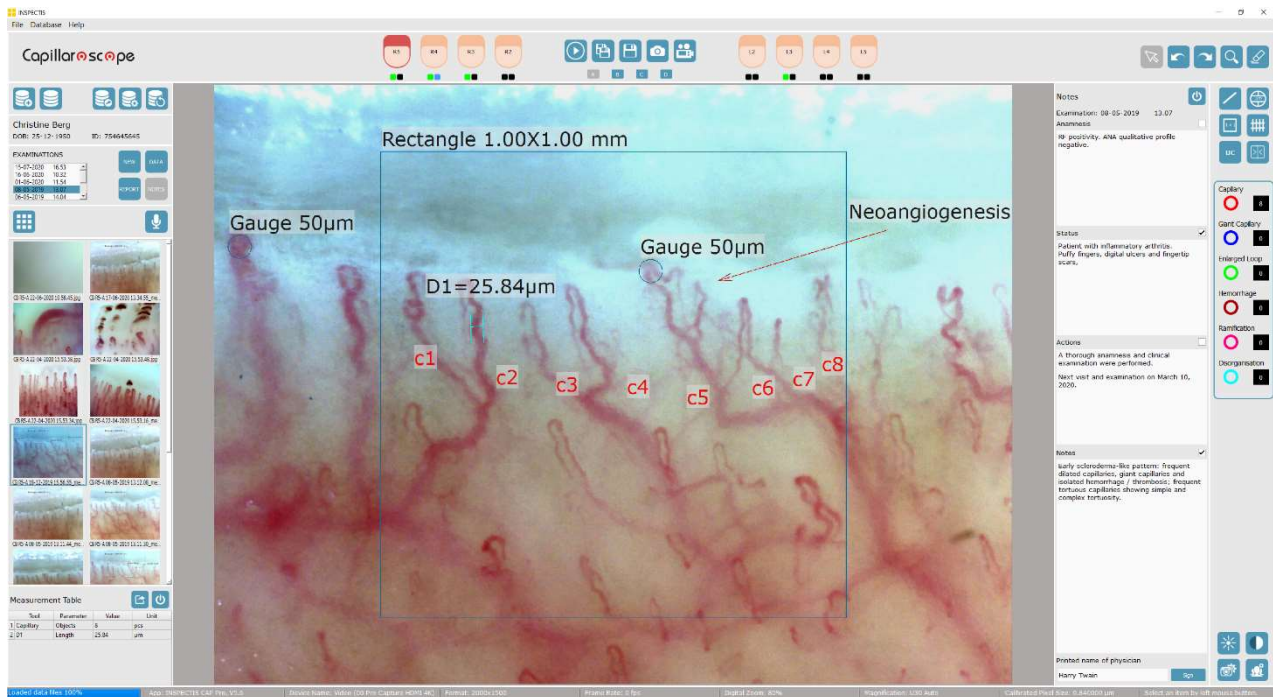
**Reference picture area:** Reference finger map is displayed originally at this area. Left-click on the picture to replace it with your own picture. Right-click to delete.

**Capillary image thumbnail area:** Click on an image in the thumbnail view to include it in the report. Right click to remove the image. A reference or set-up image can also be added.

Click **Menu** -> **Save As PDF** to save a PDF copy of the report. Click **Send as Email** to email the report in a PDF format. A high-resolution copy of the selected thumbnail images including Comments, Measurements and Examination Data will be automatically exported and printed on the report. A PDF reader must be installed on the PC to view the reports.

To export a single image, right click on image and click on **Save a Copy** or click on .

## Analysing Nail-fold Capillary Images



### Reference Overlays

Before starting the analysis of capillary images, it is recommended to set in place a reference 1x0.5mm rectangle or 1x1 mm grid.



**Rectangle:** Left click to activate/deactivate the rectangle on the screen. A new window will appear to input the width and height of the rectangle in mm or inches on the first time activating the rectangle. Right click on the icon to change the rectangle size.

To move the rectangle, click on it and drag to the desired location.

To move the rectangle to its original centre position right click and Reset Rectangle.



**Grid:** Left click to activate/deactivate the grid on the screen. A new window will appear to input the size of the grid on the first time activating the rectangle. Right click on the icon to change the grid size.

To move the grid, click on it and drag to the desired location.

To reset the grid to the centre of image field, right click and select Reset Grid.

Thickness and colour of the rectangle and grid can be changed in [Preferences](#).

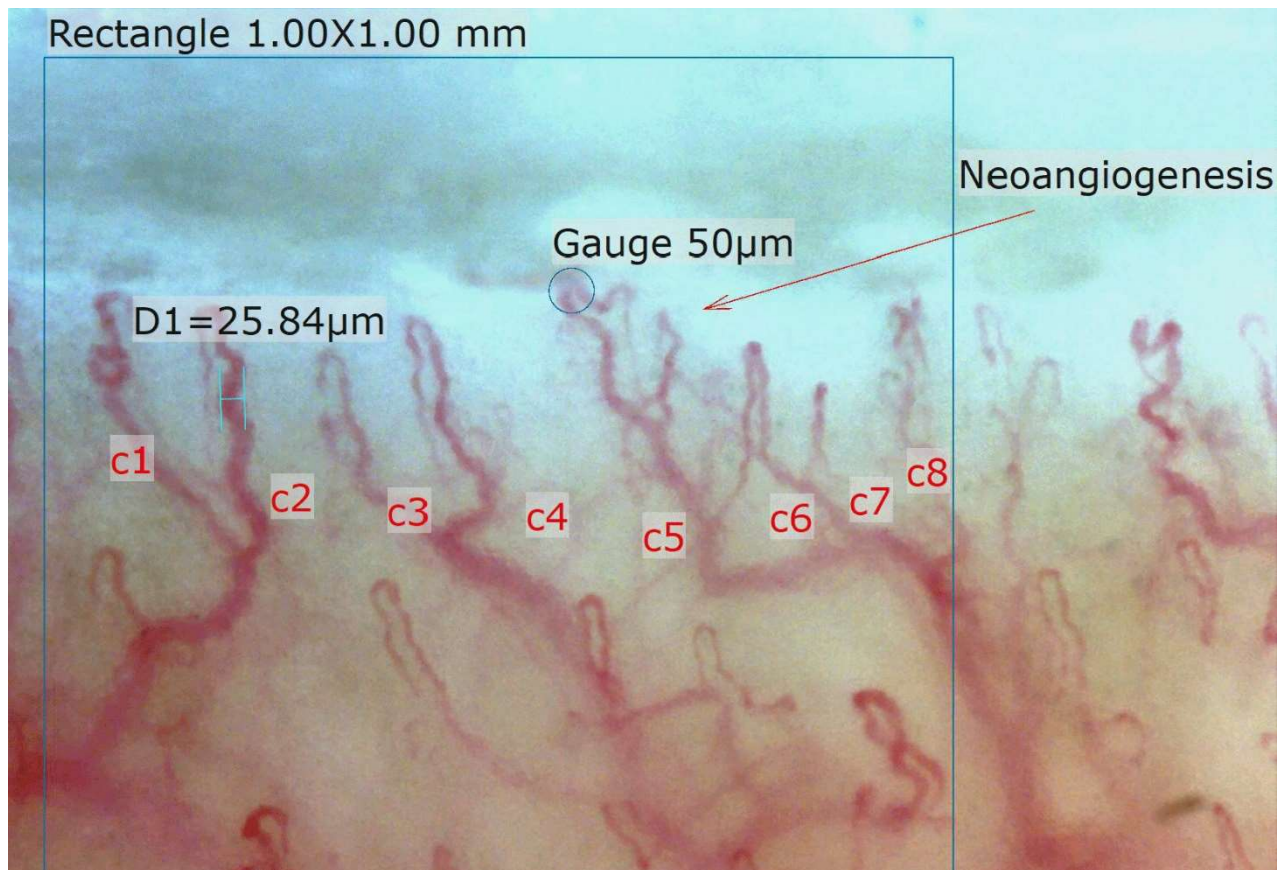
To move the grid to its original centre position right click and Reset Grid.




## Assessing Capillaries


There are several ways to make measurements on the picture. It is possible to measure distances, radius, curve length, areas and angles.



To select a measurement tool right click on the current icon on the right menu bar. Measurement Tool Menu will pop-up. Left click on the desired tool.




To activate the tool for measurement left click on the current measurement tool  icon. To start measuring click and hold the left mouse button and drag to draw on the image. See instructions for each measurement tool.

The measurement value will be displayed dynamically while being made.

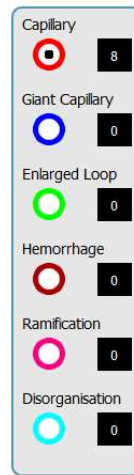
**Select Tool**  will be activated automatically after completing each measurement.

All measurement actions can be undone or redone using **Undo**  and **Redo**  respectively.

To clear all items, click on .

## Counting Capillaries

Choose the desired category from the counting view and count objects on the image by clicking on them. The counted object will be marked with the first letter of the selected category followed with the current count. The names of the preset categories can be changed from File\Preferences.



## Measurement Tools

Font size, line thickness and colour of measurements and annotation can be changed in Preferences.



**Gauge:** Left click to activate/deactivate the gauge on the screen for quickly assessing if a capillary has a diameter greater than a defined value. A new window will appear to input the value of the gauge (default 50μm) on first time activation of the tool. To move the gauge, click on it and drag to the desired location. Right click on the icon to change the gauge size.



**Distance:** Measure a linear distance. Press and hold the left mouse button and drag to draw a line from A to B on the image, release the button and extend measurement leaders to desired position and click to finish.

Press and hold Ctrl key on computer keyboard to make Horizontal or Vertical Distance measurements.

To adjust position and angle of measurement lines, text and leaders select  and:

Click and drag end of measurement lines to change position and angle.


Click and drag leader or arrows to adjust height of measurement lines.

Click and drag measurement lines to move all.

Click and drag the text box to move.





**Distance with Leaders:** Measure a linear distance with extendable leaders. Press and hold the left mouse button and drag to draw a line from A to B on the image, release the button and extend measurement leaders to desired position and click to finish. Select  is enabled after each measurement.

Press and hold Ctrl key on computer keyboard to make Horizontal or Vertical Distance measurements.

Click and drag end of measurement lines to change position and angle.

Click and drag leader or arrows to adjust height of measurement lines.

Click and drag measurement lines to move all.

Click and drag the text box to move.



**Free Form Distance:** Measure a free form distance. Click the left mouse button and drag to draw multiple lines from A to B on the image. Double click to finish the measurement. Select down line corners or line end to adjust their position. Select lines to move all.



**Curve:** Measure a length of curve by drawing a curve in the picture.




**Area:** Measure an area by drawing the perimeter of the area. The area will close when releasing the mouse button.

Font size, line thickness and colour of the measurements can be changed in [Preferences](#).

Number of displays measurement value decimals can be changed in [Preferences](#).



**Polygon:** Measure a polygon by selecting polygon's corners.

To fine adjust a drawn polygon, activate Select tool  and:

Click and drag corners of the polygon to move to a new position.

Select inside the polygon to drag to a new position.

When a new polygon is drawn inside another one, their size ratio is calculated and displayed in the measurements table.

## Annotation Tool




**Annotation with Line:** Draw the line and a text window will appear. Write a text or leave it blank to just draw a line. To annotate only a text, just click instead of drawing a line. To change the annotation line, activate the select tool and click on one of the ends and drag to desired location.

Font size, line thickness and colour of annotation can be changed in Preferences.


## Saving Measurements

After completing the measurement, the results may be saved by same ways saving a still image. The measured image and info file will be saved together, with all the calibration information and the all the measurement results. All the saved measurements are part of the image and cannot be changed as they are burned into the image.


## Comparison Tools




Left click on the Compare Menu Icon  and left click on the desired tool to activate/deactivate.



**Compare Images:** For comparing up to 4 captured images click to the  icon. To add an image to compare window click on the thumbnail at working folder or drag the thumbnail and drop it onto one of the views in the compare window. To remove an image right click on it with the mouse.

To zoom in/out and/or rotate images, top left controls on the individual views can be used. Press and hold the left mouse button and drag to pan the images.


To enable synchronized zooming, rotating and panning click  icon.

To switch between, one, two or four image view, press , ,  icons respectively.



**Compare Live Images:** Left click to run compare live window. Left view will display live image of the digital microscope and right view will be used for reference still image. To add a reference image, click on the image thumbnail in working folder or drag and drop the image onto the compare window. It is possible to activate reference tools (Crosshair, Rectangle, Grid and Ruler) on the live image.

To zoom in/out images, top left controls on the Compare Live Image can be used. Press and hold the left mouse button and drag to pan the images.

To enable synchronized zooming and panning click  icon.

## Shortcut Key List

---

Following quick-access shortcut keys (Hot-keys) are available in INSPECTIS CAP Pro:



**Save Image** [Shortcut Key: **F10**].



**Save Image As** [Shortcut Key: **F8**].



**Capture Live Image** [Shortcut Key: **F11**].



**Save Video** [Shortcut Key: **F2**].



**Play/Pause Video** [Shortcut Key: **Space**].



**Zoom In** [Shortcut Key: **F4**].



**Zoom Out** [Shortcut Key: **F3**].



**Zoom to Fit Screen** [Shortcut Key: **F5**].



**Full Screen** [Shortcut Key: **F6**].



**Clear all Items** [Shortcut Key: **Ctrl+Del**].



**Undo** [Shortcut Key: **Ctrl+Z**].



**Redo** [Shortcut Key: **Ctrl+Shift+Z**].

Camera Controls:



**User 1, 2** [Shortcut Key: **1, 2**].



**Preset 1, 2** [Shortcut Key: **3, 4**].

**Reset and Restart Camera** [Shortcut Key: **F12**].

## System Requirements

---

### Minimum System requirements:

Component	Minimum specification
CPU	Intel Core i5, CPU @ 2.5 GHz or faster
Operating System	Windows 10/11 (x64 version Professional, Enterprise)
Memory	16 GB or higher of RAM
Hard disk	200 GB of Free Space
Display	Laptop: 15.6" / 1920 x 1080 (Full HD) PC: 24"-27" / 3840 x 2160 (4K)
Ports	One USB 3.0 or USB3.1 or USB3.2 port (5Gbit/s) Two USB 2.0 port

### Recommended computers by Inspectis:

- **Station:** HP Workstation Z2, Intel Core i7, 16 GB RAM
- **Laptop:** DELL Latitude 3520, Intel Core i7, @ 4.8 GHz, 8 GB RAM 15.6", Full HD  
HP EliteBook, Intel Core i7, @ 4.2 GHz, 8 GB RAM 15.6", Full HD

---

All rights reserved. The information contained herein is designed only for use with Inspectis AB's systems. Inspectis AB is not responsible for any use of this information for other purposes. Inspectis ABs shall not be liable to the purchaser of this product or third parties for damages, losses, costs or expenses incurred by the purchaser or third parties as result of: accident, misuses or abuse of this product or unauthorized modifications, repairs or alternations to this product, or failure to strictly comply with Inspectis AB's operating and maintenance instructions. Inspectis AB shall not be liable for any damages or problems arising from the use of any options or any products other than those designated as original Inspectis AB products or products by Inspectis AB. Inspectis AB shall not be held liable for any damages resulting from electromagnetic interference that occurs from the use of any interface cables or devises other than those provided by or designated as Inspectis AB- approved Products by Inspectis AB.

**INSPECTIS© CAP Pro is developed by Inspectis AB**



Email: [info@inspect-is.com](mailto:info@inspect-is.com)

Web: [www.inspect-is.com](http://www.inspect-is.com)