

SOPRO
imaging
Medical

USER MANUAL



ENGLISH

CONTENTS

1	PRESENTATION	3
2	IMAGING SOFTWARE AND CAMERA DRIVERS INSTALLATION	4
3	FIRST STARTING OF THE CAMERA AND OPTIMIZATION OF THE IMAGE	5
	3.1. THE PATIENT MENU	
	3.1.1. NEW : CREATE A NEW PATIENT FILE	
	3.1.2. SEARCH : SEARCH A PATIENT FILE	
	3.1.3. MODIFY : MODIFY A PATIENT FILE	
	3.1.4. DELETE : DELETE A PATIENT FILE	
	3.1.5. NEXT / PREVIOUS : REACH THE NEXT OR PREVIOUS PATIENT	
	3.1.6. PATIENT FILE ID MODIFICATION	
	3.2. THE DOCTOR MENU	
	3.2.1. NEW : CREATE A NEW DOCTOR FILE	
	3.2.2. CHOOSE : SELECT A DOCTOR FILE	
	3.2.3. MODIFY : MODIFY A DOCTOR FILE	
	3.3. THE CAPTURE MENU	
	3.3.1. COLOR IMAGES	
	3.3.2. MOVIES	
	3.4. THE HELP MENU	
	3.4.1. HELP INDEX : SOFTWARE HELP ONLINE	
4	IMAGES MANAGEMENT	11
	4.1. IMPORT AN IMAGE	
	4.2. EXPORT AN IMAGE	
	4.3. DELETE AN IMAGE	
	4.4. DUPLICATE AN IMAGE	
	4.5. SEND AN IMAGE BY MAIL	
	4.6. PRINT ONE OR SEVERAL IMAGES	
	4.7. GENERATING REPORTS	
	4.8. INSERTING PREDEFINED COMMENTS	
	4.9. HIDING OLD IMAGES	
5	VIDEO TOOLS	15
	5.1. RECORDING A VIDEO SEQUENCE	
	5.2. PLAYING A VIDEO SEQUENCE	
	5.3. FRAME CAPTURE	
	5.4. CONFIGURATION OF THE USB PEDAL	
	5.5. FULL WINDOW AND FULL SCREEN	
	5.6. READING SEVERAL VIDEOS IN SUCCESSION	
	5.7. RECORDING AUDIO COMMENTS	
6	ACTIVATION & LICENCE	18

PRESENTATION

The imaging software is the user interface between the system and the camera. It is a multiple-purposes program that allows you to acquire, process, and archive images and video clips taken with the camera.

 **NOTE**

The imaging software needs to be activated. Please refer to the « ACTIVATION & LICENCE » section for more information about the software registration.

 **NOTE**

This chapter describes the imaging software and explains how it works. To comment the different functionalities and their effects on images, we will use the images held in the test patient file «Demo Patient».

Start the imaging software by clicking on the shortcut icon available on the desktop or click on the menu Start > Programs > Imaging software in order to run the program, and then select the test patient file for Demo Patient by double-clicking on his name.


Minimum System Requirements	Recommended System Requirements
Operating system: Windows® XP Pro SP3	Operating system: Windows® 7 Pro SP1
Processor: Intel® Pentium IV - 1.3 GHz	Processor : Intel® Core 2
RAM: 512 MB	RAM: 2 Go
Hard disk: 250 GB	Hard disk: 320 Go or more
USB ports: 2 USB2.0 Hi-Speed ports	USB ports: 4 USB2.0 Hi-Speed ports
Graphic card: 32 MB unshared memory compatible DirectX 9.	Graphic card: Chipset Nvidia® or ATI® / 512 MB unshared memory compatible DirectX 9.
USB Chipset: Intel or NEC® / RENESAS®	USB Chipset: Intel or NEC® / RENESAS®
Screen resolution: 1024 x 768	Screen resolution: 1280 x 1024 or more

IMAGING SOFTWARE AND CAMERA DRIVERS INSTALLATION

- Insert the installation CD-ROM, an installation module appears.
- If the installation window does not appear automatically, go to the menu Start > Run.
- Type D:\setup.exe (replace D with the letter of the CD-ROM drive, as appropriate) and click on OK.
- After clicking on “Install selected items” , the configuration control window appears so that you can control it. If negative points appear, contact the technical service.
- Once the positive control is over, click on “Ok” to continue the installation.
- Plug the camera to the PC.
- A window for the installation of the driver appears.
- Indicate "Install the software automatically" and continue the installation.

FIRST STARTING OF THE CAMERA AND OPTIMIZATION OF THE IMAGE


i Considering the disparity of the PC video performances, it is peremptory to adapt the adjustments of the system (graphic card, screen...) to obtain the best image quality. This operation must be done once at the installation of the camera.

- > Plug the camera to the PC, connect the endoscope, the light cable and launch the light source
- > Start the software
- > Click on File / Setup / Color images / Video source /
- > Then select USB 2820 Video
- > Click on File / Setup / Movie / Video source /
- > Then select USB 2820 Video
- > Videos can be compressed "on the fly" and can provide an OSD. To activate those functionalities, please select "ffdshow video Encoder" into the compressors' list and check the "On the fly compression" option.
- > Press on the  icon to start the video
- > Make an AWB by wrapping the endoscope in a white gaze in order to avoid any dark area on the image
- > Shift the resolution of the video to 720 x 576 (Go to File, Setup, Color images, capture pin)
- > Check that the brightness of the PC screen is at its maximum
- > Adapt the parameters of: Brightness/Contrast/ Saturation/ Sharpness in the following manner:
 - Go to File, Setup, Color images, Capture filter, Amp proc video
 - Adjust the contrast to have a bright image, without white saturation or noise. The black of the endoscope must be similar to the black of the software.
 - Adjust the brightness to have a bright and noiseless image
 - Adjust the saturation of the colors of the images to obtain realistic colors
 - Adjust the sharpness to enhance details without increasing the noise
- > If necessary, modify the adjustments of the monitor to adjust colors and brightness
- > Save the parameters and quit

i A mode "By default" is available to come back to factory settings. These values are kept and reloaded at each starting of the system.

3.1. THE PATIENT MENU

3.1.1. New: create a new patient file

To create a new patient sheet, enter the "Patient" menu then click on "New" or click on the icon  or hold down the "Ctrl" and "N" keys on your keyboard.

A window appears, enter civil status information about the patient in the requested fields.

To move from field to field, just position the cursor over the field into which you want to make an entry and then left-click once to activate the field.

IMPORTANT

It is mandatory to fill the "Last Name" and "First Name" fields. To enter the date of birth, a pre-formatted field allows entering the day, the month and the year of birth of the patient. Furthermore, a shortcut button «...» allows displaying a calendar.


The program automatically assigns a number to the patient file. This number corresponds to the chronological order of creation of the file in the patient database.

Once all fields contain an entry, click on "OK" to accept the file.

You can also enter the patient's age instead of the birthdate. The age will be calculated upon the base of the January, 1st of the current year when generating prints and reports.

A list of pathologies can be used to attach a specific pathology to the patient. When using it for the first time, this list is empty. It will be filled as the pathologies come in, for the future patients.

3.1.2. Search: search a patient file

Several ways to search a patient file ; click on the "Patient" menu then choose "Search" or click on the icon  or hold down the "Ctrl" and "O" keys on your keyboard:

Several possibilities are available to select a patient file:

- Enter the first letters of the last name or first name in the search filter box
- Then accept your choice by clicking on "OK", or by double clicking on the patient file selected.
- Alternatively, you can enter the patient's file number; select the patient's file from the dropdown menu (by clicking on it) and then click on "OK".
- Alternatively, select the patient's file from the dropdown menu by clicking on it, and then accept your choice by clicking on "OK".


Thanks to advanced search, it is possible to retrieve a patient using its SSN, date of birth and/or pathology. To activate it, click on the box provided. This option is retained from one search to another.

NOTE

By default, the patients list is always displayed. However, it is possible to hide it in order to protect patient confidentiality. You have to deactivate the option “Always fill the patient research list” in the setup panel, “Options” tab.

3.1.3. Modify: modify a patient file

There are two possibilities to modify a patient file that has already been created:

- Either by clicking on the "Patient" menu, then "Modify" or by clicking on the icon 
- Or by reaching the window “Search of a patient”, click on the “Patient” menu then “search”.

> Select a patient in the listing then click on “Modify”.

The patient's civil status record appears.

- > Modify the information, then click on «OK» to validate.
- > To integrate the patient's photo, the patient's file must already have been created, accepted and must be opened in modification mode. Next, click in the white area containing the instruction “Click here to select the patient's photo from his image folder”; a window opens.
- > Click once on the image to be incorporated in the patient's file - the selected label displays in yellow - and then accept your choice by clicking on "OK".

NOTE

The use of the function “Modify” available on the window of research of a patient file does not allow to modify the patient picture.

If you make a mistake when choosing the image, click on "Deselect image". The dialog box closes, and you can start the entire operation again.

Once the image has been retrieved, it displays automatically in the patient's file.

3.1.4. Delete: delete a patient file

To delete a patient file and all the images it contains, the file to be deleted must be opened and on-screen for consultation; then, open the "Patient" menu and select "Delete". Click on "Yes" to accept the deletion.



WARNING

Deleting a patient file is an irreversible operation, and permanently deletes any information the file contains. If the computer allows it, the images of this patient will be transferred to the trash.

3.1.5. Next / Previous: to reach next or previous patient

To reach previous or next patient (according the First Name), click on the "Patient" menu then click on "Previous" or "Next".

This function can also be reached via tools bar:

- The icon  reaches the previous patient
- The icon  reaches the next patient

3.1.6. Patient ID modification

This function assigns a new patient ID to a patient that has already been created. To do this, you should have the patient folder open, click on the "patient" menu then select "Patient ID modification".
A dialog box appears, assign a new patient ID.

WARNING

It is impossible to assign a patient ID that has already been created.

3.2. THE DOCTOR MENU

3.2.1. New: create a new doctor file

To create a new doctor, click on the "Doctor" menu and then choose "New".

A file displays; in this window, enter civil status information concerning the practitioner by making entries in the requested fields.

You can enter the following information items: the doctor's title, last name, first name and notes that can be several lines in length. Once you have entered this information, click on "OK" to accept the practitioner's file.

3.2.2. Choose: select a doctor file

The imaging software lets you create several doctors. To choose a doctor, click on the "Doctor" menu and then click on "Choose".

A window opens; select the doctor by clicking on the name, and then accept your choice by clicking on "OK".

NOTE

If only one doctor has been created, the software does not offer you any choice and no dialog box opens. Similarly, the software will not ask you to choose a doctor each time it starts.

3.2.3. Modify: modify a doctor file

To modify a practitioner file that has already been created, click on the "Doctor" menu and choose "Modify".

The practitioner's file appears.

Modify the information then click on «OK» to validate.


3.3. THE CAPTURE MENU

This menu lets you specify the source from which images will be taken. Click on Capture and on the selected function.

- For color images : choose “Color images”
- For video sequences : choose “Movies”
- For other sources (such as a digital camera, for example), choose TWAIN source.

3.3.1. Color images

Capture by “Color images” is used to acquire color images using a camera.


To access this function, click on the “Capture” menu then choose “Color images” or click on the icon  or press key “F10”:

The camera is now active

The PAUSE button freezes the image on screen, the PLAY button returns to live mode the STOP button reinitializes the video stream.

3.3.2. Movies

Capture by “Movies” is used to acquire video clips using a camera.

To access this function, click on the “Capture” menu then choose “Movies” or click on the icon  or press key “F11”

“Movie capture” is now active.

To start and end a video sequence, click on the icon 

If the “on the fly compression” option is deactivated, the film is compressed once the recording is done.

If the “on the fly compression” option is activated, the film is compressed while recording (please refer to the page 5 to configure this option).


WARNING :

During the very first movie capture, you must wait around 30 seconds before the first live image appears.

3.4. HELP MENU

This menu gives you access to certain information about the software: the online help, software updates via Update.

3.4.1. Help sections: Help online of the software

Clicking on "Help" and then "Help index" or click on the icon  opens the software online help system.

This action opens the software interactive help. You can also invoke this interactive help by pressing F1 from any point within the application.

IMAGES MANAGEMENT

4.1. IMPORT AN IMAGE

To do this, open the "Image" menu, and then select "Import".

A dialog box opens: browse to find where the image is located

To select and import several images in one single operation, hold the <Ctrl> key pressed and then click on each of the desired files.

To select several files that are listed in succession, click on the first file and then press and hold down the <Shift> key before clicking on the last file.

The image or images will display in the patient's image folder.

NOTE

Only files of the following types: JPEG, DICOM, PNG, PCX, TIFF, BMP, GIF, FMS, AVI, DOC, DOCX and PDF can be imported.

4.2. EXPORT AN IMAGE

To do this, click on the "image" menu, and then select "Export" or right-click on the label and select "Export". Many options are provided to the user when exporting:

- Default filename,
- Firstname_Lastname_#,
- Firstname_Lastname_#_on_Total,
- Firstname_Lastname_#_Date,
- Firstname_Lastname_#_on_Total_Date,
- Etc....

A dialog box displays. Choose the image(s) to export and then click on "OK"

NOTE

When an image is exported, its filters and drawings can be kept on condition that there is a check mark beside this option « Apply filters and drawings to exported images ».

A dialog box will open: choose the location where you want to save the image, and select the file format in which to save it (JPEG, DICOM, PNG, TIFF, BMP,). Only one image can be exported at a time.

Name the exported image, and then click on "Save".

NOTE

If two images are open, the image that will be exported first will be the last image viewed.

4.3. DELETE AN IMAGE

To delete one or more images, click on the "Image" menu then choose "Delete" or right-click on the label and select "Delete".

- Select the images you want to delete by clicking on them; the label(s) display in yellow. Then click on "Delete selected images".
- To select all the images, press the "Select All" button.
- To deselect all images, press the "Select none" button.
- To close this dialog box without deleting any image, press the "Keep All" button.

WARNING

The act of deleting images is irreversible, and will permanently delete all information pertaining to the said images. If the computer so allows, the images will be transferred to the trash.

4.4. DUPLICATE AN IMAGE

This feature is recommended for color images, and enables you to duplicate an image. It allows you to make before and after comparisons - mainly for the cosmetic field. You can only duplicate an open image.

NOTE

This feature lets you duplicate any kind of image apart from color images, but this is not recommended.

To duplicate an image, select and open the image you want to duplicate. Then, open the "Image" menu and choose "Duplicate" or right-click on the label and select « duplicate ».

The duplicated image is displayed right to the first image, it is absolutely identical to the original image (including having the same date), and is stored with it in the patient file.

4.5. SEND AN IMAGE BY MAIL

To send an image by e-mail, click on the "Image" menu, then on "Send by mail" or right-click on the label and select "Send by e-mail":

This operation opens a dialog box which allows you to select the images you want to send.


To unselect an image, left click the mouse; to unselect all the images, click on « Unselect all », then click on « OK » to validate your choice, a dialog box opens.

Now all you need to do is to enter the recipient's address and the object of the message before sending it.

NOTE

The e-mail contains the date, the location, and comments for each image.

4.6. PRINT ONE OR MORE IMAGES

To print one or more images, click on the "Image" menu then go to "Print" or click on the icon  or right-click on the label and select "Print" or hold down the "Ctrl" and "P" keys on your keyboard.


This action opens a dialog box.

The software handles page-setting automatically, and allows up to twelve images per page. It is possible to configure the number of images per page, to resize the images and to display comments by checking the box.

The images selected for printing are highlighted in yellow. To deselect an image, simply click on it once more. If some images are open, they will be pre-selected.

Click on "Print", and then click on "OK" to validate the printout.

4.7. GENERATING REPORTS

Reports can be generated in Microsoft Word 2010 format. To do this, click on the "Image" menu and then "Reports ... " or click on the icon 

Choose the images to print from the list of thumbnails offered, and then the report to use from the list of reports. The report is then automatically generated, saved, and displayed in the Word 2010 application.


It is possible to find this report by clicking on it in the list of thumbnails; Microsoft Word 2010 opens automatically and allows you to read the document.

The "Edit a Report" function in the "Image" menu allows you to modify or create a new report based on the template proposed. Please take note of the comments in the report template in order to find the points where data from the imaging software can be inserted.

4.8. INSERTING PREDEFINED COMMENTS

When an image is open, it is possible to add comments or insert them automatically.

Type the desired comments in the blue input area. To add a predefined comment, click on the  button.

A list of predefined comments can be managed by clicking on the  button. When the software is first used, this list is empty; it must be filled over time.

4.9. HIDING OLD IMAGES

Images for which the date is too old can be hidden temporarily.

In the "View" menu this filter can be applied for images aged less than:

- 2 years
- 1 year
- 6 months
- 3 months
- 1 month



or

- from the last examination

This filter is disabled on change of patient or when the imaging software is next launched.

VIDEO TOOLS

5.1. RECORDING A VIDEO SEQUENCE

Recording a video sequence is represented by the icon  when inactive and  when active.

This function allows to start or to stop a video sequence.

An OSD displays the recording time. When starting a "video sequence" the OSD displays "STOP 00:00:00". When recording the OSD displays a red dot followed with the recording time.

5.2. PLAYING A VIDEO SEQUENCE

The two icons below are used to read a video sequence and to make a pause during the movie.





The cursor is used to fast forward or rewind the film



Also, a "Slow Motion" command allows the user to read a video in 1/2nd / 1/4th or 1/8th of the original speed.



5.3. FRAME CAPTURE

The capture of an image during the video live or during the movie display is represented by the icon when inactive  and  when active.

It is also possible to capture an image with one of the button located on the camera head or with the USB pedal (See chapter 5.4 for the configuration of the pedal).

5.4 CONFIGURATION OF THE USB PEDAL

The leaflet of the USB pedal must indicate the type of shortcuts it generates (for example CTRL + ALT + B)

Open the "Shortcuts" tab in the file/configuration.

Select the "Frame Capture " or " Start movie capture" function in the combolist.

Press on the button corresponding to the USB pedal shortcut (for example CTRL + ALT + B) in the box "Shortcut for the command".

Press on "OK" to validate automatically the created shortcuts.

5.5. FULL WINDOW AND FULL SCREEN

The  icon is used to view a video / an image in full screen mode.

A double click on the window allows visualizing it in full screen mode.

Double click or press the ESCAPE key to leave the full screen mode.




NOTE:

It is not possible to save a movie in full screen mode.

5.6 VIDEO EDITING

A window for video editing can be invoked from the "Image" / "Video editing..." menu.

This icon is also available in the toolbar: 

This window displays a list of all the videos available for the current patient. Then, it is possible to:

- Chain many videos using the list selection,
 - Save the chained videos to a unique video file using the button "Record the sequence",
 - Select one video and cut in the beginning or the end of the sequence to create a shorter version of the film.
- Use the 2 orange arrows to define the starting and ending frames. Then, click the "record the sequence" button to save it.

5.7 RECORDING AUDIO COMMENTS

Open the "Films" tab in file/configuration.

Make sure that the compression format chosen is "ffdsnow video encoder".

Make sure that you are in "Compress on the fly" mode in the "Video compression format" selection list.

Choose an "Audio source" from the list and then adjust to the desired "Recording level".

In the event of the list being empty, please ensure that a microphone is present and properly connected to the computer.

Pressing the "OK" button automatically validates the choices made.

Launch a video recording in accordance with chapter 5.1 of this documentation.

ACTIVATION & LICENCE

The imaging software can be used for evaluation during 31 days ; then you need to activate it.

If your computer is connected to the Internet:

- Once the imaging software installation is complete, click “Help” / “Activation”.
- Fill in ALL fields marked with an asterisk (*) and enter the license number (beginning with #1) provided by your dealer. Then “Validate license”.
- To ensure that changes have been applied, close and restart the software.

If your computer is not connected to the Internet (manual activation):

- Once the imaging software installation is complete, click “Help” / “Activation”.
- Enter the valid license number (beginning with #1) provided by your dealer. Then “Validate license”. The activation code (beginning with #2) is displayed automatically. Note this code.
- Using any computer with Internet access, connected to the registration web site (the address is displayed into the activation window).
- Fill in ALL fields marked with an asterisk (*) and enter the activation code (beginning with #2) provided by your dealer. Then click “Register”.
- An activation key (beginning with #3) is displayed automatically. Note this activation key.
- Go back to your computer and start the imaging software. Click “Help” / “Activation” and enter this activation key. Click “Validate activation key”.
- To ensure that changes have been applied, close and restart the software.

 **NOTE:**

Any update to a major version of the software (eg: upgrading from version 2.10 to version 2.20) requires a new user licence.

 **WARNING**

- The user has 31 days to activate the software. During this period, the software can be used for evaluation.
- The activation key of the software is linked to the hard drive on which the database is stored.
- In the case of multi-users, only one license number is needed to activate the software on all the computers sharing the same database.
- The software must be activated only once the location of the database storage is definitely indicated in the setup.
- If the database is moved onto another hard drive or another network location, the activation key will no longer be valid.



Manufacturier : SOPRO ZAC Athélia IV Avenue des Genévriers 13705 La Ciotat cedex FRANCE
Tél +33(0) 442 98 01 01 - Fax +33 (0) 442 71 96 90 - E-mail : info@sopro.comeg-com - Web : www.sopro.comeg.com