Effective Date: 2023.02.09.
Version 1.0

Kinepict Medical Imaging Tool
User Manual

Version 6.0

Make X-ray angiography safer and more powerful!

CE
0197

Manufacturer's note:
This product bears a CE marking in accordance with the provisions of the Council Directive 93/42/EEC of June 14th, 1993 concerning medical devices.
The CE marking applies only to medico-technical products/ medical products introduced in connection with the abovementioned comprehensive EC directives.
The original language of this document is English.

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1 Introduction to the Kinepict User Manual

This document guides the new user through the first steps required to run the Kinepict Medical Imaging Tool. The purpose of this document is to help users accurately and efficiently evaluate X-ray angiography image data. The User Manual is also accessible at https://www.kinepict.com after registration.

1.1 Symbols

⚠ Warning sign: potential failure that can cause slight damage or financial harm.

⚠ Warning sign: potential failure that can cause severe damage, serious harm or death.

i This sign indicates additional information or recommendation.

1.2 Acronyms

DVA1 image: The standard Digital Variance Angiography image. By default, this image appears first during the data processing and should be used in combination with other images

DVA2 image: a DVA1-based image processing method that can effectively enhance the contrast-to-noise ratio and reduce motion related artifacts of lower extremity angiograms. The user can use DVA2 with the MEAN, MEDIAN or NONE filter options.

⚠	DVA2 alone is not eligible for diagnostic purposes, always use along with DVA1

ccDVA image type 1 and 2: a parametric image processing method where the colouring represents the time of the bolus flow. ccDVA can be used to visually estimate the bolus arrival time differences between vessel branches.

ccDVA image type 1: for iodinated contrast media

ccDVA image type 2: for iodinated and CO2 contrast media

⚠	ccDVA alone is not eligible for diagnostic purposes, always use along with DVA1

Anatomical background: the X-ray image that can be overlayed on the DVA image for the visualization of surrounding anatomy (e.g.: bones). This function is optional.

⚠	Anatomical background alone is not eligible for diagnostic purposes, always use along with DVA1

DVA video: DVA movie that shows the movement of the front of the contrast agent bolus but also the outflow (runoff phase).

⚠	DVA video alone is not eligible for diagnostic purposes, always use along with DVA1

cumDVA: DVA movie that shows the movement of the front of the contrast agent bolus (cum = cumulative DVA). Because of its cumulative nature the outflow (runoff phase) is not visible on this video.

⚠	cumDVA alone is not eligible for diagnostic purposes, always use along with DVA1

ccDVA video type 1: A DVA movie that shows the movement of the front of the moving contrast agent bolus and indicates the bolus arrival times by colour coding. Using this it is easier to determine when the contrast bolus reaches certain areas.

⚠	ccDVA movie alone is not eligible for diagnostic purposes, always use along with DVA1

Analysis Tool: ccDVA Analysis Tool's (as AT) main aim is to compare the ccDVA images which are taken before and after the intervention.

⚠	This function is in beta version, do not use for diagnostic purposes. Kinepict Health Ltd. will not take responsibility for any damage caused by users not used properly.

2 Kinepict Technology

The Kinepict Medical Imaging Tool is based on a patented technology[1] that extracts functional information from a series of X-ray images and presents it as a new Digital Variance Angiography (DVA1) image. In addition to the DVA1 image, the software can also reconstruct the anatomical background and various other image and video types.

The release of this software is the first step of a process that intends to reduce the risks associated with X-ray angiography.

The software is designed and developed according to the users' needs, and your assistance is essential in the further development of the Kinepict Medical Imaging Tool. Thus, if you require any assistance or further information or if you have recommendations or requests for the software, please feel free to contact us at kinepict@kinepict.com.

Kinepict Medical Images Tool is a CE marked product available in the European countries.

Intended therapeutic and diagnostic indications and claims:

Kinepict Medical Imaging Tool version v5.3 is a stand-alone software intended for visualization of blood vessel structures by detecting the movement of a contrast medium in standard-of-care angiography examinations. Please note that before the first use, the software should always be tested without patient.

The user of this CE marked product should be a medical doctor specialized in radiology, angiology or vascular surgery.

⚠	Only professionals trained by the Kinepict Health Ltd are authorized to use the Kinepict Medical Imaging Tool. Kinepict Health Ltd will not take responsibility for any damage caused by users not trained properly.

Claims

1. The Kinepict Medical Imaging Tool can visualize blood vessels using non-subtracted X-ray image series obtained with standard-of-care angiography protocol.

2. The technology is applicable for the use with either iodinated contrast media[3-5] or carbon dioxide[6,7], as a contrast agent.

3. The DVA image provided by the Kinepict Medical Imaging Tool has higher signal-to-noise ratio than the DSA image, as defined by the method of Rose[2]. Clinical studies verified also an improved visual image quality[3-6].

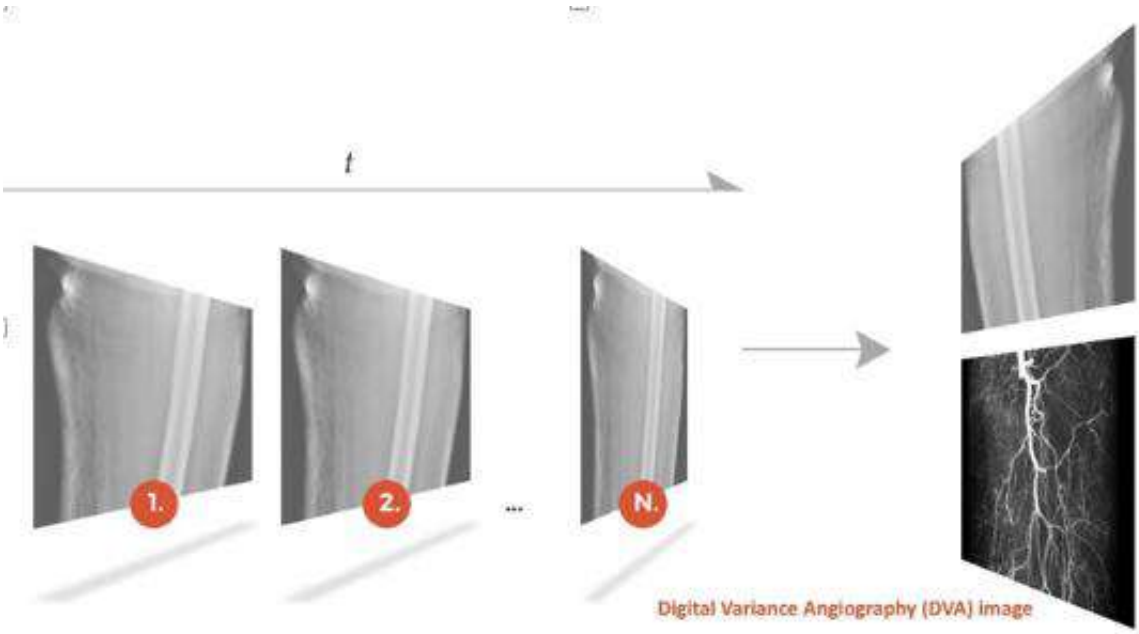
4. The excess quality of DVA can be used for dose management. Clinical studies provided evidence for the reduction of contrast agent amount[8] or radiation exposure[9], without affecting the image quality of angiograms.

⚠	The achievable contrast agent and radiation exposure reduction might vary

	depending on the type of angiography instrument and the applied acquisition protocol, therefore the published values are only for orientation, and every laboratory has to optimize its own dose management protocols before daily use.

List of publications

1. Szigeti et al, 2014. IEEE Trans Med Imaging 3:2031-8.
2. Rose A 1953. J Opt Soc Am 43:715-716
3. Orias et al, 2019 Invest Radiol, 54:428-436.
4. Thomas et al, 2022. J Vasc Intervent Radiol 33:104-112.
5. Alizadeh et al 2022 Acad Radiol 2022, DOI: 10.1016/j.acra.2022.05.007
6. Gyano et al, 2019. Radiology, 291:246-53.
7. Gyano et al, 2020. Cardiovasc Intervent Radiol, 43:1226-1231.
8. Orias et al, 2020. Eur J Radiol Open, 7:100288
9. Gyano et al, 2021. Sci Rep, 11:21790.



3 Installation of the Kinepict Medical Imaging Tool

Hardware Requirements:

- A CPU equal to or better than Intel® Core™ i9-9900K CPU® 3.60GHz
- At least 32GB RAM
- At least a 512 GB SSD
- The installed software itself takes up 270MB of disk space
- To allow space for the temporary files created by the software, make sure that you have at least 2GB free disk space (HDD) and further disk space for the DICOM files you need to process, so that the software can run without problems.

These are only the minimum requirements. The software will run faster and will be able to process larger files if the hardware is better.

⚠	Do not use the Kinepict Medical Imaging Tool on a computer that does not fulfil the minimum requirements listed above!

Technical parameters for the frame grabber:

Supported video modes: Up to 1920×1200
Video Sampling: 24 bits per pixel, 8:8:8 format 16 bits per pixel, 5:6:5 format 8 bits per pixel, 3:3:2, 3:2:3, 2:3:3 or 256-grey scale format 4 bits per pixel, 16-grey scale format

Programming Language Requirements:

Kinepict Medical Imaging Tool requires Java runtime environment. If you use the native windows installer, Kinepict Medical Imaging Tool will be installed with its copy of Java Virtual Machines with the version number 1.6.0 or later (the recommended version is 1.8) from Oracle available at

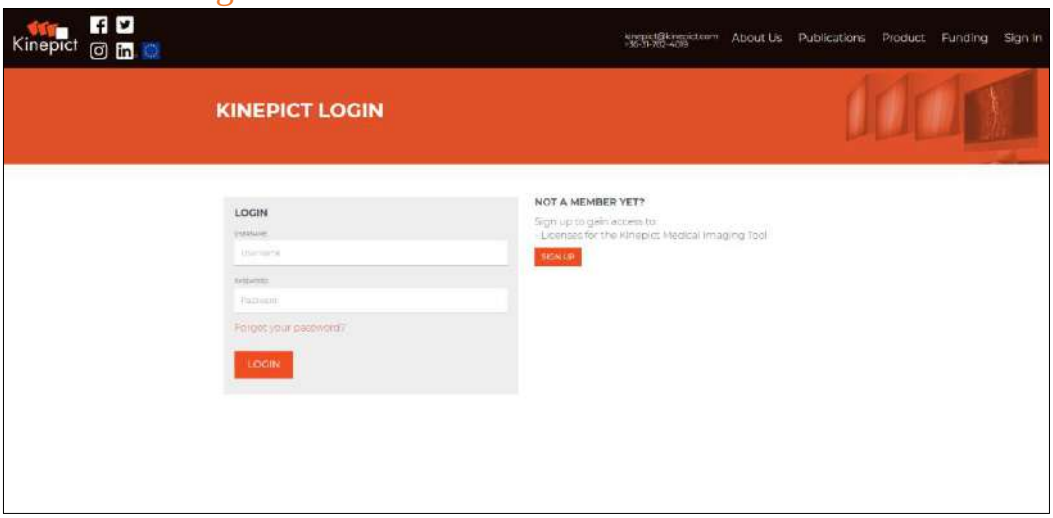
http://www.oracle.com/technetwork/java/javase/downloads/index.html.

Interface Requirements:

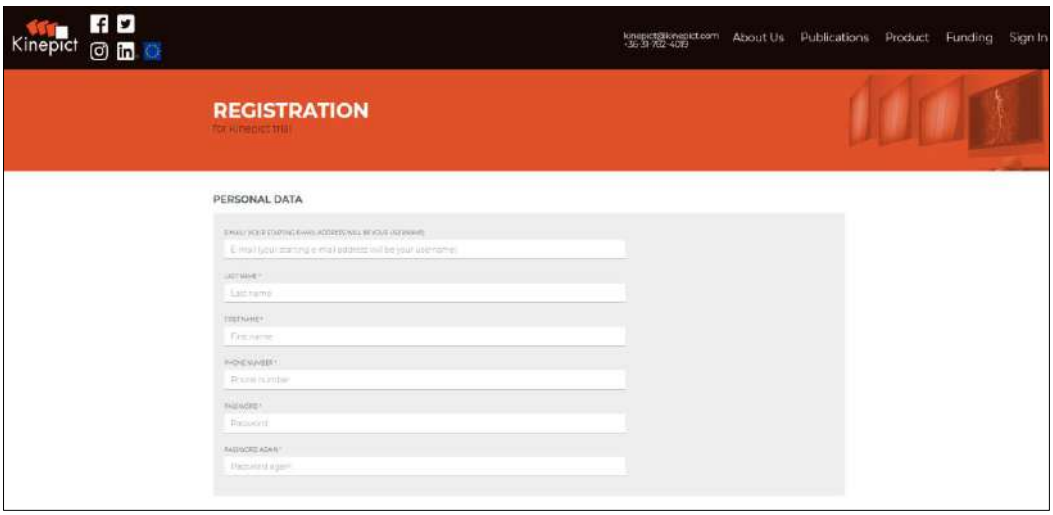
- The software communicates with the user through a monitor. To see everything appropriately in our application, a color display is recommended, with at least 1366x768 resolution.
- The user communicates with the software using a mouse and a keyboard. To use every implemented function a mouse is required. A keyboard can help access certain functions faster.

3.1 Installation Quick Guide

3.1.1 Website registration



Start registration by clicking ‘Sign in’ / ‘Sign up’ on the www.kinepict.com homepage.



To register, please fill out the registration form which consists of the following fields:

Personal data

- E-mail address*
- Last name*
- First name*
- Phone number*
- Password*
- Password, again*

Company or Institute Data

- Company or institute*
- Department*
- Tax number

- Country*

Address (Optional)

- Province/State
- ZIP Code
- City
- Street Name
- House Number

The mandatory fields are marked with an asterisk. Please note that your phone number should start with a '+' followed by the country code.

After completing the form, finalize the registration by accepting the Privacy Policy and clicking on the 'Register' button.

⚠	Please provide correct data because this will be used as your primary contact information.

Successful registration

If the registration form was correctly completed, the system sends an e-mail with an activation link to the specified email address. Click the activation link to activate the account.

Unsuccessful registration

If the user specifies incomplete data or an e-mail address that is already used, the registration cannot be completed, and an error message is displayed.

3.1.1.1 Activation of registration

Successful activation

The registration can be activated on the Kinepict website by opening the activation link received in email. After login click on the Profile menu and choose Request license option to begin the license request process.

Unsuccessful activation

Activation fails, and an error message appears, if you alter the activation link provided after registration, use the activation link more than once, or enter an invalid activation code.

⚠	Uninstalling the software might also delete the patient data, depending on the choice of the user

4 Application request

In order to purchase the application, customers shall contact Kinepict Health Ltd. A consultation needed before installation.

For medical diagnostic purposes every user shall have a training and installation record from Kinepict Health Ltd. Only specialized staff can use the software installed by Kinepict Health Ltd., who received training from Kinepict Health Ltd.

⚠	Only professionals trained by the Kinepict Health Ltd are authorized to use the Kinepict Medical Imaging Tool. Kinepict Health Ltd will not take responsibility for any damage caused by users not trained properly.

5 License request via website

Obtaining a valid license is required before using the installed desktop application. Only registered and activated users can receive license keys. To request a new license, log in to your account using a browser. After logging in, click on 'Profile' menu and use the Request license option to begin the license request process. Complete the license request form, and submit the request to the administrator by clicking on 'Send Request'. The administrator receives and handles license requests after verifying permissions. The status of the request can be monitored on the licenses page.

The license request form requires a machine ID, which can be obtained in two ways:

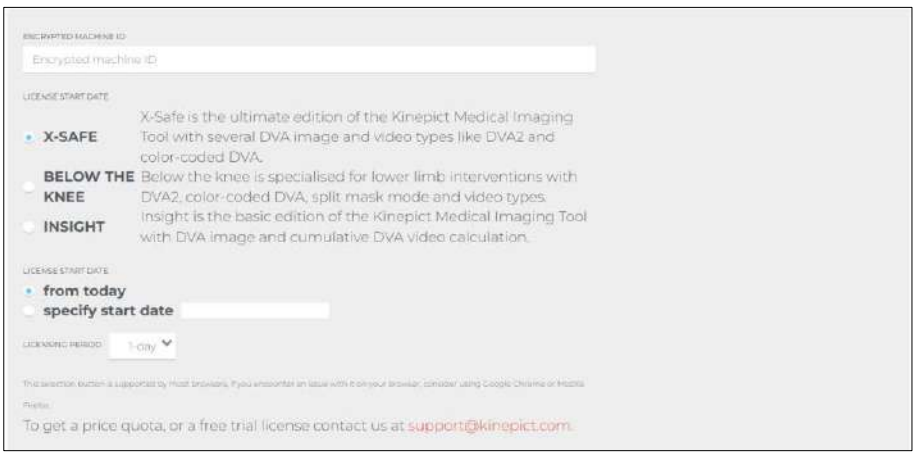
1. **On the website, using the desktop application**

Open the request page by clicking 'Request license online' on the licensing screen of the desktop application, and then the request page opens with the machine ID filled in.

2. **Copying the Machine ID via the desktop application**

The user can copy the machine ID using the desktop application by clicking 'Copy machine ID' on the licensing screen of the desktop application. Then the request page opens, and the user can paste the Machine ID on the request screen of the website.

i	The user can request 3 types of licenses.



There shall be 3 kinds of licenses: 1.) Kinepict Insight and 2.) BTK (below-the-knee) 3.) Kinepict X-Safe. Kinepict X-Safe is the full version with all kinds of comprehensive up-to-date functions and services. Kinepict Insight is the one with reduced functionality.

Below the knee is specialised for lower limb interventions. The all licenses shall work on the same setup file and the Insight version or BTK have to be updated to X-Safe if desired.

Insight license

Insight is the basic edition of the Kinepict Medical Imaging Tool with DVA image and cumulative DVA video calculation.

X-Safe license

X-Safe is the ultimate edition of the Kinepict Medical Imaging Tool with DVA image and video types like DVA2 and color-coded DVA.

BTK license

Below the knee is specialised for lower limb interventions with DVA2, color-coded DVA, split mask mode and video types.

MAIN DIFFERENCES BETWEEN THE TYPE OF LICENSES

			Insight	BTK	X-Safe
I.	Base function	DVA1 calculation	√	√	√
		Cumulative DVA video calculation	√	√	√
		Image and video manipulation functions	√	√	√
		Split mask mode	X	√	√
		PACS and network communication	√	√	√
		Open, Import, Export, Save, Save as, etc. all file handling options	√	√	√
		OR view	√	√	√
II.	Personal preferences/	Generate colour-	X	√	√

	Output images/ video menu	coded DVA image (required for ccDVA video)			
		Automatically set up ccDVA image	X	√	√
		Generate DVA image (DVA2)	X	√	√
		Select filter for DVA image (DVA2)	X	√	√
		Generate ccDVA video	X	√	√
III.	Menu bar	Settings/Set up grabber (BETA) menu	X	X	√
IV.	OR view	Road map button (BETA)	X	X	√
		Color scale button	X	√	√
		Right-click context menu: Apply ccDVA color, Remove coloring, Roadmap (BETA)	X	√	√
V.	Workspace, right click context menu	Use as roadmap (BETA)	X	X	√

VI.	ccDVA Analysis Tool	-	X	X	√

⚠	Please make sure you purchase the relevant modules. Should you have questions regarding the modules, please contact Kinepict Health: support@kinepict.com, +36 31 786 4723

6 Purchasing a license

Detailed information regarding purchasing is available under the 'Profile/Request license option' tab at kinepict.com. Licenses can be purchased by bank transfer to the following account:

Bank Account Information:

Beneficiary name:	Kinepict Health Kft.
Euro IBAN:	HU14 1176 3024 3889 2886 0000 0000
BIC/SWIFT:	OTPV HU HB

PURCHASING A LICENSE

Purchasing a license is the prerequisite of using the desktop application. Purchasing is possible by bank transfer to the following account.

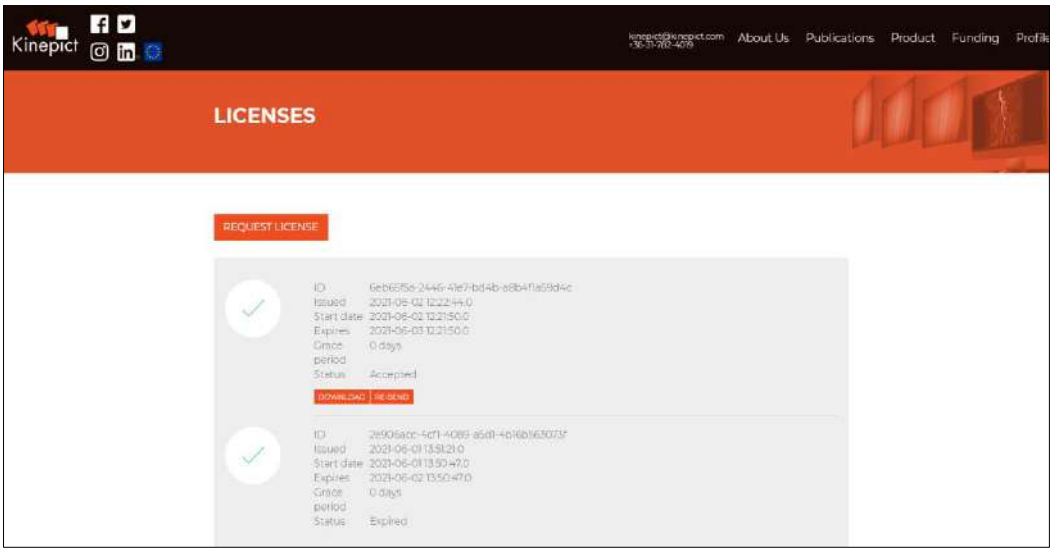
BANK ACCOUNT INFORMATION:

Beneficiary name:	Kinepict Health Kft.
Euro IBAN:	HU14 1176 3024 3889 2886 0000 0000
BIC/SWIFT:	OTPV HU HB

The administrator checks if the user has paid for the license request by wire. If the license request has been paid for the status of the request becomes "Accepted" under the "Licenses" tab. If the license request was not paid for in a long time, the administrator can reject it, the requesting user will be notified of the rejection.

7 License activation

All the licenses associated with an account are available under the Profile/My licenses tab at kinepict.com. The user must be logged in to access this information. License requests have three authorization statuses: 'pending', 'accepted', and 'rejected'. Valid licenses are marked as 'accepted', and the corresponding license file can be downloaded by clicking 'Download'. The user is notified in an email about changes in the license statuses. License files of accepted licenses are also sent to the registered email address attached to the notification e-mail.


Kinepict
About Us
Publications
Product
Funding
LICENSES
REQUEST LICENSE
ID
Issued
Start date
Expires
Grace period
Status
Accepted
DOWNLOAD
RE-SEND
ID
Issued
Start date
Expires
Grace period
Status
Expired

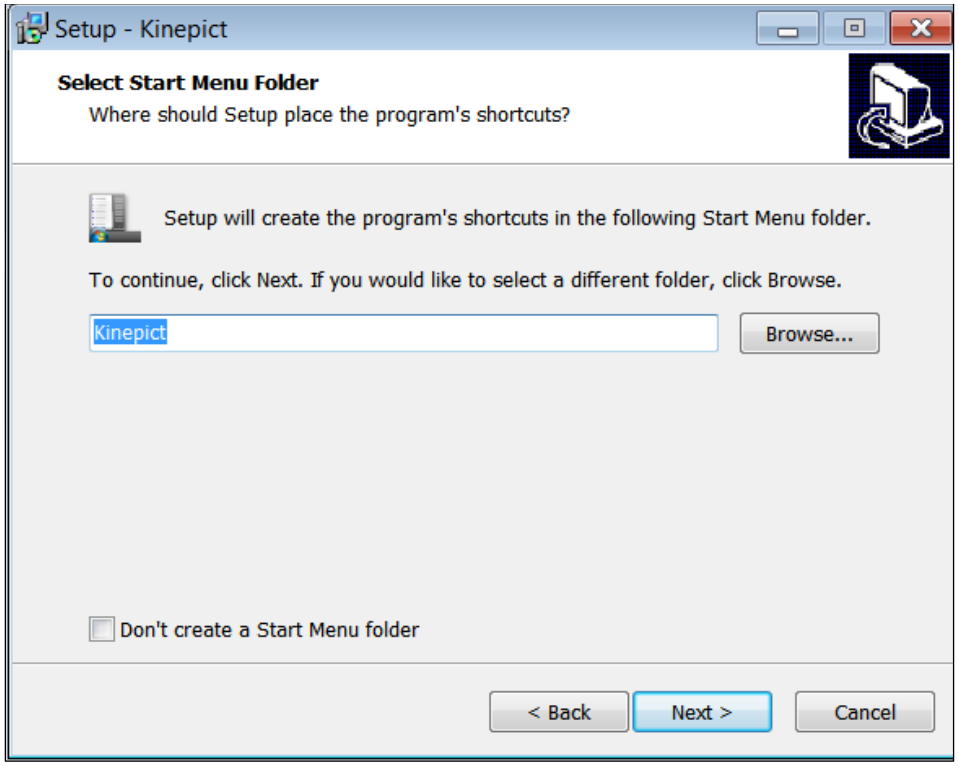
8 Installation

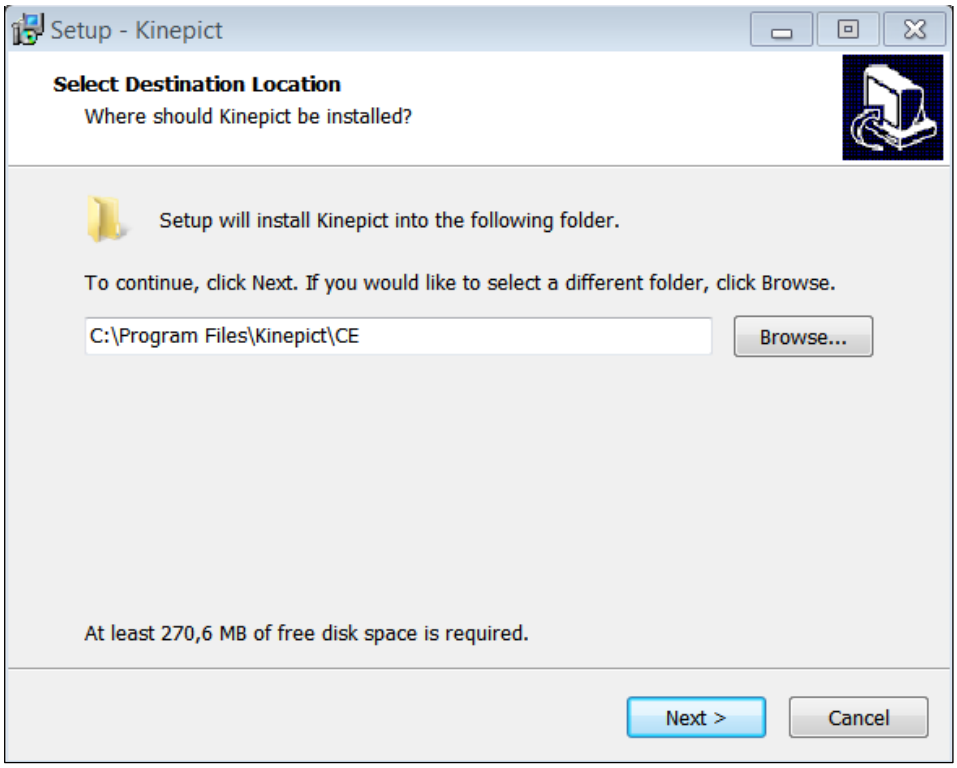
⚠	The setup file contains the version number of the software; please double check it before starting the installation.

8.1 Windows Operating System

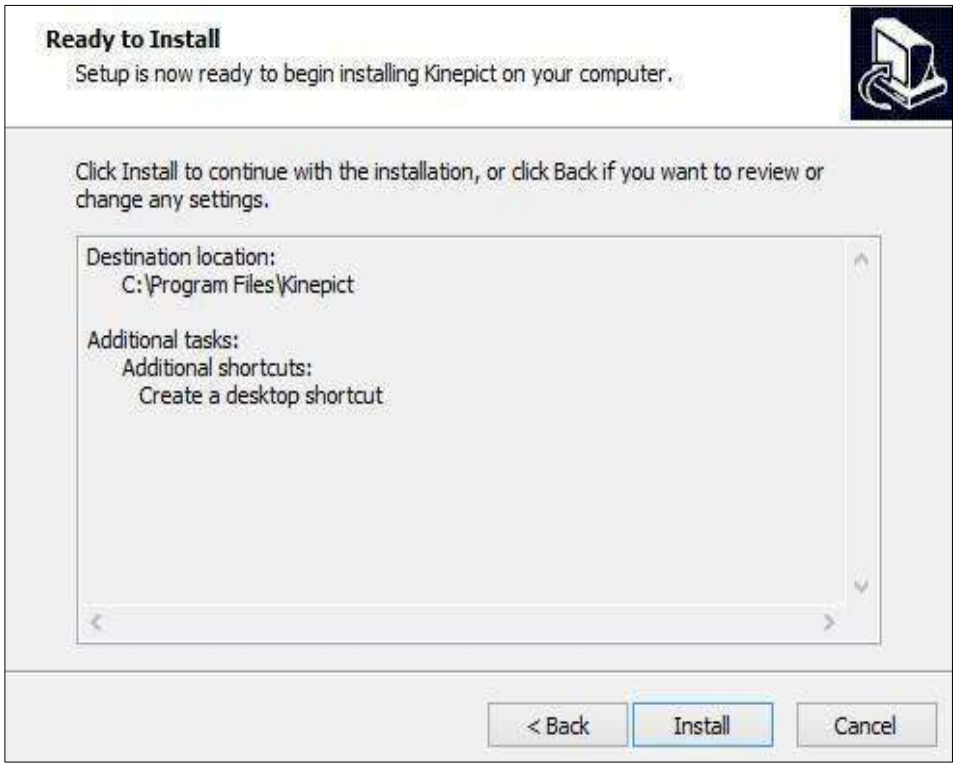
The installation process starts automatically when the user opens the *kinepict_setup.exe* file and clicks 'Run'. Depending on the Firewall settings, the user may get notification first. In this case, click the 'More' option, and choose 'Run anyway'. Continue the installation and select the language of the installer depending on the language specifications of Windows.

Setup will install the software into a designated folder. To choose another folder click 'Browse', select the folder and click 'Next' to continue the installation.

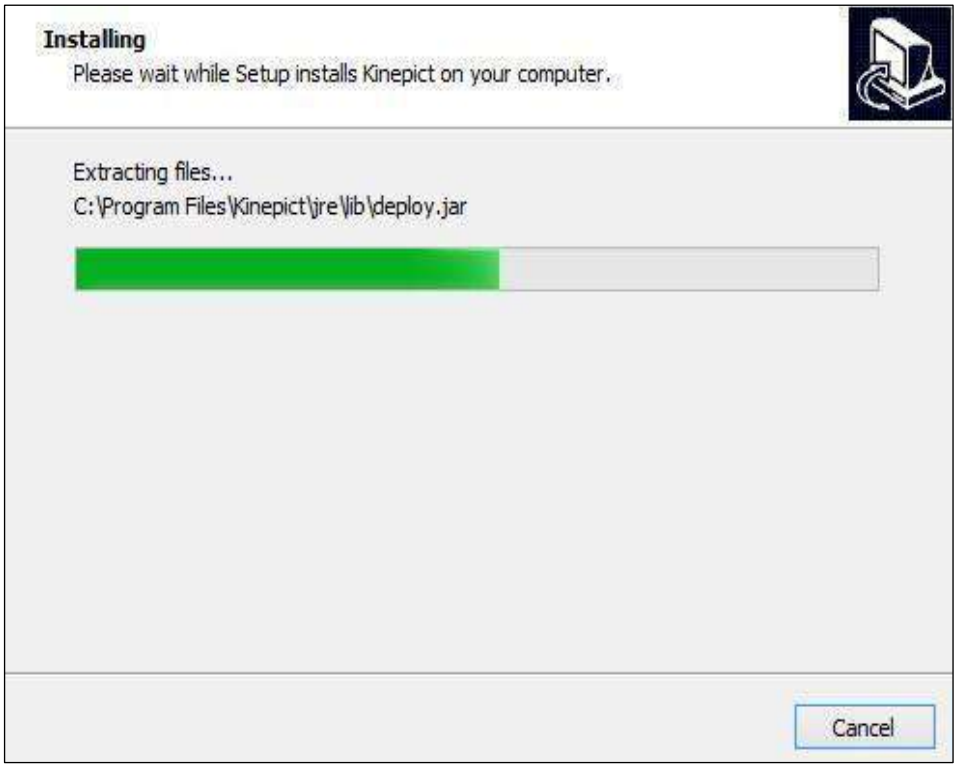




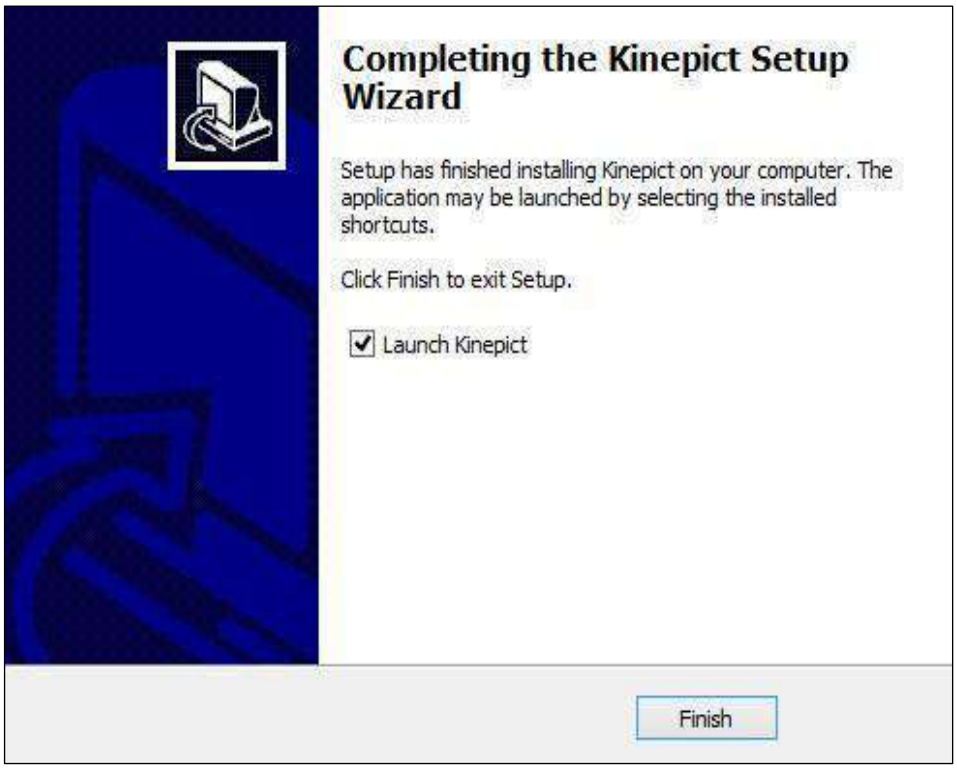
Click ‘Next’ again, then click ‘Install’ to begin the installation:



The advancement of the installation can be followed by a progress bar, as the setup installs the Kinepict Medical Imaging Tool on the user’s computer.



Once Setup has finished the installation, click ‘Finish’ to exit Setup.



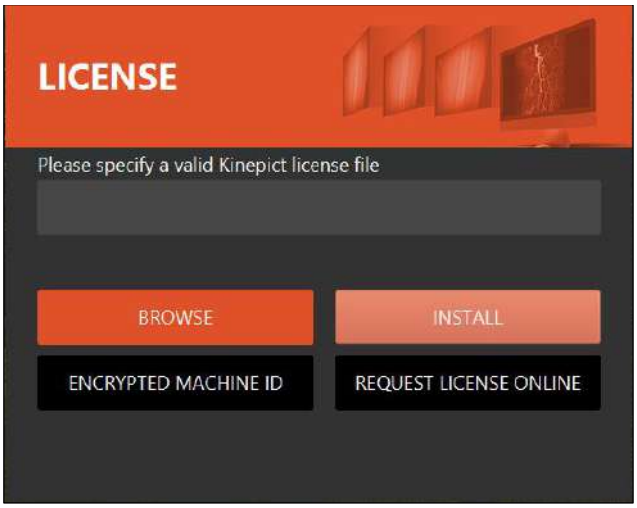
Now, the Kinepict Imaging Tool is ready to use.

8.2 Mac OS X Operating System

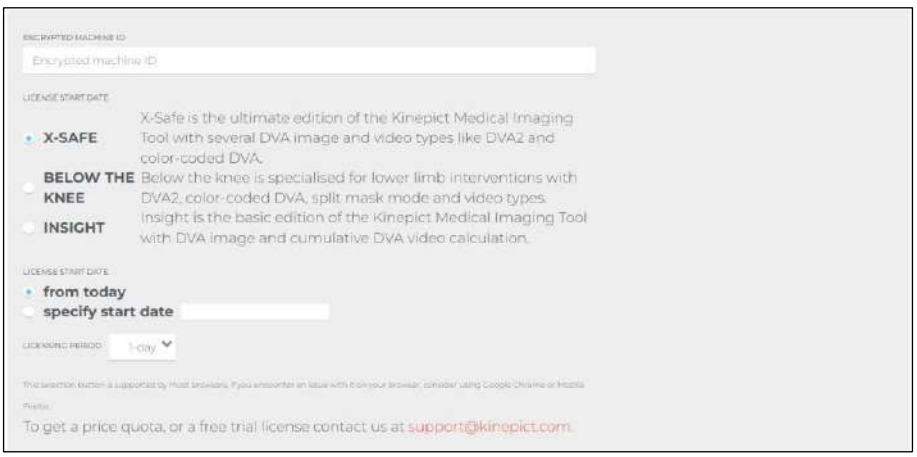
The Kinepict Medical Imaging Tool is not compatible with Max OS.

9 Requesting and activating license inside the application

Running the downloaded desktop application requires licensing. Only registered and activated users can obtain license keys. Licensing is time-based, and the licensing period must be specified for the calculation of the price of the license. To begin the license request process, the user must log in to their account in a browser. The license request window opens automatically when the software is launched the first time.



Click ‘Request license online’, and you will be guided to the Request License page in the browser. The machine ID will be automatically filled in (if not, please choose the ‘ENCRYPTED MACHINE ID’ button than past it to the machine ID box). You also need to specify the start date and the length of the licensing period.



⚠	For further information on the type of licenses, please see chapter 5.

After clicking the ‘Send request’ button, the user will have a pending request. Every request is approved manually by the administrator after purchasing or having data on the user’s entitlement for a license.

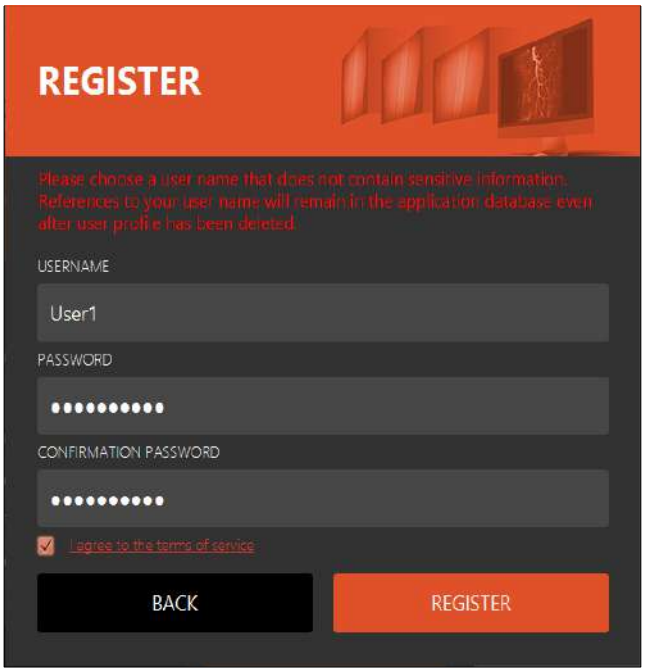
After the approval of the license request, the status of the user’s license changes from ‘Pending’ to ‘Approved’ and the user can download the license file which is an encrypted code in the form of a small file with a long name and a .dat extension.

Now the user can insert the license file into the software’s license window using ‘Browse’. Please note, that not only the license file’s name but also the path leading to it is essential!

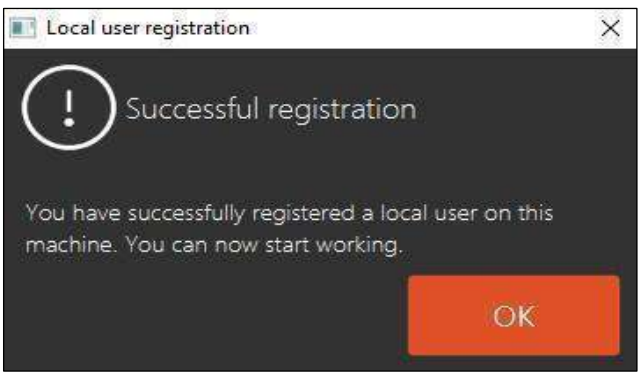
The license key needs to be specified only once per installation until its licensing period expires. If the license key is entered and is valid, the application automatically navigates the user to the local login window. If the license key is invalid or it expired, an error message is displayed, and the user is not permitted to log in.

The login window looks like the following:

Every user should register locally before using the software, to keep the data of their patients separate. This registration is different from the earlier record done on the website, and it defines local users. Multiple users can be registered locally with the same license, which reflects the real-life situation that multiple doctors use the same workstation. Clicking the 'Register' tab the following form appears:



Please make sure to read and accept our Privacy policy by ticking the box next to it. After completion of the form, click 'Register'. If the local registration was successful, the following window appears:



After clicking OK, the software launches automatically. If it does not, then click the 'Back' button! Please note that guest users on a Mac do not have access to Shared folders. 'Allow guests to connect to shared folders' should be turned on, to avoid this problem.

⚠	Always double check your license before operation.
i	Users can store new licenses for later use, even when a current one is still valid.

10 Renew license

Steps of license renewal:

1) Before the license expires, you will receive an email from info@kinepict.com. Click on the link in the email.

Your license has expired Inbox ×

info@kinepict.com 10:42 AM (2 hours ago)

Dear Edit,

Your license has just expired.
Your license has a grace period of 0 days after expiration but please note that you will not be able to use Kinepict beyond that unless you re-new your license.

You can re-new your license using the following link:
https://staging.kinepict.com/request.xhtml?renew=eyJzeXN0ZW1JbmZvIjoicXRLeGF6VTBINjNUd3F0eUN6M0dXUT09XVRxVXhoWnhPMUs1N1Z0bkIITzN3bWc9PSIsInN0YXJ0IjoxNTU1MzE0Nzg3MDAwLCJlbmQiOjE1NTU0MDExODcwMDAsInJlbmV3YWxJZCI6bnVsbH0

License key: cbe157b6-bcfc-4e64-90d9-5aaa11f76933
License expiry date: 2019-04-16 09:53
Grace period: 0 days

If you have questions or encounter any problems, please send a mail to: info@kinepict.com

Regards,
Kinepict

2) Sign in on the opened site with username and password.
3) Set Machine ID, select license period and press 'Request License' button.

4) After a successful login you will receive a new email with an activated license key: you should download the attached .dat file.

Kinepict - License key activated Inbox ×

info@kinepict.com

Dear Edit,

Your license key has been successfully generated and is attached in this mail.

Please download it to your local file system and install it when the application requests it after being started.

License start date: 2019-04-16 11:47
License expiry date: 2019-04-17 11:47

If you have questions or encounter any problems, please send a mail to: info@kinepict.com

Regards,
Kinepict

--
https://www.kinepict.com

5) Start the Kinepict application and browse the .dat file from the Downloads folder.
6) Click the 'Install' button. After the successful activation click 'OK'
7) Login with username and password.
8) The application will start.

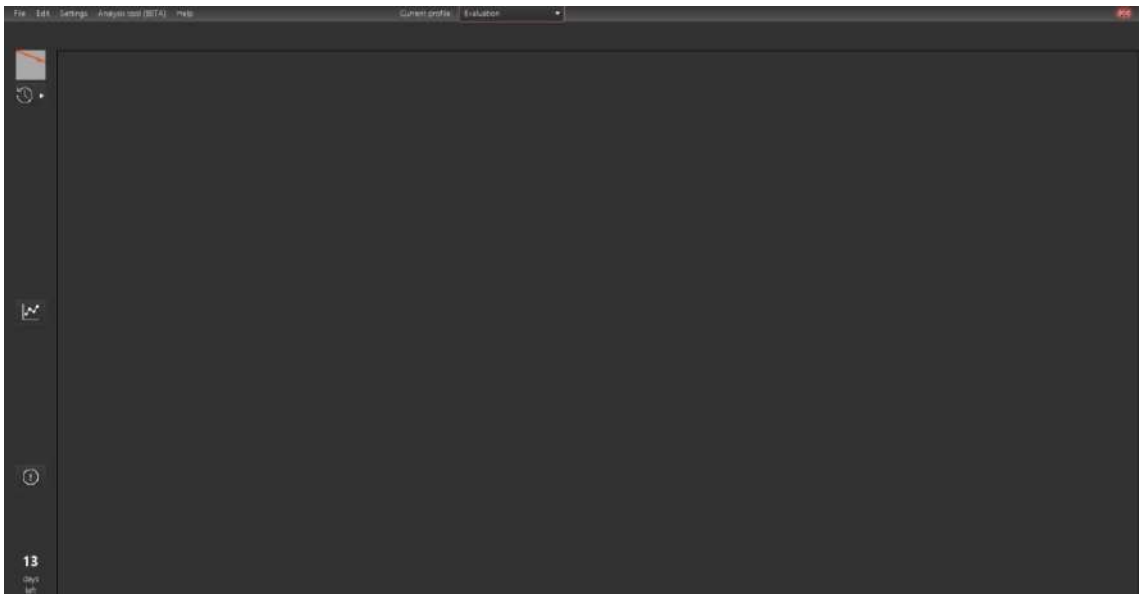
11 User login

Log in with your username and password to use the Kinepict Medical Imaging Tool.

12 User Interface

The software is a desktop application. No internet connection is needed after installation. The user must log in locally into the Kinepict software to be able to use it.

The software includes the Main menu, the Image processing toolbar and the Workspace, which will be described in the following chapters.



⚠	On the workstation ‘send to PACS’ button has been replaced to the ‘open the analysis tool’ button.

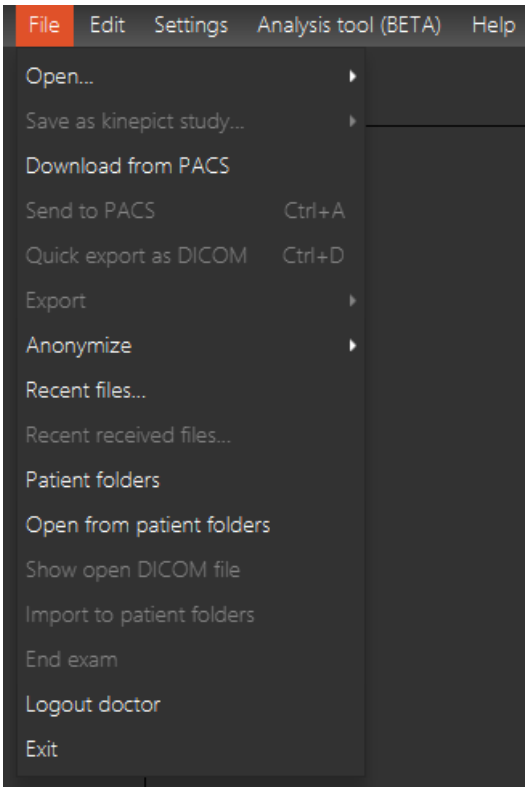
i	On top bar of the window there is a flag icon which is the language selection.

Open the analysis tool button: This function to open the Analysis Tool (it opens even if no image is loaded in the toolbar).

12.1 Main menu

The main menu consists of four submenus: File, Edit, Settings, Analysis tool (BETA) Help and language selection icon.

12.1.1 File menu



‘Open’

There are three options available for opening a file:

1. ‘Open file(s) ‘

   The user can open a single DICOM file or a Kinepict study file too.

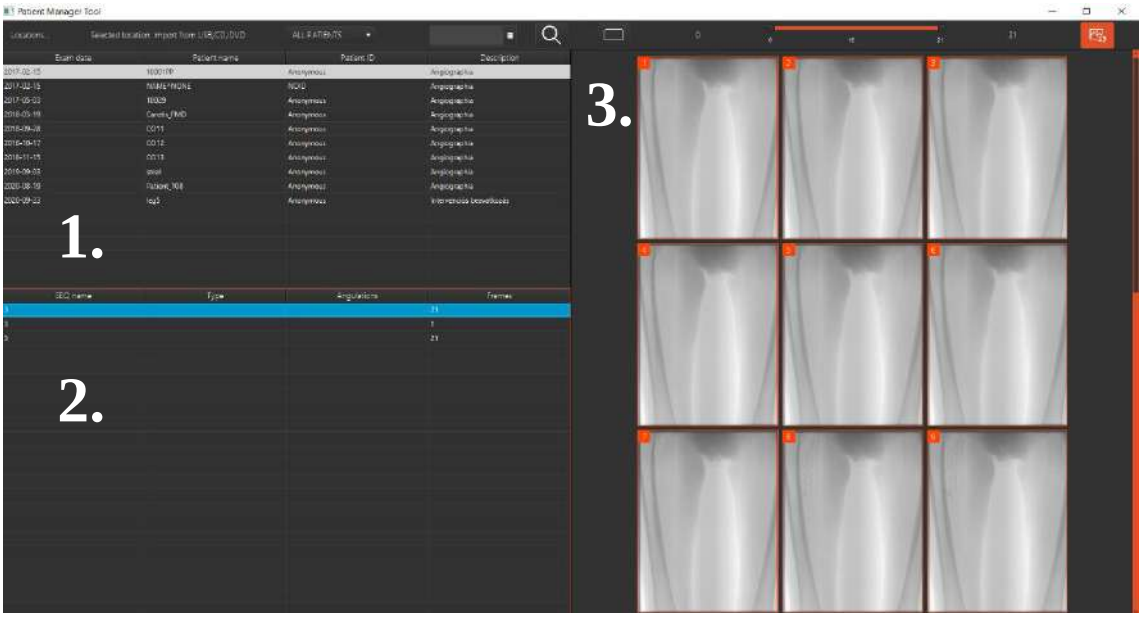
2. ‘Open directory of frames’

   The user can open DICOM directories.

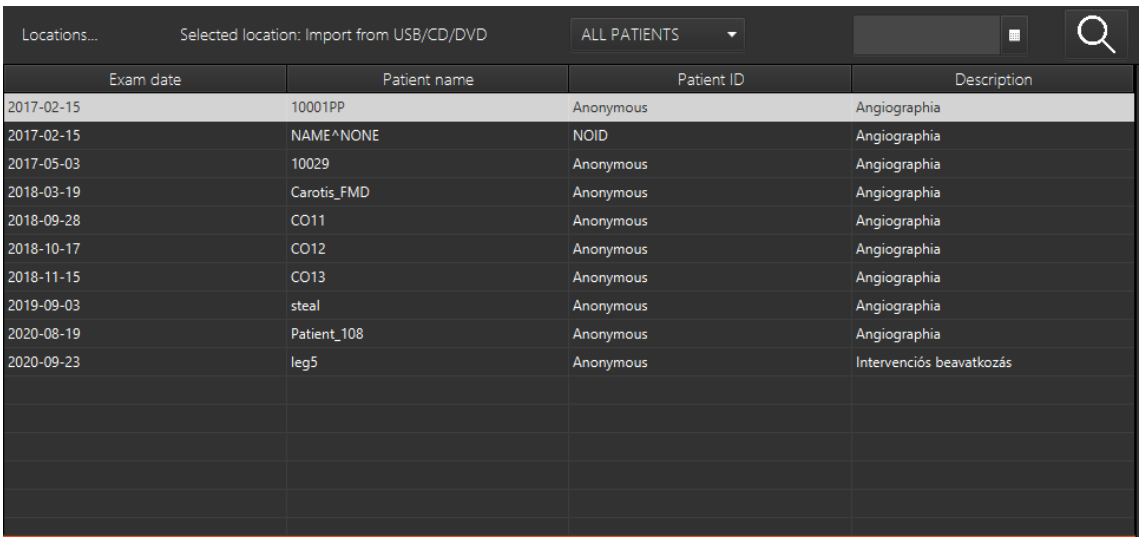
3. ‘Find multiple DICOM files’

The user can select one directory from the file system or from a pendrive, and KMIT will select and sort the DICOM files from there.

4. ‘Open patient manager tool’



1. Select the patient folder



The user can select the location from where would like to import the patient images:

- **Default folder:** recent files and received files
- **Remote folder:** patient folders
- **Import from USB/DC/DVD**

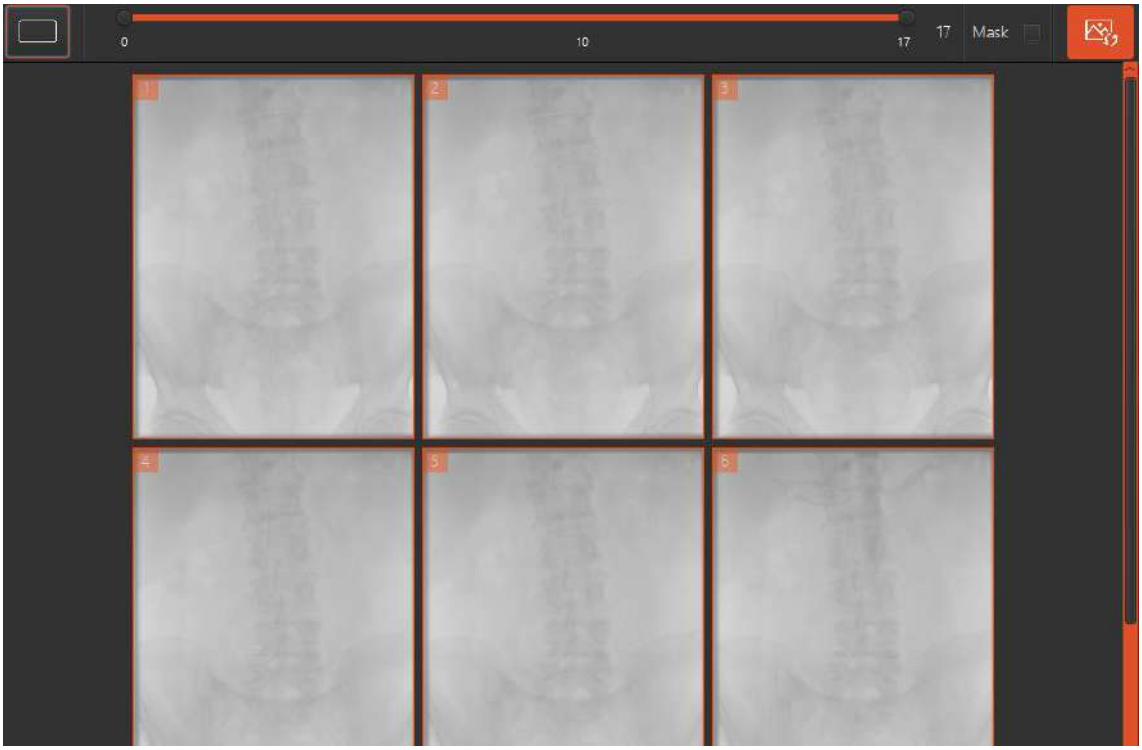
After the selection the patients' images appear in the list.

There is a filter next to the location choosing option, with it the user can set the date.

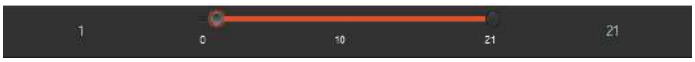
2. Patient folder content

In this part of the patient manager the software listed the images which belongs to the selected patient with sequence name, type, angulations and frame numbers.

3. Overview of frames

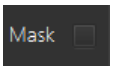


This button changes the view between the frame and the preview DVA1.



Frame selection scale

Generate images



The mask option helps for the user to find the proper frame interval to for the DVA generation. This mask option is working difference than in the frame selection, because the user sees the masked frames, only when use the scale to set a preview.

If the user clicks on the ‘house’ icon it to return to the main windo.

i	The user can also open DICOM file by drag the unsubtracted series to the Kinepict main window.
i	For easier navigation between image series in • Recent files • Recent received files • Open from patient folder the user see DVA1 image previews before the image is selected for open.

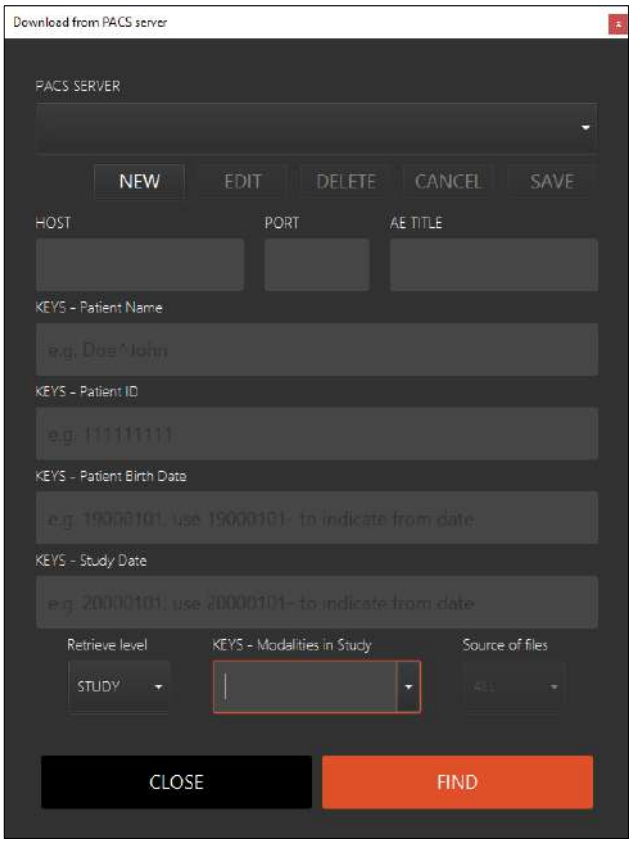
‘Save as kinepict study’

Use this option to save data as a Kinepict study (.kps), if you want to store, or use the calculated images in the Kinepict workspace in the future

1. Save ’
2. ‘Save as’
3. ‘Save self-contained study as’
4. ‘Save anonymized study as’

‘Download from PACS server’

The user can download images from PACS server, after clicking this item, the following window appears:



After adding the details, click find.

⚠	If you cannot find what you look for, please try again on your PACS systems own server.

‘Send to PACS’

This feature allows the user to send the generated images to a PACS server configured earlier. Select a PACS server and the images to send, and click 'Send'. The user can configure new PACS servers using the 'Settings' / 'Preferences' / 'PACS servers' tab by specifying the host IP address, port number and application entity (AE) title. The user can also edit, delete, cancel and save PACS server data using the above tab.

‘Quick export as DICOM’

Use this feature to save the data in a DICOM file in the same folder where the previous DCIOM was saved. Saves the same file as the ‘Export’ / ‘As DICOM’, but without popping up the ‘Export” window.

‘Export’

There are multiple ways to export the result of the image processing:

1. As DICOM

   This feature allows the user to save in a DICOM format the selected images along with the patient data.

2. As image

   Image data can also be saved as pictures, in various file formats (png, jpg, tiff, bmp, gif).

3. As text

   This option allows for saving the generated images as tab-delimited text of floating-point precision intensity values for each pixel.

‘Anonymize’

Allows the user to anonymize DICOM files.

1. Anonymize input file(s)

   This feature allows the user to save the input file(s) into new anonymized DICOM file(s).

2. Export as anonymized DICOM

   The Export window opens with the DICOM format and Anonymized option selected.

3. Anonymize multiple file(s)

   The selected DICOM file(s) are anonymized and saved as new separate file(s).

‘Recent files’

Displays the list of recently processed files.

‘Recent received files’

Displays the list of DICOM files recently received via the DICOM port.

‘Patient folders’

Brings up the folders in which the user recently downloaded files or where image series from the X-ray device were recently stored automatically if such a connection has been configured.

‘Open from patient folders’

The user can open the patient folders structure in the Kinepict software.

‘Show open DICOM file’

Pops up the folder which contains the actually opened file.

‘Import to patient folders’

Use this option to quickly place the file you are working on in the automatically generated patient folders.

‘End exam’

Close current workspace, unsaved data can be lost.

⚠	Unsaved data can be lost

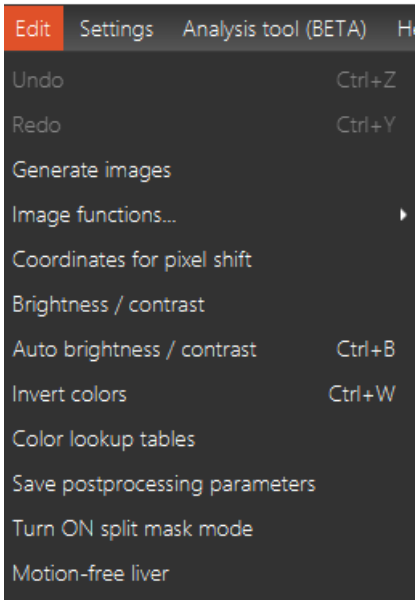
‘Logout’

Log out of the profile by choosing this option.

‘Exit’

Exit the program. The user has to confirm the decision to quit.

12.1.2 Edit menu



‘Undo’ and ‘Redo’

‘Undo’ withdraws earlier changes made to the image. ‘Redo’ repeats undone changes.

‘Generate images’

Starts the calculation of the DVA1 and related images.

‘Image functions’

Find here the various post-processing options offered by the Kinepict Medical Imaging Tool.

1. Zoom In
2. Zoom Out
3. Crop
4. Pixel shift
5. Fixed ROI pixelshift
6. Distance compare
7. Apply ccDVA color
8. Remove coloring

‘Coordinates for pixel shift’

Use this to remove motion artifacts.

‘Brightness/Contrast’

Change the brightness and contrast of the selected image.

‘Auto Brightness/Contrast’

Use this option to set the brightness and contrast by one click, using a built-in recommendation.

‘Invert colors’

Create an inverted image.

‘Color lookup tables’

Use this feature to enhance visualization by using custom color tables.

‘Save post processing parameters’

Use this option to save the actual post processing settings in a file in the C:/Users/Doctor1/kinepict/postprocessingInfo folder.

Calculated pictures and movies can be visualized on a second screen also. The content of the second screen is automatically refreshed as image generation proceeds. If the automated generation is active, an 'Image generation in progress' message will indicate that a new data series has been received and is being processed.

⚠	If an error is thrown on the main screen, a warning label 'Error' appears on screen sized view.

‘Turn ON split mask mode’

The user can turn on split mask mode from the Edit menu which will separate the images into a left and a right side for pixel shift area selection. When the mode is turned on every pixel of a pixel shift ROI has to be on one side, as the left and right side can use a different pixel shift ROI, to make viewing of both sides of a lower limb picture without movement artefacts possible. If pixel shift is only used on one side, then there will be no difference to regular pixel shift other than the limitation on where to put the ROI, but if another pixel shift is used on the other side, then the original input image series will be pixel shifted based on that as well, and a merged image series will be created from the respective sides of the two series created with different pixel shifts. Turning the mode off will mean the next pixel shift will be a single ROI pixel shift again.

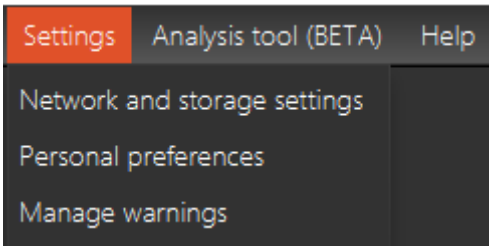
⚠	Please make sure that you use the split mask mode on proper images

‘Motion-free liver’ (BETA)

Non-rigid image processing function to eliminate movement artifacts.

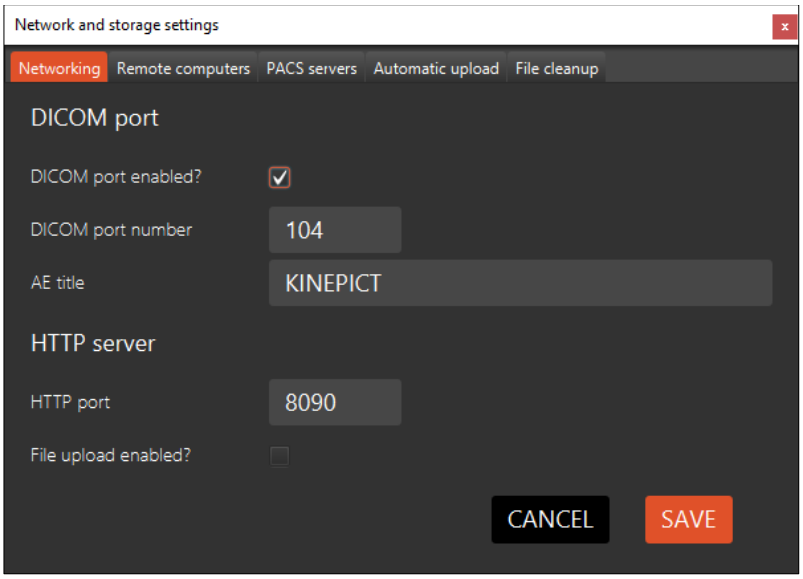
⚠	This function is in beta version, do not use for diagnostic purposes.

12.1.3 Settings menu

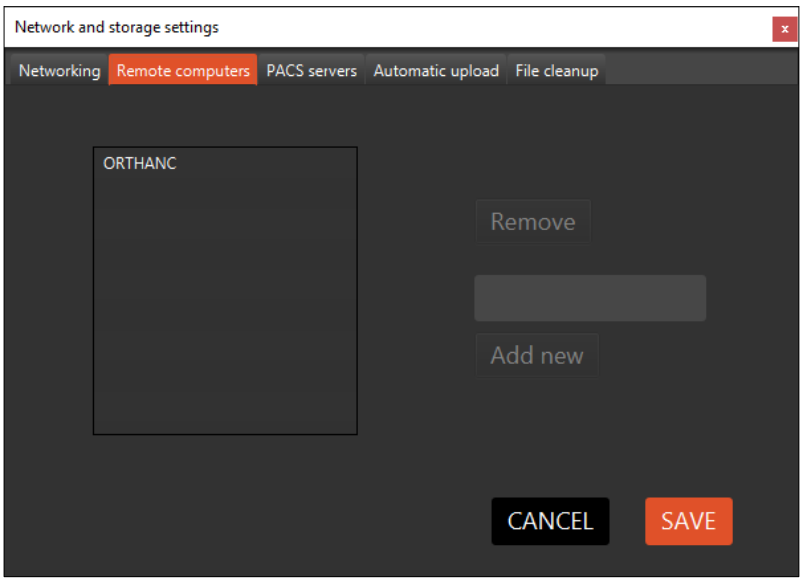


12.1.3.1 Network and storage settings

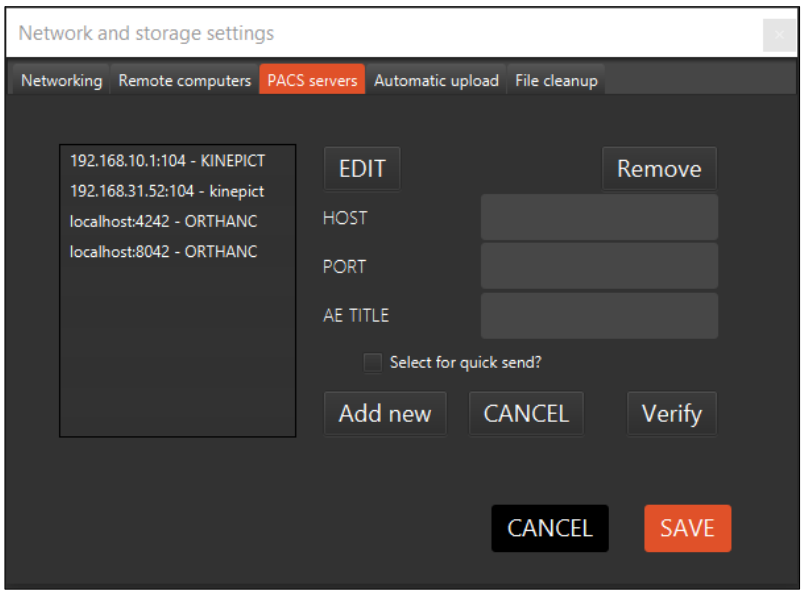
Use the ‘Networking’ tab to manage the DICOM and HTTP port settings.



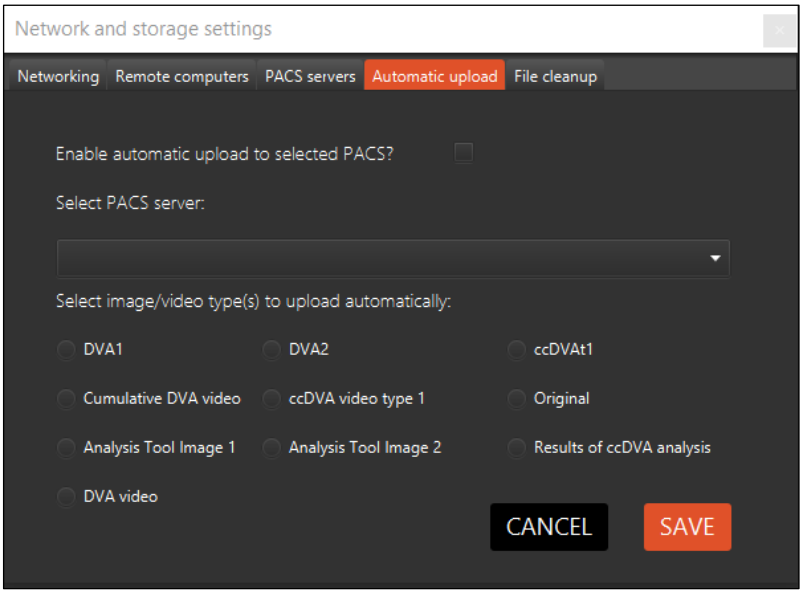
Add other computers to the same network using the ‘Remote computers’ tab. Generally the Remote computers are the devices which send the DICOM files to the Kinepict workstation and these devices are automatically listed on this tab when the user accepts the sent files from there.



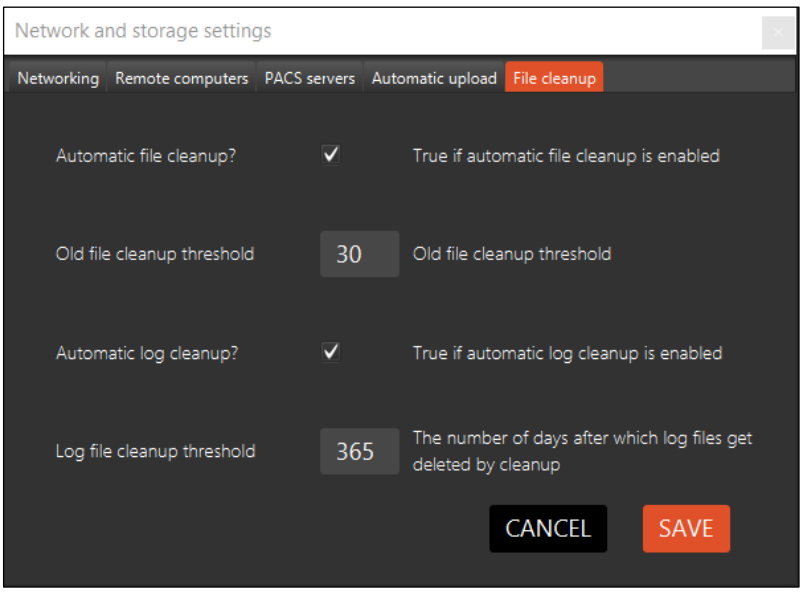
Use the ‘PACS servers’ tab to manage the PACS servers to which image data can be uploaded. The user can create, edit, delete and save PACS server data using this tab.



For automated sending use the Automatic upload tab. After clicking the ‘Enable automatic upload to selected PACS?’ you can set the format type to be uploaded and select the server.



The File cleanup tab is help to schedule the automated files deleting.



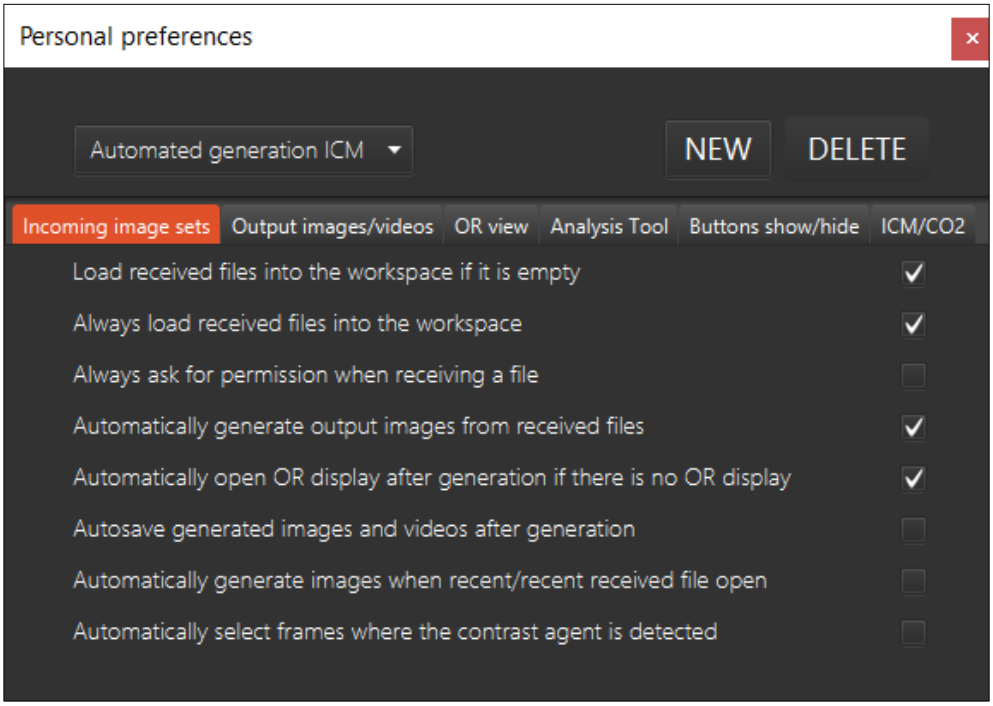
12.1.3.2 'Personal preferences'

Every user can define a personal preference set by ticking in or out the appropriate boxes. Each user can create a new profile, and set their preferences.

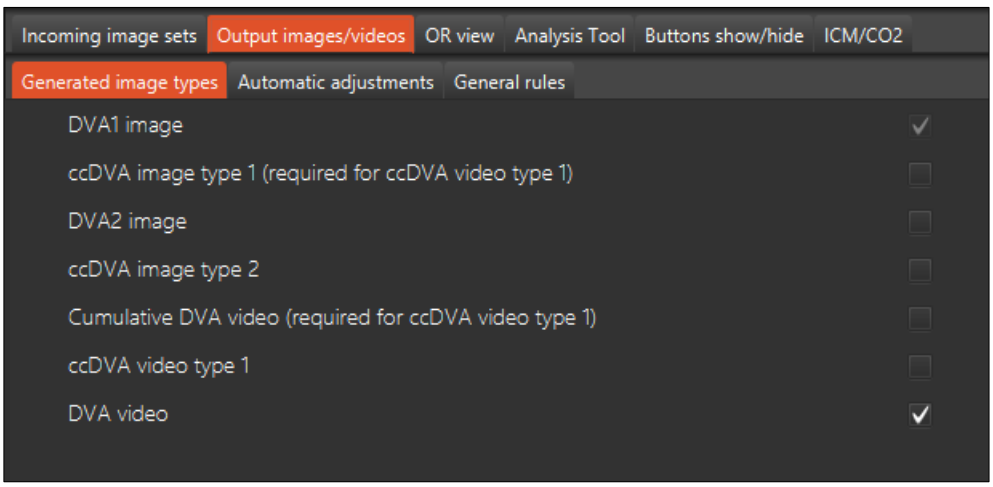
User can also apply 'Automated generation' Profile, in this case the kinetic images are generated automatically right after recording. You can delete the personal preference with the DELETE BUTTON

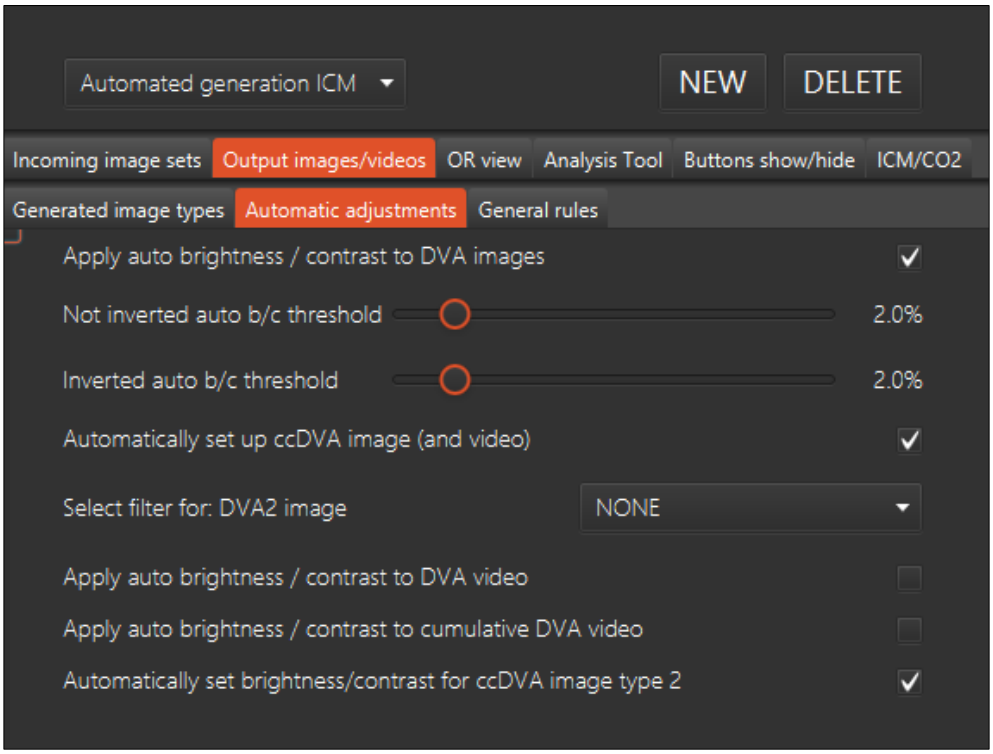
After the user changed some settings at predefined personal preferences profile, also can reset this profile settings by 'Reset settings' button.

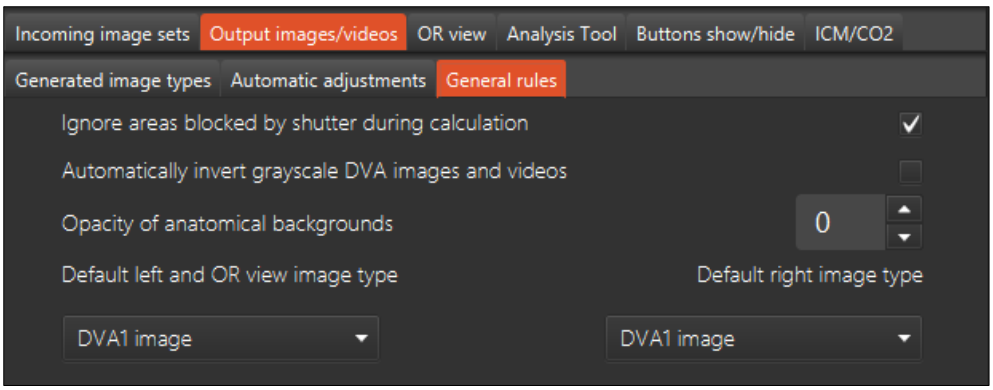
Incoming image sets:



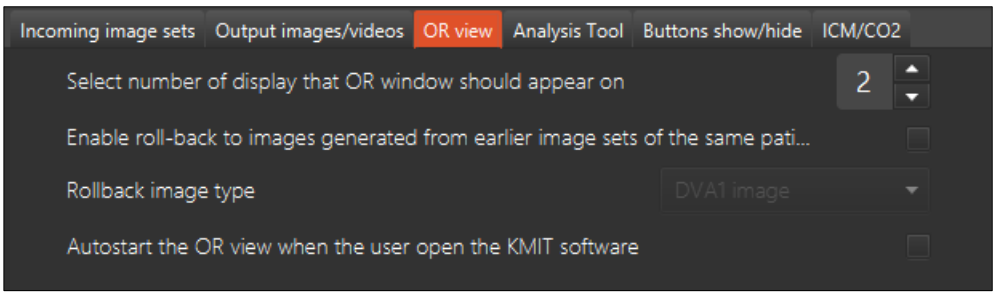
Output images/videos:







OR view:



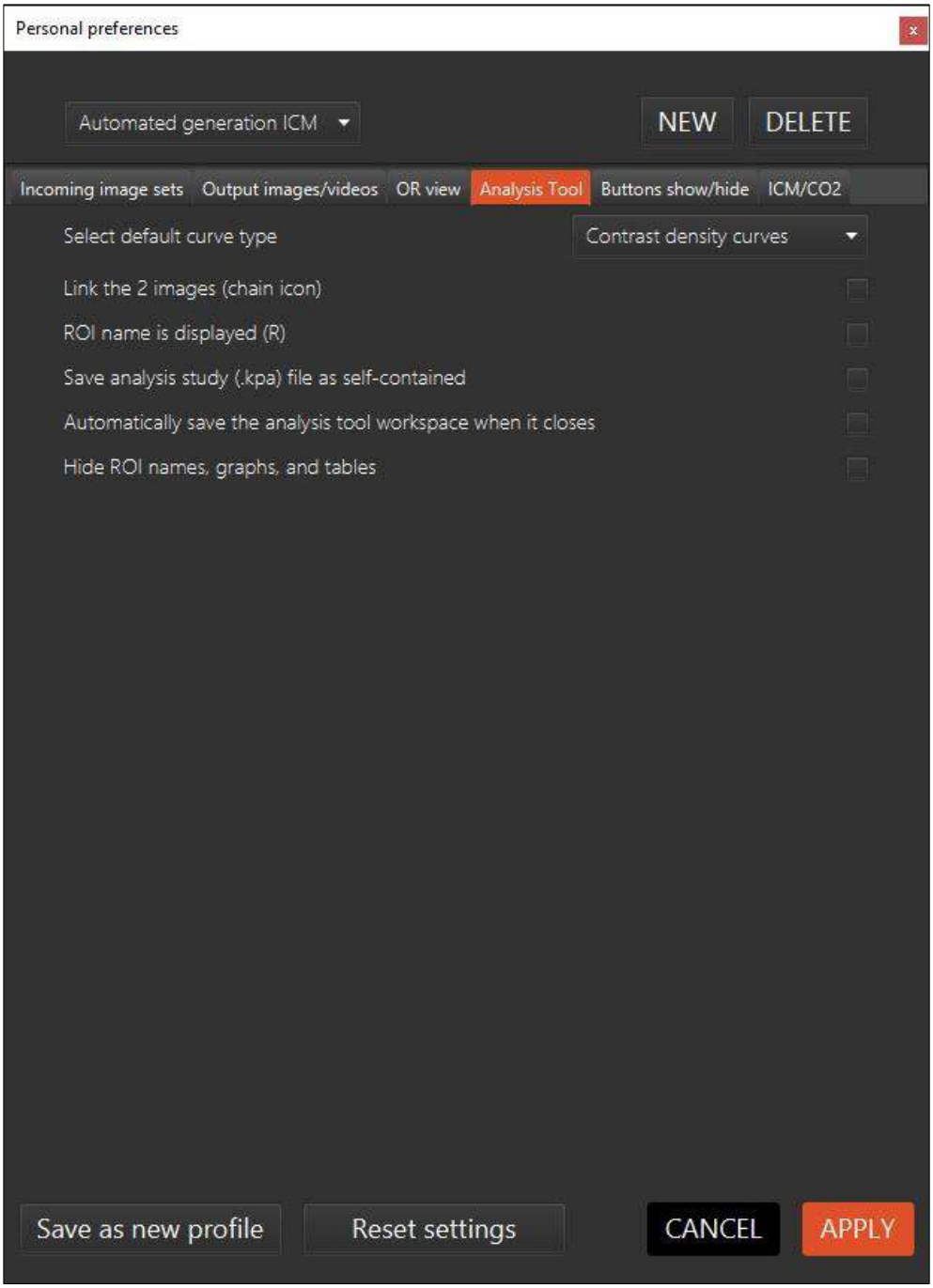
i	The user can customize that the OR view will automatically open when open the KMIT software.

‘Rollback image’

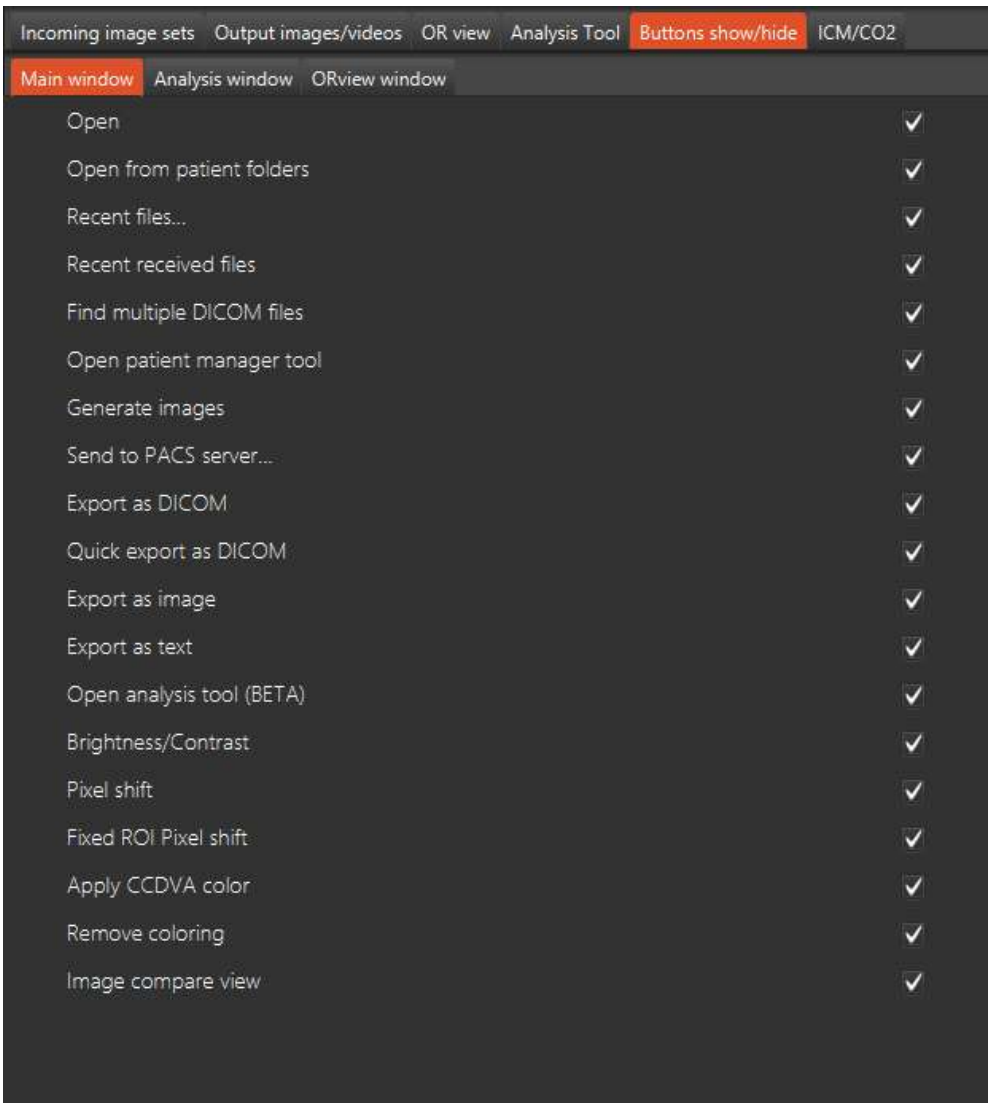
This function allows the user to compare the images/videos in the current workspace to images/videos in recent workspaces from the same patient (for example to compare images and see the results of vessel dilation). The user can set up the function in the personal preferences, which would change how many recent workspaces, and which type of output images or videos are accessible this way. One possible solution is replacing the displayed image with the image that generated from the last image set by clicking on a - icon or with image which generated from next image set by clicking on a + icon at the OR view. The other way is the thumbnail images on the left tool bar of the OR view, when they are clicked, the current image is changing to the image that was generated earlier.

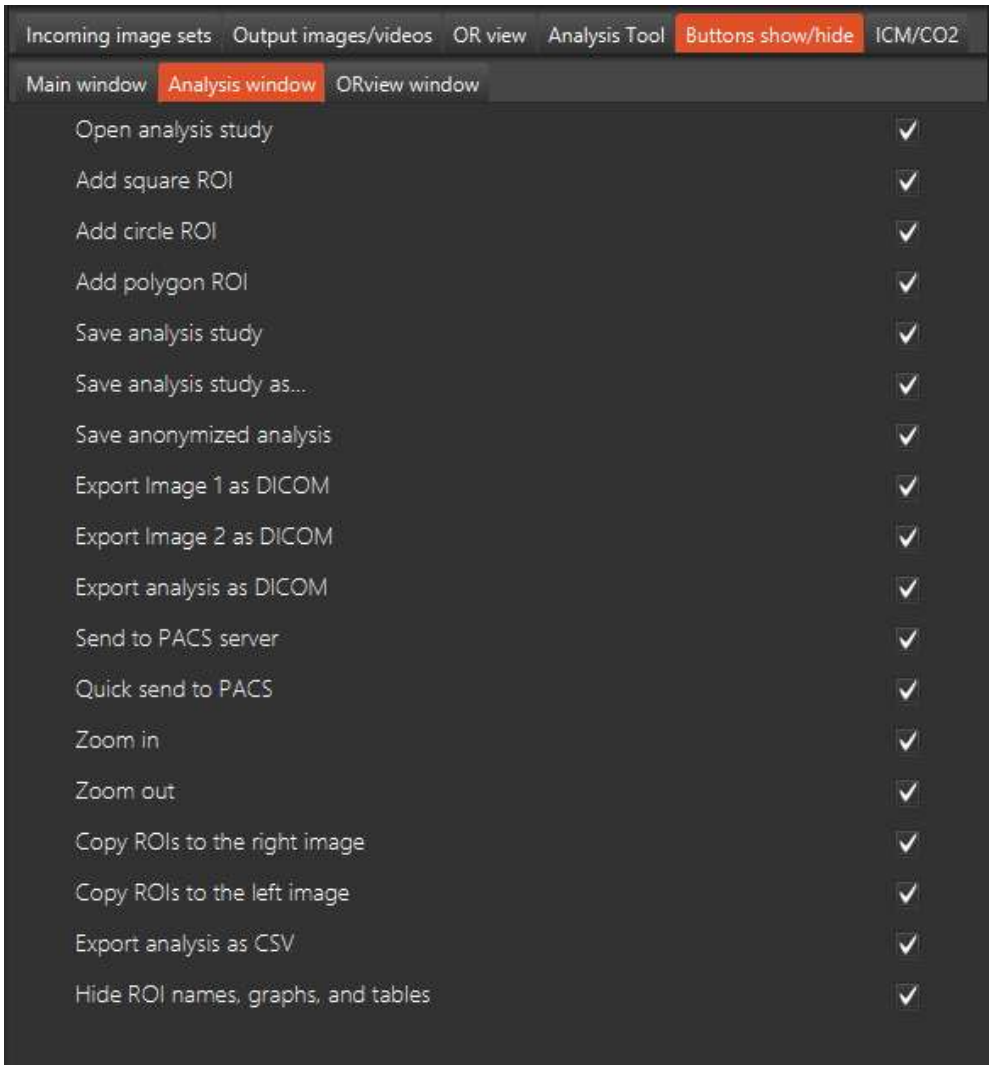
⚠	Analysis Tool is further detailed in chapter 16.

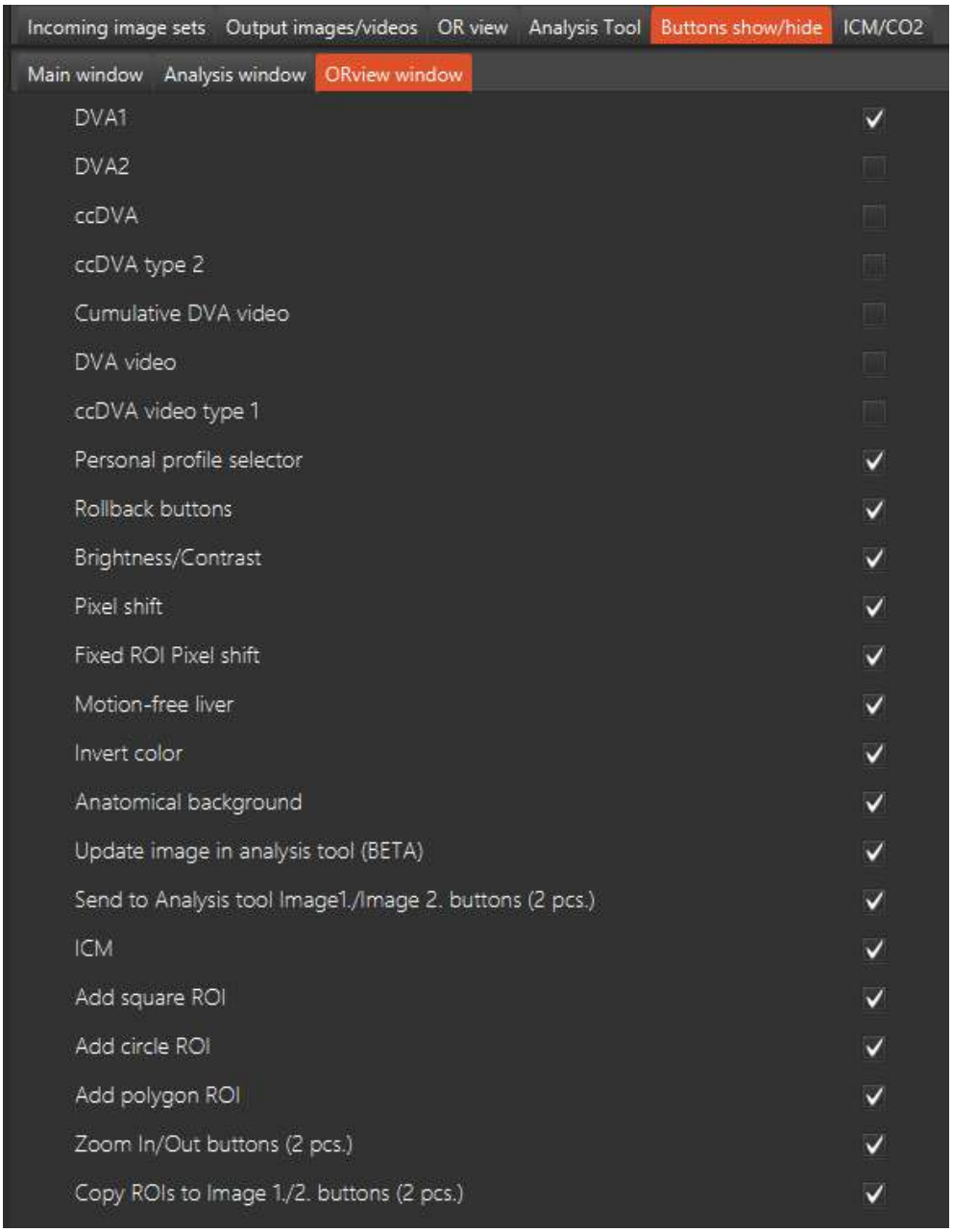
Analysis tool:



Buttons show/hide:

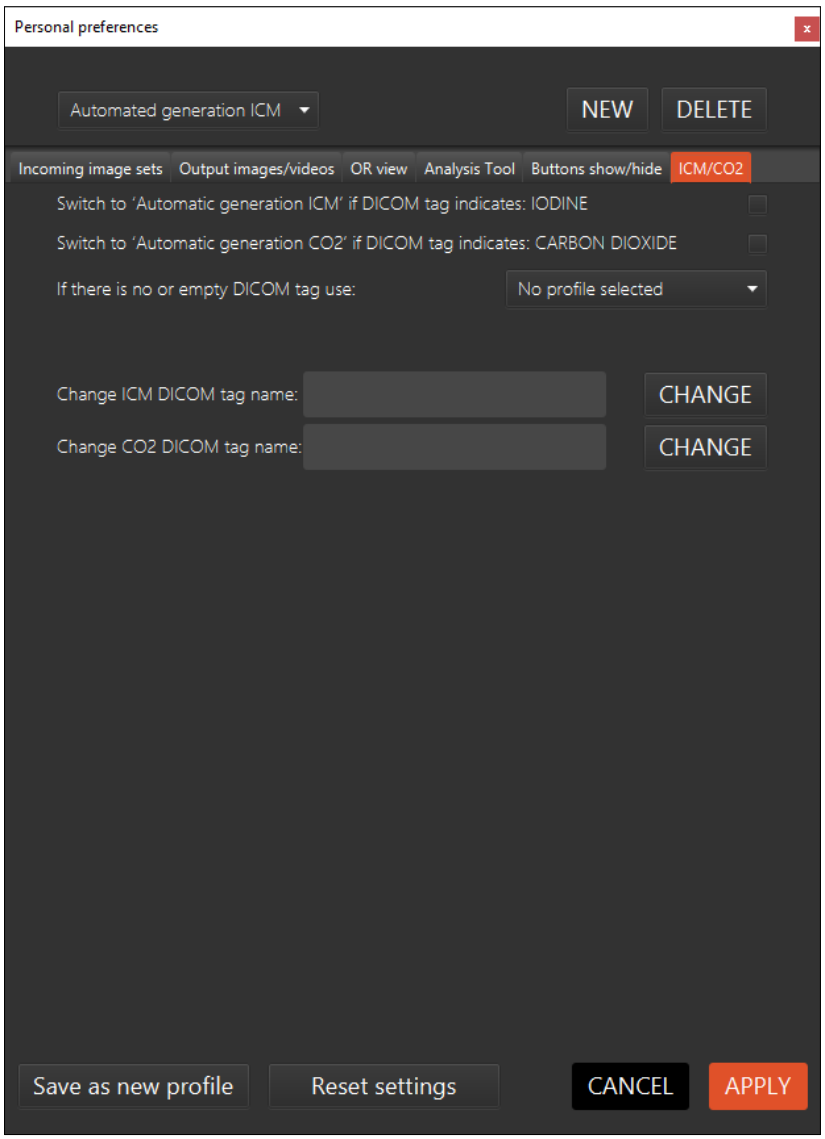



Incoming image sets
Output images/videos
OR view
Analysis Tool
Buttons show/hide
ICM/CO2
Main window
Analysis window
ORview window
Open analysis study
Add square ROI
Add circle ROI
Add polygon ROI
Save analysis study
Save analysis study as...
Save anonymized analysis
Export Image 1 as DICOM
Export Image 2 as DICOM
Export analysis as DICOM
Send to PACS server
Quick send to PACS
Zoom in
Zoom out
Copy ROIs to the right image
Copy ROIs to the left image
Export analysis as CSV
Hide ROI names, graphs, and tables


Incoming image sets
Output images/videos
OR view
Analysis Tool
Buttons show/hide
ICM/CO2
Main window
Analysis window
ORview window
DVA1
DVA2
ccDVA
ccDVA type 2
Cumulative DVA video
DVA video
ccDVA video type 1
Personal profile selector
Rollback buttons
Brightness/Contrast
Pixel shift
Fixed ROI Pixel shift
Motion-free liver
Invert color
Anatomical background
Update image in analysis tool (BETA)
Send to Analysis tool Image1./Image 2. buttons (2 pcs.)
ICM
Add square ROI
Add circle ROI
Add polygon ROI
Zoom In/Out buttons (2 pcs.)
Copy ROIs to Image 1./2. buttons (2 pcs.)

ICM/CO2

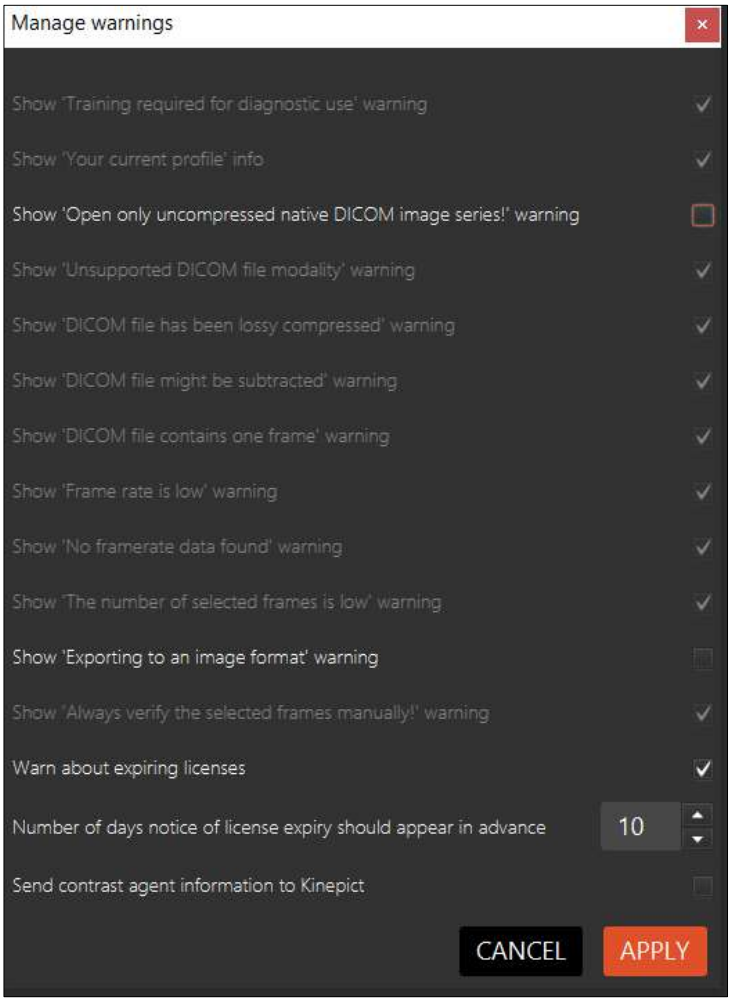
Automatic profile changing option – CO_2 & ICM intervention



The Kinepict software will be able to

- recognize the contrast material type of the arrival image (from the angiography device) is ICM or CO2 - possible from the DICOM tag and the different intensity
- according to do the automated generation with the proper automatic image manipulation.

12.1.3.3 Manage Warnings



Here you can manage your warnings

⚠	All these changes are undoable.

12.1.4 Help menu

‘User manual’

The user from this option could open the user manual of the software in .pdf format.

‘Terms of service’

Find the terms of service here.

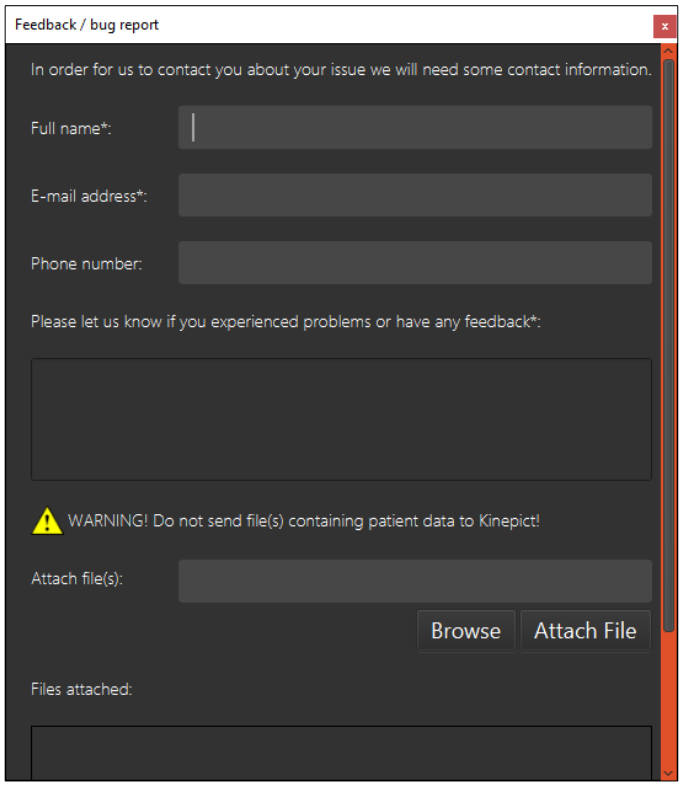
‘About’

Provides the latest information regarding the software.

‘Hotkeys’

Pops up a table containing the hotkey combinations to facilitate faster work. User can customize the hotkeys.

’Send feedback or report a bug’



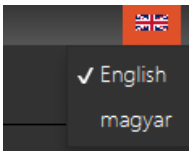
Please send feedback and bug reports to the support team via email.

Send your feedback to us. Every field marked with an asterisk is mandatory.

⚠	Never send us patient data! Please also check images for patient details!

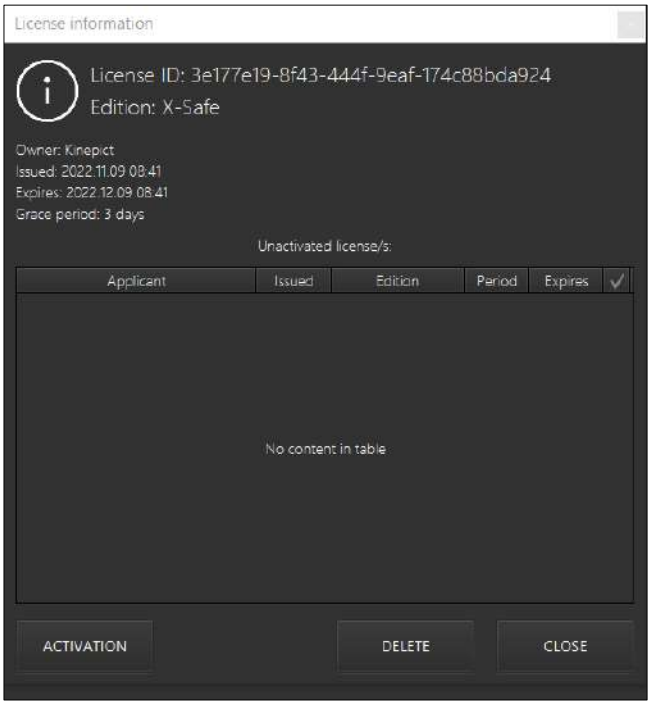
‘Language’

The software includes Hungarian translation next to the English. This selection available from the right top on the main window, there the user can choose between these two languages (flag icon).



‘View license’

The user can double check the license details and the time left of their license. Here the user can see what license he/she has, also the expired license too.



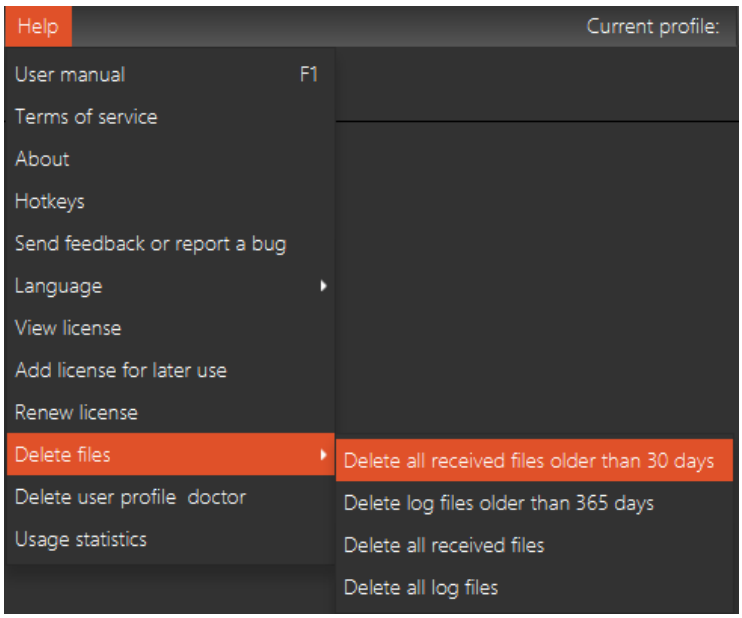
’Add license for later use’

Use this feature to request a new license and store it in the user’s local store. During the next license activation, the license will be automatically loaded, but will require a restart of the application. If you run out of your license, it will not turn off during operation.

’Renew license’

Request a new license after logging in to the license request site.

’Delete files’



- ‘Delete all received files older than 30 days’

Delete all files in your received files folder which is older than 30 days.

- ‘Delete all log files older than 365 days’

Delete all log files which are in your log files folder and older than 365 days.

- ‘Delete all received files’

Delete all files in your received files folder.

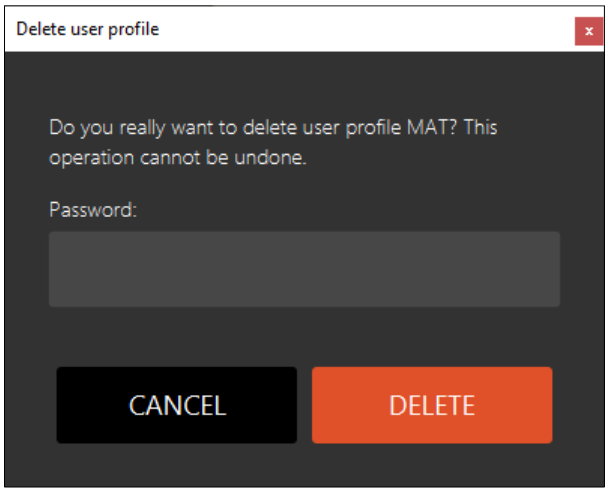
⚠	By clicking ‘delete all received files’ you will also delete patient data!

- ‘Delete all log files’

Delete all log files which are in your log files folder.

‘Delete user profile’

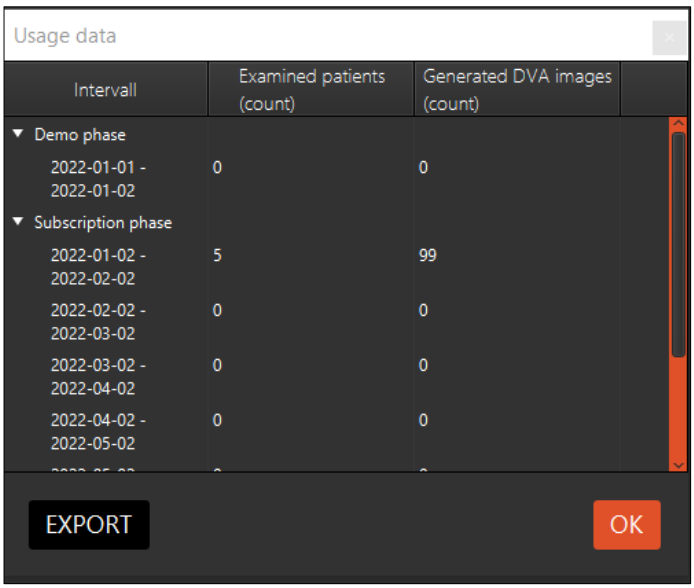
To permanently delete a user, choose Help menu – Delete user profile. You will be able to delete the profile which is currently using the software, and have to provide the password for this action.



⚠	Deletion cannot be undone, and user cannot add profile with the same username!

If you want to delete your user preferences, please see Personal Preferences settings.

'Usage statistics'



The software is able to make the number of examined patients and generated images available for the Kinepict's representative and for the user.

13 Image processing toolbar

The image processing toolbar is a vertical toolbar located below the main menu.

Gadget that shows the position of the mouse pointer

'Open' (collection of buttons) - Click on this icon with right mouse button to select one kind of open procedure. . This group contains the next open types:

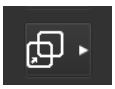
- 'Open file(s)'
- 'Open from patient folders'
- 'Recent files'
- 'Recent received files'
- 'Find multiple DICOM files'
- 'Open patient manager tool'

'Generate images' - Click this icon to start calculating the DVA1 and the related images specified in the 'Personal preferences'. This icon is also located between the 'Select all' and 'Deselect all' buttons when the input images are displayed.

'Send to PACS server..'.

'Export' (collection of buttons) - Click on this icon with right mouse button to select one kind of export procedure. This group contains the next open types:

- 'Export as DICOM'
- 'Quick export as DICOM'
- 'Export as image'
- 'Export as text'


'Pixel shift' (collection of buttons) - Click on this icon with right mouse button to select one kind of pixel shift procedure. This group contains the next open types:

- 'Pixel shift'
- 'Fixed ROI Pixel shift'
- 'Motion-free liver'

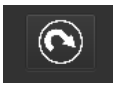
'Apply ccDVA color' (the other option next to this the 'Remove coloring')

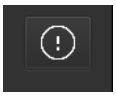
'Brightness/contrast'

'Open the Analysis Tool (BETA)'

‘Open compare image in a big size window’

‘Undo’

 ‘Redo’

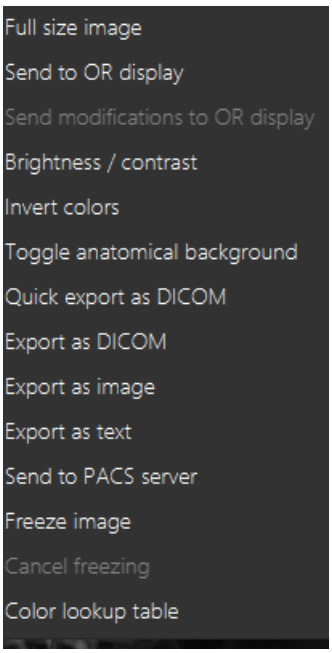
 ‘Warnings/Errors’ - The list of warnings and errors. The list shows the timestamps, labels and descriptions of the errors/warnings, and also shows the path of the file that was in the workspace as an input file while the error happened. The user is notified through the lighting up of the exclamation mark button and new errors/warnings previously not seen will be highlighted in the list. The user can clear unneeded items from the list and can export the rest into txt format, if the user wishes so.

License expiration

i	Moving the cursor to the button and it will light up orange.

14 Context menu

By right clicking on the image, you can reach the Context menu with the following functions:



’Full size image’

Use this feature to magnify the image to full size in a separate window.

‘Send to OR display’

User can send the image to the operating room’s display

‘Send modifications to OR display’

User can send the modificated image to the operating room’s display

‘Brightness/Contrast’

Change the brightness and contrast of the images.

’Invert Colors’

The user can create inverted images by clicking on Edit / Invert colors. The hotkey for this post processing step is Ctrl + w.

‘Toggle anatomical background’

User can toggle the anatomical background on the generated kinetic image. At the Personal preferences tab the user can set the opacity of the anatomical background via a spinner between 0 and 100. It sets the opacity for grayscale images, and the ccdva image and video.

‘Send to PACS’

User can send the images to PACS.

‘Quick export as DICOM’

User can export the image as DICOM directly

’Export as DICOM’

Allows the user to save the generated images in DICOM format.

’Export as image’

Use this option to save results in various picture file formats.

’Export as text’

This option allows for saving the generated images as tab-delimited text of floating-point precision intensity values for each pixel.

’Freeze image’

User can display the image in its current state in the place of the other image. This new image won’t change when post processing is applied to the original one, but the user can cycle through all the states of the image, since the Freeze image function was started. This way the user can compare image states before and after post processing.

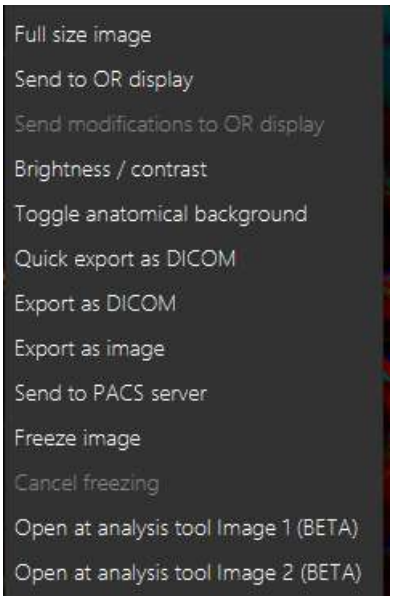
’Cancel freezing’

This option will display the original type of output in the place of the Frozen image, and clear the stored image states.

By right clicking on the colour-coded DVA image, you can reach three extra options which is belong to the Analysis Tool.

‘Color lookup tables’

Use this to enhance visualization using custom color lookup tables.



’Open at analysis tool Image 1 (BETA).// Open at analysis tool Image 2.(BETA)’

This option allows for the user open the ccDVA images to the Analysis Tool. The user should be choose one ccDVA image before the intervention and the other should be after the intervention.

⚠	This function is in BETA mode, not suitable for diagnostic purposes

15 Workspace

⚠	When using for the very first time, the user shall always test every necessary function before trying to use them on a patient.

The most significant component of the software is the workspace where DVA1, ccDVA, and Anatomical background images are generated. Unprocessed DICOM image series are loaded and shown in this window together with the patient’s data. ‘Show’ and ‘Hide’ allow the user to toggle between showing and hiding the unprocessed images and clicking ‘Details’ revealed more information about the currently loaded DICOM file.

The number in the lower left corner of the workspace indicates the days left before the expiration of the current license. You can request a new license using 'Request license' in the Help menu.

15.1 Using the Software

15.1.1 Opening a file

Open a DICOM file to begin data analysis images.

- Open DICOM file(s)

  File / Open / Open file(s)
- Open a directory

  File / Open / Open directory of frames
- Find multiple DICOM files

  File / Open / Find multiple DICOM files
- Open patient manager tool
- File / Open / Open patient manager tool

i	For easier navigation between image series in ● Recent files ● Recent received files the user see DVA1 image previews before the image is selected for open.

After loading the selected DICOM data, the name of the file shows in the title bar. The 'Generate images' icon appears in the toolbar and also between the 'Select all' and 'Deselect all' buttons. In the frame below this, you can walk through the raw image data frame-by-frame, or click 'Play/Pause' to watch the data as a movie.

Use 'Select all'/'Deselect all' or click individual frames to include or exclude images in the data analysis. Selected images have an orange frame.

⚠	Only raw dicoms can be used for generation compressed or modified image series generation will result in low quality generated images.

i	Double click on the selected frame it will open in a new window, in bigger size.

User friendly frame selection

After a file was opened (but before DVA generation) the user shall be able to choose the frames for image and video generation.

Improvements:

- Shift+Left mouse button: interval selection on the frames

- Select Range box: Place a box next to the Select All button on the left side in which the user can define the frames by numeric input, E.g.: 1, 4, 7-10 = DVA is generated from 6 frames total (frames: 1, 4, 7, 8, 9,10).

- Select contrast: contrast agent detection to deselect leading frames to save on generation time and delete motion artefacts in those frames.

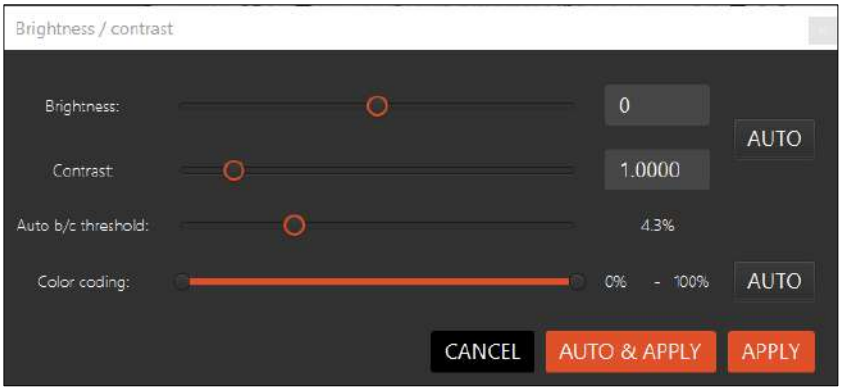
15.1.2 Image processing

Start image processing by clicking on the 'Generate images' icon. Please note, that the Kinepict software supports files only with the (0008) and (0060) modality DICOM attributes:

- XA (X-ray Angiography)
- DX (digital radiography/digital X-ray)
- RF (radio fluoroscopy).

The software can generate DVA1 and various DVA1-related images. The DVA1 is always generated, and you can set what other images to calculate in the 'Personal Preferences'.

Under the Brightness/Contrast menu the user can manipulate the start and end of color coding of a ccDVA image. The coloring represents the arrival latency of the contrast media according to the visible light's color spectrum. First color: red, last color: deep blue/purple.

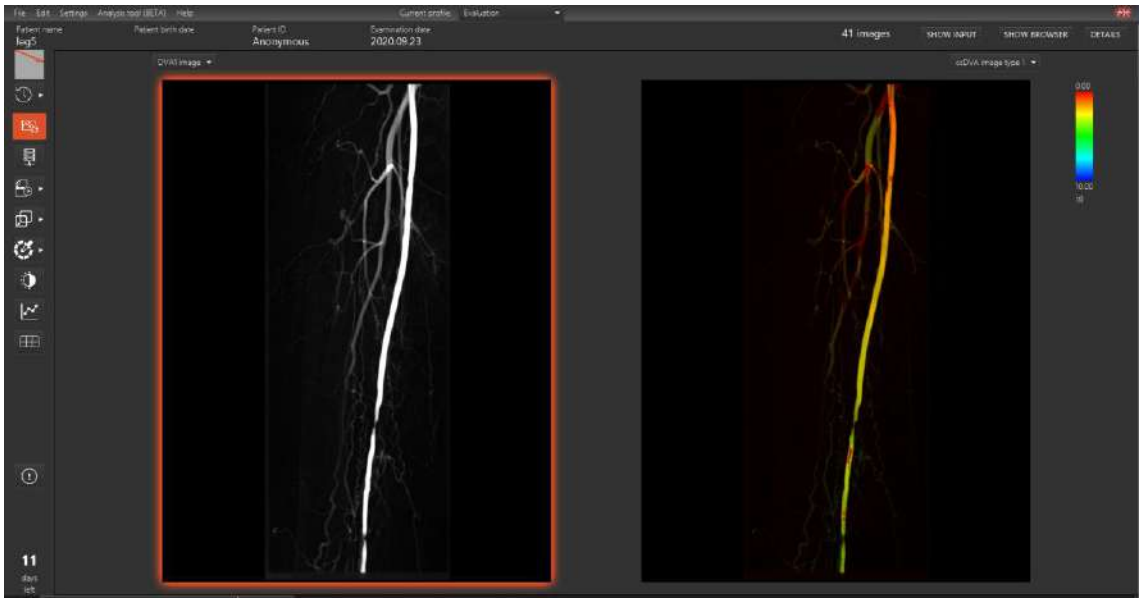


The software gives a warning message if you attempt to generate a DVA1 image from an unsupported modality, but you can skip the warning and perform the calculation.

i	The active slider's button appears in orange color.

⚠	Kinepict Health Ltd will not take any responsibility for images generated from unsupported modality.

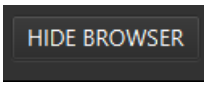
Optional image post-processing:



i	Roll-back mosaic view is a new browser makes is easier to move between recordings of the case.

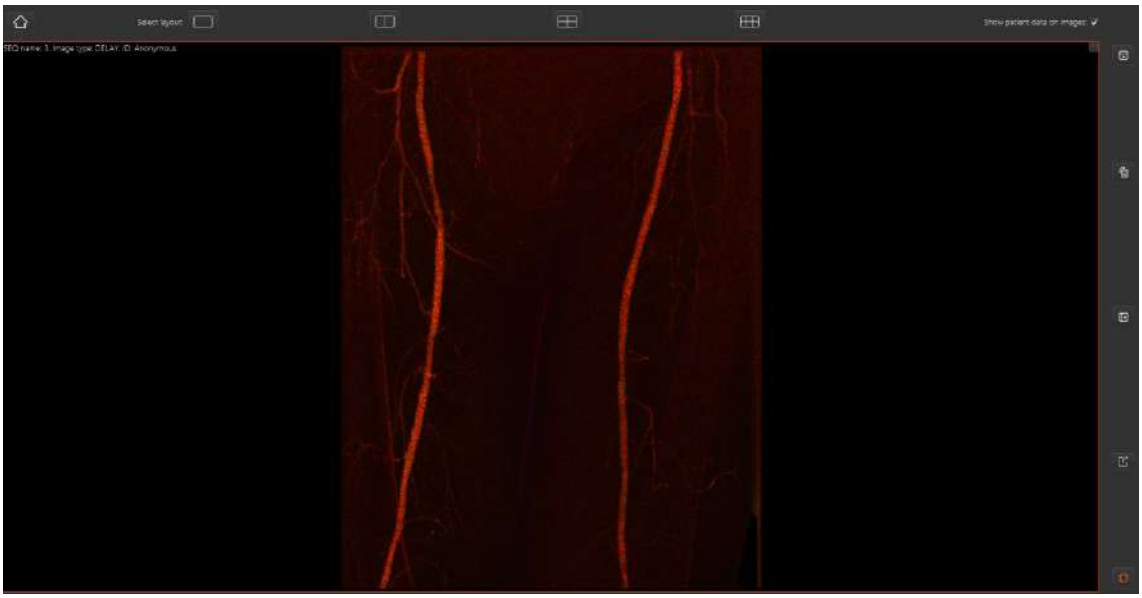
‘**OR view live’:** If the user does some image manipulations in the main screen with this button can syncronize the modification to the OR view

The user can switch between the frame selection and the main screen window.



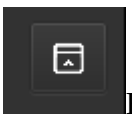
The user can switch between the main screen and the roll-back mosaic view window.

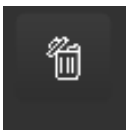
i	In the main screen the user clicks on the image twice the compare view will appear, if the roll-back function is not switched.



Layout selection

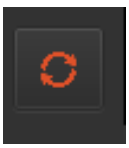
If the user clicks on the ‘house’ icon it to return to the main window.

 Hide header

 Remove selected images from layout

Hide roll-back column

Export screen as…

 Refresh images in scrollable list

Adjust brightness and contrast

Modify the brightness and contrast of the generated images by dragging the cursor with the mouse or by using the Brightness/Contrast window.

Dragging the cursor with the mouse:

- click-hold in the picture,
- drag the cursor horizontally to change brightness,
- drag the cursor up and down to improve contrast.

To use the Brightness/contrast window click 'Edit' / 'Brightness/contrast', or click on the 'Brightness/contrast' icon in the Image Processing Toolbar, or right-click in the image and then select the 'Brightness/contrast' option from the pop-up list.

To undo changes, press Ctrl+Z, or use Edit / Undo.

i	Post Processed images and patient data can also be shared on the screen in the operating room with all the patient data included.

Invert Colors

Create inverted images by clicking on ‘Edit’ / ‘Invert colors’ or use the Ctrl + w hot key.

Pixel Shift

Use the Pixel shift to remove movement-related artifacts e.g. the unintentional movement of the examined body part. Select the critical area by click and drag. Selecting smaller critical areas results in shorter computing time.

Distance comparison

Click and drag while holding down the Ctrl key to measure the apparent distance between the two endpoints. Please note, that this is an estimated value that is not for diagnostic purposes. If you select two pairs of points, the ratio between the two apparent distances is calculated.

CropClick and drag while holding down the Shift key to select an area. Releasing the shift and the mouse button opens a popup window with the selected part of the image magnified. The small original image indicates which area was magnified.

i	Pixel shift can always be undone

Saving results

There are three methods to save image processing results:

Export as image

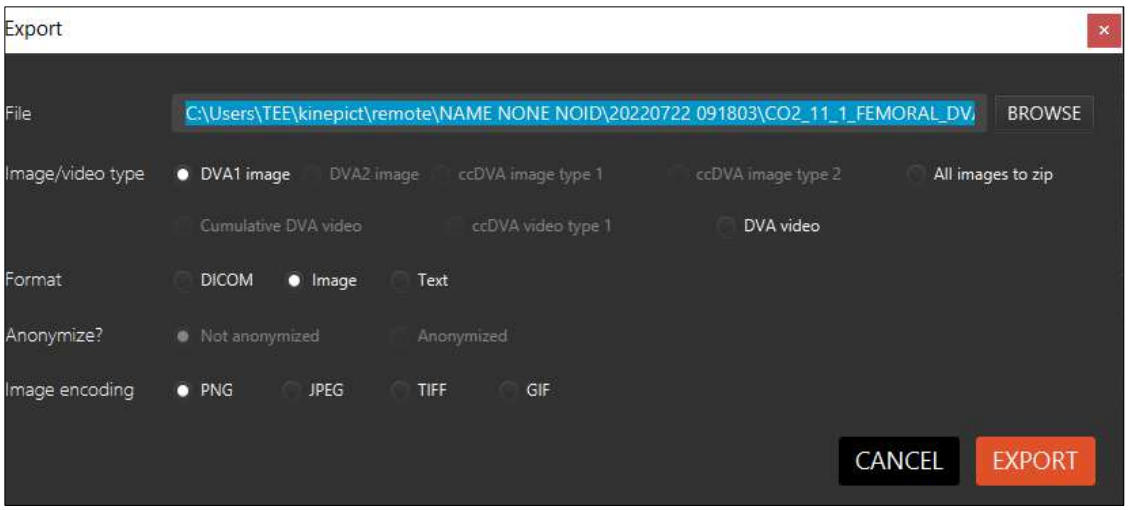
Choose 'File' / 'Export' / ‘Export as image’ to save your data in a picture file format. Results can also be saved by right-clicking on the images and choosing ‘Export as image’.

Export as DICOM

Choose 'File' / 'Export' / ‘Export as DICOM’ to save your data as a DICOM file. Results can also be saved by right-clicking on the images and choosing ‘Export as DICOM’. DICOM images can be saved with the patient data or even as an anonymized file.

Export as a Text file

Choose 'File' / 'Export' / ‘Export as text’ to save your data as a tab-delimited text of floating-point precision intensity values for each pixel. Results can also be saved by right-clicking on the images and choosing ‘Export as text’.



Sending DICOM files to PACS servers

Use the 'Settings' / 'Network and file settings' / 'PACS servers' tab to manage PACS servers. To add a new PACS server click 'Add new', enter the host IP address, port number and application entity (AE) title, and click 'Save'. You may also edit existing PACS server information after clicking 'Update'.

To send data to the PACS server, open the DICOM file or directory, generate images, and click 'File' / 'Send to PACS server'. Select the PACS server and the images to send, then click 'Send'. Once the image was saved, a confirmation po p-up window, from which the user can also open the sent image.

Sending DICOM files to the Kinepict desktop machine

After the proper configuration of the IP addresses, the Kinepict Medical Imaging Tool can read DICOM input data directly from the DICOM port of an X-ray angiography machine. The processed images and patient data can be sent on a display in the operating room.

The steps of the configuration are the following:

1) Settings within the software:

   Choose the ‘Edit’ / ‘Network and file settings ’ / ‘Networking’ tab check the 'DICOM port enabled' checkbox, and set the port number and application entity (AE). Restart the software after these changes.

2) Settings of the X-ray machine’s software:

   Configure the IP address of the X-ray machine according to the port and AE title set in the Kinepict Medical Imaging Tool.

   After a successful configuration, the software automatically reads the output of the X-ray instrument after every X-ray capture. The software notifies the user in a popup window where the file can be accepted or rejected. After receiving the data, everything works the same way as with DICOM files opened from the hard drive. We recommend configuring the connection between the X-ray machine and the Kinepict Medical Imaging Tool with the help of our field application scientist, the IT professional of the hospital and the IT professional of the X-ray machine manufacturer.

16 ccDVA Analysis Tool (BETA)

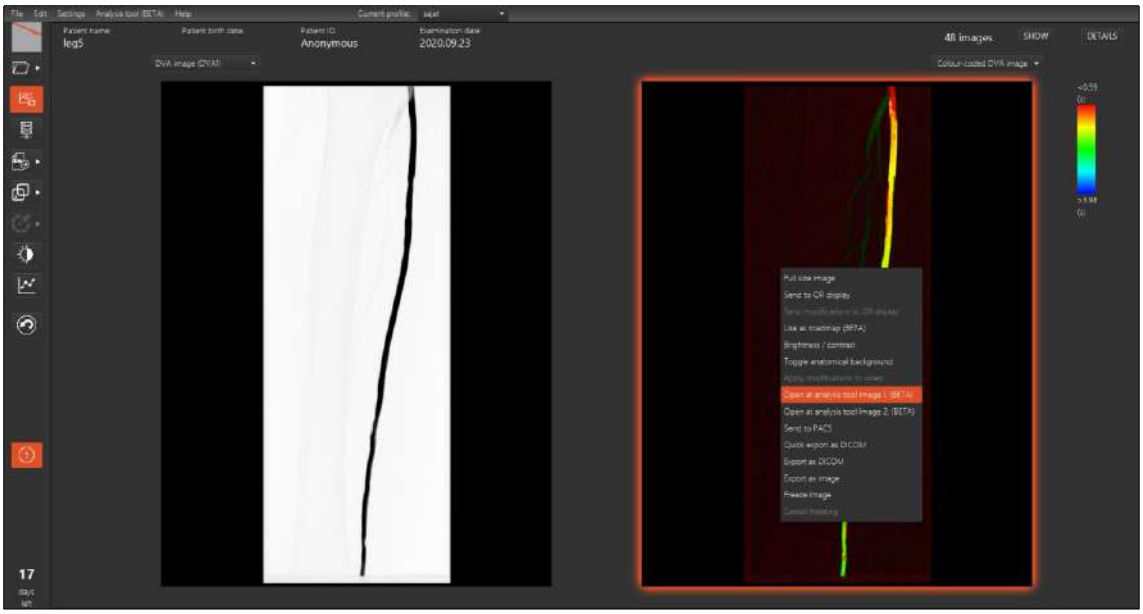
⚠	This function is in beta version, do not use for diagnostic purposes. Kinepict Health Ltd will not take responsibility for any damage caused by users not used properly.

ccDVA Analysis Tool’s (as AT) main aim is to compare the ccDVA images which are taken before the intervention and after it.

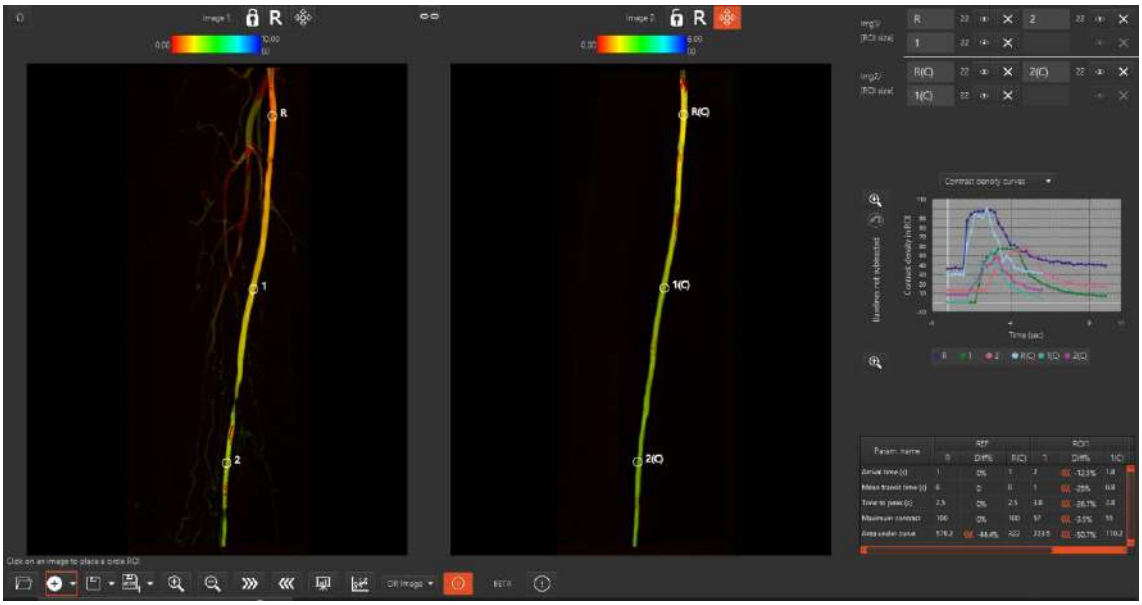
16.1 Open file(s) to the Analysis Tool

The user can open the generated ccDVA image and right-click to choose “open to analysis tool Image 1.” The ccDVA image will be opened in the new window, in the Analysis Tool.

For the comparison it is important to open the post-intervention image in Analysis Tool as Image 2. The user can open this generated ccDVA image in the same way like at Image 1., just choose at right-click menu “open to analysis tool Image 2.

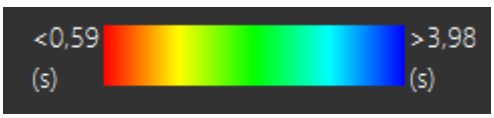


If the user opened the Analysis Tool with loaded images (this is the new window next to the Workstation), the two images can be seen on the left side, graph and table on the right and there are some function buttons on the bottom. The buttons have got pop-up window if the user drags the mouse on the icon which appears and describes the function of those.



16.2 The buttons on the Analysis Tool screen

a) The buttons on the top of the images



Colour scale shows the arrival time of the contrast agent.

Lock: Locking an image with the padlock icon will prevent loading a new image in its place.

R: Use the 'R' icon to turn off the display of ROI names. This way, ROIs with long names placed close together will be clearly visible.

Move all ROIs at the same time

Chain: When the chain icon is interlinked, the two images can be dragged at the same time and you will always see the same area when you zoom in on the images.

b) The buttons on the bottom of Analysis Tool

Folder icon for opening the analysis study (.kpa files- Kinepict analysis study)

Square ROI icon (‘Add selected ROI type’ button group member)

Circular ROI icon (‘Add selected ROI type’ button group member)

Polygon ROI icon (‘Add selected ROI type’ button group member)

i	The user can change the ROIs size with moving the mouse’s scroll wheel.

Save analysis study (‘Save with selected type’ button group member)

Save analysis study as (‘Save as Kinepict analysis study (*.kpa))

: Save anonymized study as (‘Save as anonymized Kinepict analysis study (*.kpa))

Export image 1 as DICOM (‘Export as DICOM’ button group member)

Export image 2 as DICOM (‘Export as DICOM’ button group member)

Export analysis as DICOM (‘Export as DICOM’ button group member)

Send to PACS (‘Export as DICOM’ button group member)

Quick send to PACS

Zoom in icon

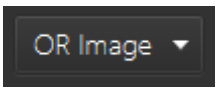
Zoom out icon

Copy ROIs to the right image

Copy ROIs to the left image

Export analysis as CSV

Hide/Show ROI names, graphs and tables



At this drop-down menu the user can be selected what they would like to see on the OR view; OR image, Image 1, Image 2, Details

Information icon: if the user opens this window, they can get some information from the selected items description.

i	It is a useful icon for the user to find about the functions’ description of the

	Analysis Tool.

Here you can manage your warnings

c) The functions on the right side of the Analysis Tool

If the user puts the ROIs on the selected section on the anatomical formulas, these ROIs appear on the right side of the AT.

i	Max 4 ROI pairs can be defined

The following two icons allow the user to manage the selected ROIs

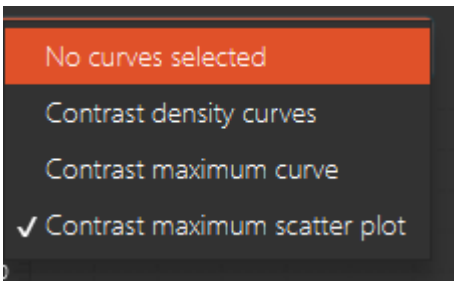
Eye: The visibility of the curves associated with a given ROI can be toggled on and off in the graph using the eye icon.

X: Click on the 'X' icon to delete the ROI. In this case, the ROI and all associated values will be removed from the table and graph.

i	The user can change the name of the ROIs on this section.

The graphs and tables represent the ROIs pre-ccDVA and post ccDVA values.

16.3 The graphs



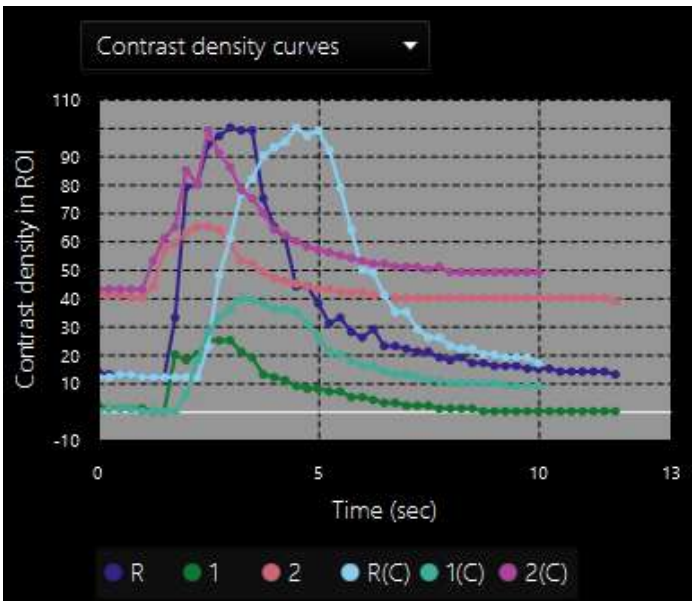
There are four option in the drop-down menu; no curves selected, contrast density curves, contrast maximum curves and contrast maximum scatter plot. There an is undo function next to this drop-down menu.

Baseline subtraction: Click on the selected value in the contrast density graph to initiate a baseline subtraction. This can be undone by pressing the back arrow. This is particularly useful on the curve associated with the reference (R) ROI.

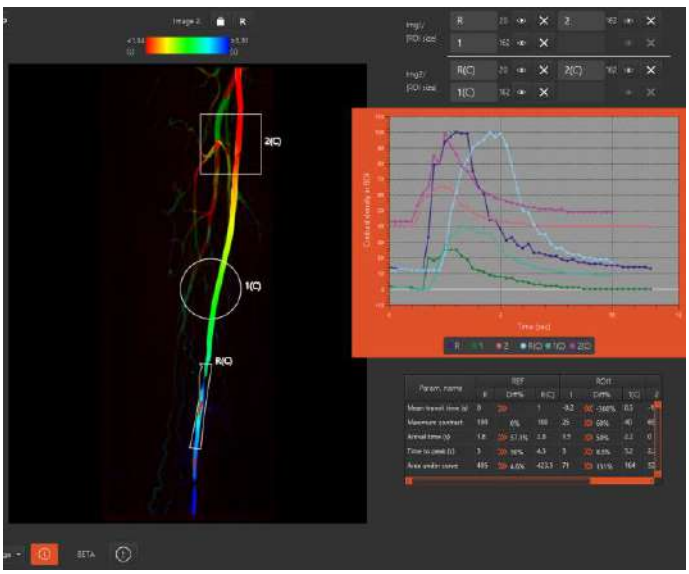
Contrast density curve: The contrast density curve shows contrast intensification against time for each ROI; f(time)=intensity.

Contrast maximum curve and scatter plot: The contrast maximum curve represents the time needed to reach maximum opacification in ROI. The contrast maximum scatter plot represents the same values. If the ROIs are placed on the blood vessel in line with the blood flow, use the contrast maximum curve. Otherwise, if the ROIs are placed regardless of the direction of blood flow, use the contrast maximum scatter plot.

i	The user can zoom in the graph with this symbol.



After the user clicks the zoom in icon (this function is available only at contrast density curves).



16.4 The tables

Param. name	REF			ROI1			ROI2		
	R	Diff%	R(C)	1	Diff%	1(C)	2	Diff%	2(C)
Mean transit time (s)	0	›››	1	-0.2	‹‹‹ -300%	0.5	-1.8	‹‹‹ -57.1%	-0.8
Maximum contrast	100	0%	100	25	››› 60%	40	65	››› 52.3%	99
Arrival time (s)	1.8	››› 57.1%	2.8	1.5	››› 50%	2.2	0	›››	1
Time to peak (s)	3	››› 50%	4.5	3	››› 8.3%	3.2	2.2	››› 11.1%	2.5
Area under curve	405	››› 4.6%	423.5	71	››› 131%	164	537	››› 10.6%	594

The table contains the comparison of the two images' ROIs.

The following parameters:

Arrival time (s): Amount of time needed to achieve 50 percent contrast intensity for a given ROI

Mean transit time (s): Difference between the arrival time of the examined ROI and reference ROI

Time to peak (s): Time needed to reach peak opacification for a given ROI

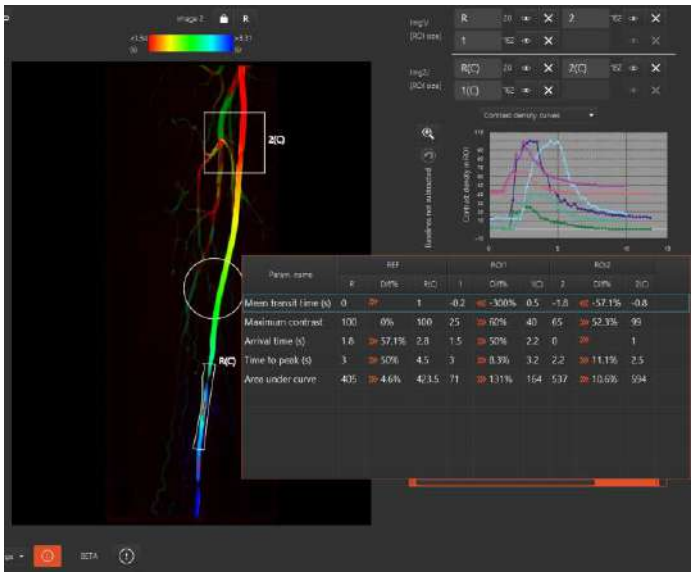
Maximum contrast: Value of maximum pixel intensity for a given ROI

diff%: Percentage difference between the two ROIs

(C): represents that the ROI was copied

i	The user can zoom in the tables with this symbol.

After the user clicks the zoom in icon.


Contrast density curves
Param. name
REF
ROI1
ROI2
Mean transit time (s) 0 1 -0.2 -300% 0.5 -1.8 -57.1% -0.8
Maximum contrast 100 0% 100 25 60% 40 65 52.3% 99
Arrival time (s) 1.8 57.1% 2.8 1.5 50% 2.2 0 1
Time to peak (s) 3 50% 4.5 3 0.3% 3.2 2.2 11.1% 2.5
Area under curve 435 4.6% 423.5 71 131% 164 537 10.6% 594
BETA

16.5 The OR view

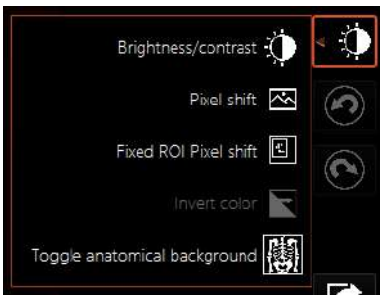
The user can see the OR image, the Image 1/Image 2 of Analysis tool and these pictures' details.

Right-click button groups in ORview (similar to the main window).

Change the 'Current profile'

Switch between the roll-back images

Warnings/Errors' - The list of warnings and errors. The list shows the timestamps, labels and descriptions of the errors/warnings, and also shows the path of the file that was in the workspace as an input file while the error happened. The user is notified through the lighting up of the exclamation mark button and new errors/warnings previously not seen will be highlighted in the list. The user can clear unneeded items from the list and can export the rest into txt format, if the user wishes so.



B/C ; pixelshift ; invert colors ; toggle anatomical background (plus the motion-liver free option if it is available)

Undo and redo

Send to Analysis Tool Image 1.//Send to Analysis Tool Image 2. (BETA)

Video frame stepper:

: 1 frame forward and 1 frame backward

Left mouse click: play/pause

Frame forward/backward: mouse scroll & page up / page down buttons

: ICM/CO2 button (it is an option to switch CO2/ICM threshold from the ORview).

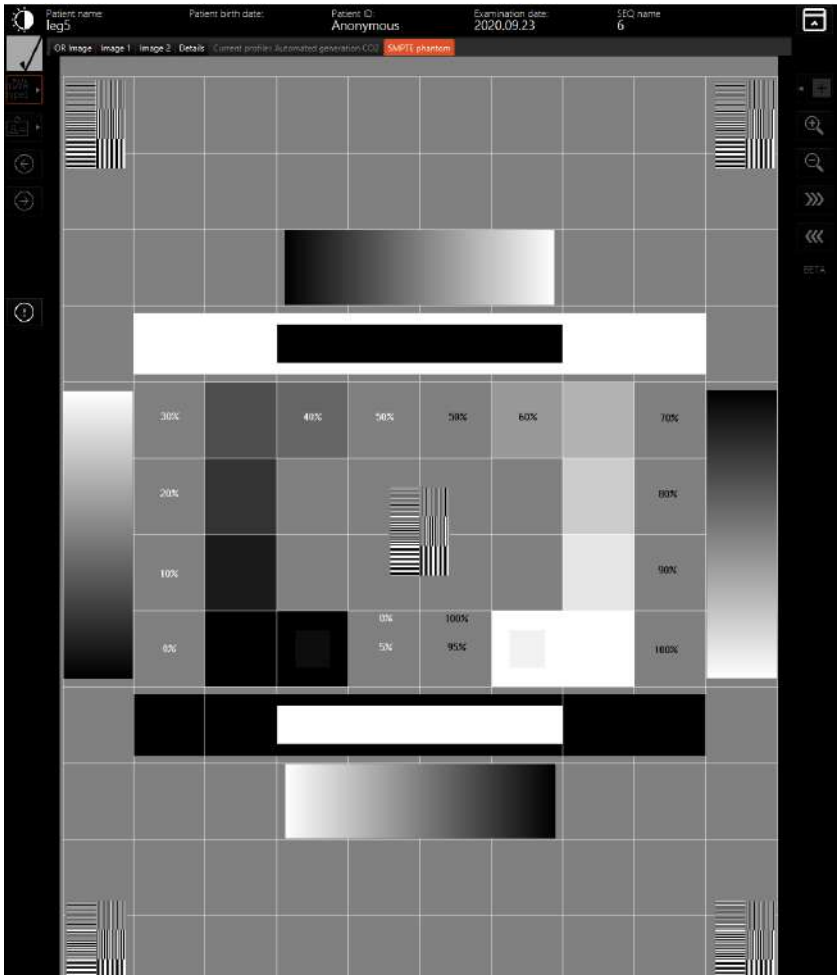
Show/hide header

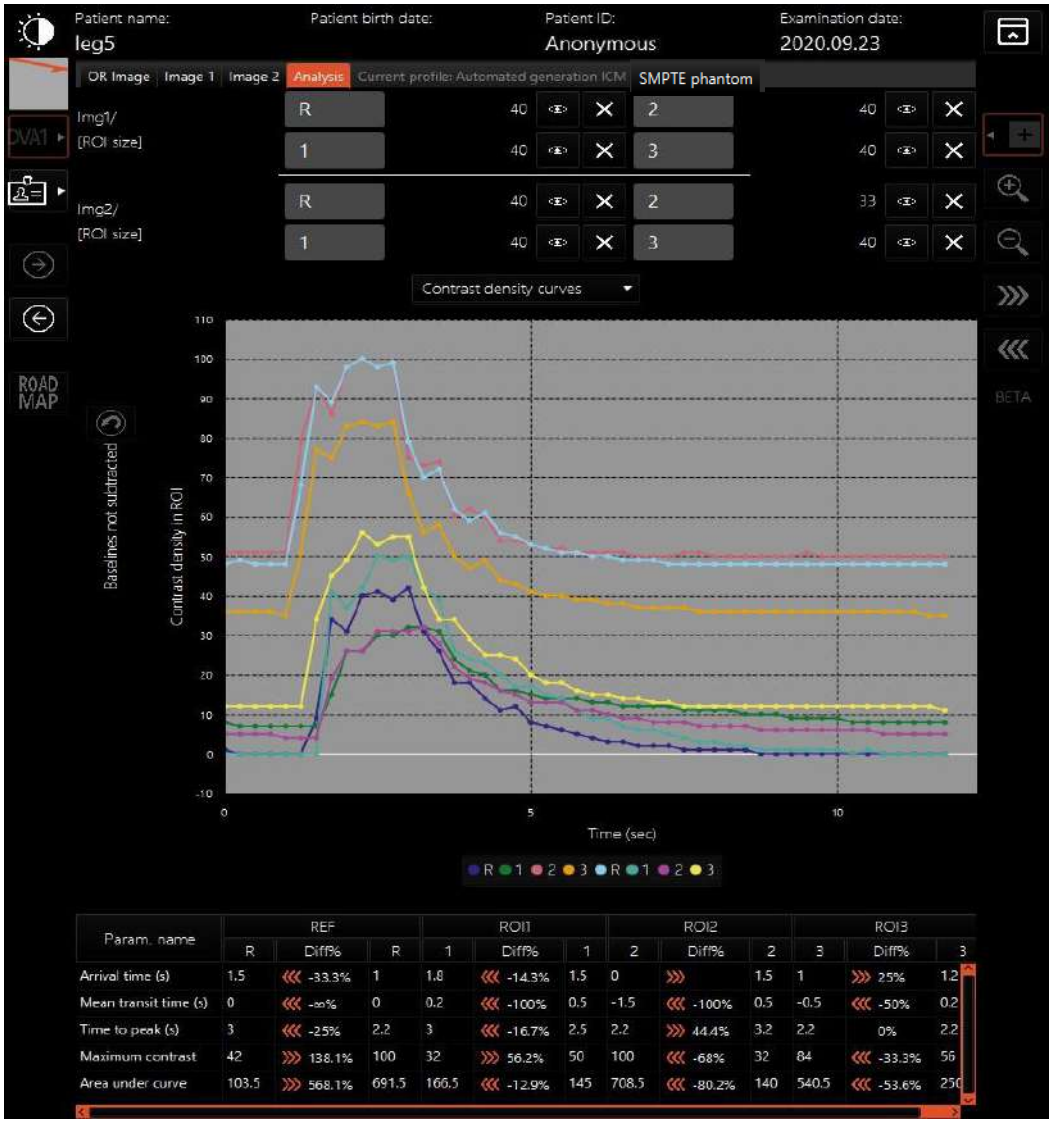
Click on an image to place the selected ROI type
Zoom in
Zoom out

Copy ROIs to the right image

Copy ROIs to the left image

i	The ‘Image 2’tag/window has the same functions as ‘Image 1’.
i	**SMPTE phantom:** SMPTE pattern for adjust and control OR’s view size.
⚠	This SMPTE pattern does not allow to use for the colour calibration.


Patient name:
leg5
Patient birth date:
Patient ID:
Anonymous
Examination date:
2020.09.23
SEQ name
6
OR image
Image 1
Image 2
Details
SMPTE phantom
30%
40%
50%
60%
70%
20%
80%
10%
90%
0%
100%
5%
95%



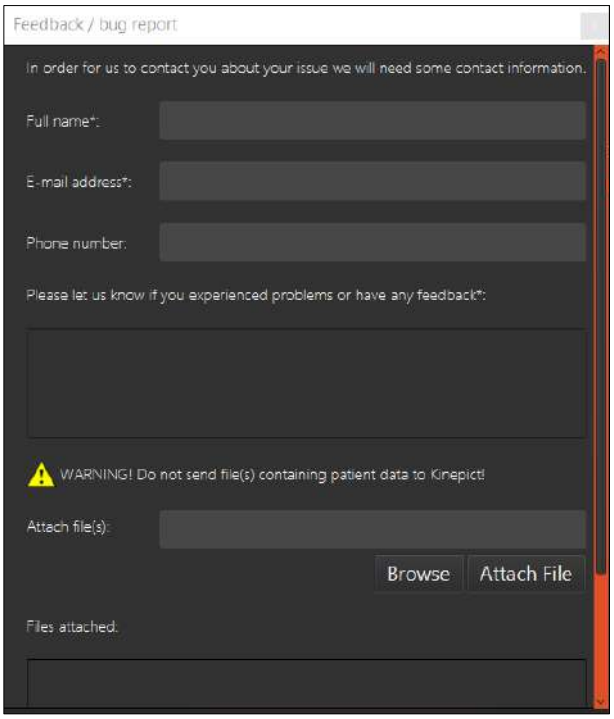
□The ROIs

□The graphs

□The tables

17 Troubleshooting

If you have any questions or issues using Kinepict Medical Imaging Tool, please contact us at info@kinepict.com, or use our 'Send feedback or report a bug' function. You may also find useful the Frequently Asked Questions.



17.1 Send feedback or report a bug

Click 'Help' / 'Send feedback or report a bug' to report an error, a bug, or send us comments about the Kinepict Medical Imaging Tool. Please fill in the form with the requested data.

⚠	Never send us patient data!

17.2 Reporting incidents

According to MEDDEV 2 12-1 rev. 8, any serious incident that has occurred in relation to the device should be reported to the manufacturer and the competent authority of the Member State where the user and/or patient is established.

Kinepict Health Ltd:

kinepict@kinepict.com

H-2092 Budakeszi Kelta köz 5.

+36317852260

National Institute of Pharmacy and Nutrition:

+3618869300

H-1051 Budapest, Zrínyi u. 3.

18 Frequently Asked Questions

We tested the Kinepict Medical Imaging Tool thoroughly to provide you with a superior quality product. If, however, you experience any issues, please contact us at support@kinepict.com. Also, the IT professional of the hospital may be able to solve the problem using this FAQ.

I've downloaded the setup file but cannot open it because the operating system sends a warning message.

Please check the security settings on your computer.

Windows: Solve this problem, by allowing the software to be installed.

I've installed the Kinepict Medical Imaging software, but it does not start.

Try to reinstall the software following every step of the Installation chapter of the User Manual.

How do I get the Machine ID for installation?

You can follow any of the two methods described in the License request chapter to obtain the machine ID.

I have forgotten my username/password for the software login.

There is no way to recover this information. Please create a new account using 'Register'.

Kinepict Medical Imaging Tool works slowly. What is the problem?

At least a 1st generation Intel core i5 CPU and 4 Gbyte RAM with 2 Gbyte free HDD capacity are required to run Kinepict Medical Imaging Tool. With better hardware, the software will run faster. Please double check the parameters of your computer, and if you need assistance to solve this problem, please feel free to contact us at info@kinepict.com.

Java Virtual Machine has crashed. What should I do?

The Java Virtual Machine may crash on large files because of the too small memory allocated by the maxHeapSize parameter. The user can correct this manually by editing the C:\Program Files\Kinepict\Kinepict.l4j.ini file that contains this setting. Edit the .ini file using Notepad. Find the following line: 'syntax of the memory setting -Xmx1024m". Change the 1024 value to a larger number, e.g. to 2048, 4096, etc. Administrator privileges are necessary to edit this file. It is helpful to move this file to another directory for the editing. Administrator privileges are necessary to edit this file also.

The application cannot restart after file transfer preferences were modified (OS X).

The user shouldn't specify HTTP ports lower than 1024. However, Kinepict allows DICOM ports lower than 1024 since the industry default is 104. Therefore, the default on Mac is set to 4006.

The DICOM file does not open after it has been selected.

There are three options to open a DICOM file:

'Open DICOM file (s) '

Allows the user to open a single DICOM file.

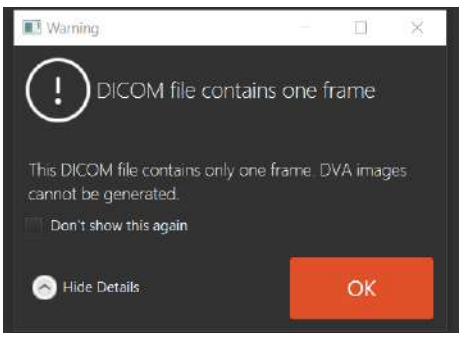
'Open Study'

The user opens a Kinepict study file (.kps) that comes from a previously generated image processing.

'Open directory'

The user can open DICOM directories, which contain numerous single images that are related to each other.

If you open a file using the wrong option, an error message is displayed.



Some DICOM files do not open using 'Recent files…' and 'Recent received files…'.

These functions only open DICOM files which contain an image series. Please use 'Open directory' to open a series of images saved frame-by-frame in separate DICOM files.

Why can I only save in *.kps format?

The workspace of the Kinepict Medical Imaging Tool can only be saved in the kinepict study format (.kps). If you want to save your results in DICOM, image, or text format, please use the 'Export' under the File menu.

How can I save and export my results in an anonymized format?

By clicking on the icon below, you can save your original files in an anonymized DICOM format.

If you would like to anonymize your exported file, use 'File' / 'Export'. To anonymize a kinepict study format (.kps), please anonymize the DICOM before opening it with the software.

I receive pop-ups too many times, can I turn them off?

Tick the box 'Do not show this again' when the warning pops up next time. You can also turn on and off pop-ups in the 'Settings' / 'Manage warnings' window.