# Medis Suite 3.2

## Quick Start Manual

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https://www.medisimaging.com

On the Medis website, select "Products" and then the applicable product group. The user documentation can be found on that page.

A PDF reader is required to access the user documentation. If a PDF reader is not installed on the system, you can download the free Adobe reader. Visit the Adobe website at https://get.adobe.com/reader/ and click "Download Adobe Reader" to download the PDF reader.

# Legal Notices

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# Regulatory Information

## Intended Use

Medis Suite is software intended to be used for the visualization and analysis of MR, CT and XA images of the heart and blood vessels.

Medis Suite is intended to support the following visualization functionalities:

- cine loop and 2D review
- performing caliper measurements

These measurements are based on contours that are either manually drawn by the clinician or trained medical technician who is operating the software, or automatically detected by the software and subsequently presented for review and manual editing. The results obtained are displayed on top of the images and provided in reports.

The analysis results obtained with Medis Suite are intended for use by cardiologists and radiologists to support clinical decisions concerning the heart and vessels.

## Indications for Use

Medis Suite is indicated for use in clinical settings where more reproducible than manually derived quantified results are needed to support the visualization and analysis of MR, CT and XA images of the heart and blood vessels for use on individual patients with cardiovascular disease.

When the quantified results provided by Medis Suite are used in a clinical setting on MR, CT and XA images of an individual patient, they can be used to support the clinical decision making for the diagnosis of the patient. In this case, the results are explicitly not to be regarded as the sole, irrefutable basis for clinical diagnosis, and they are only intended for use by the responsible clinicians.

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**WARNINGS**

⬣ Medis Suite must be used by cardiologists, radiologists, or trained technicians who are qualified to perform cardiac analysis. If the analysis results are used to reach a diagnosis, the results must be interpreted by a qualified medical professional. In clinical practice Medis Suite should not be used for purposes other than those indicated in the section Intended Use.

⬣ Users must have sufficient proficiency in the selected operating language, read this manual, and become familiar with the software and be able to obtain reliable analysis results.

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**Note on Monitor Aspect Ratio and Resolution**

ⓘ The shapes of objects and calipers displayed may get slightly distorted when the resolution is set to an aspect ratio different than the monitor's physical aspect ratio. This distortion does **NOT** affect the accuracy of measurements or analyses. To avoid distortion, set the resolution of the monitor to an aspect ratio equal to the physical aspect ratio. LCD monitors typically operate best at their native resolution. Microsoft Windows recommends a resolution when it has sufficient information to do so.

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# European Regulations

| CE 1639 | Medis Suite is qualified as a class IIa medical device. It complies with the requirements of the Dutch Medical Devices Decree (Besluit Medische Hulpmiddelen, Stb. 243/1995) and the European Medical Device Directive 93/42/EEC. |
|---|---|

# North American Regulations

Medis Suite has been cleared for market in the United States by the FDA (Food and Drug Administration) under the provisions of Section 510(k) of the Food, Drug, and Cosmetic Act.

| **Caution** |
|---|
| Federal law restricts this device to sale by or on the order of a physician. |

Medis Suite complies with the requirements of the Canadian Medical Devices Regulations and has been licensed as a Class II medical device.

# Asia-Pacific Regulations

Medis Suite complies with the requirements of the Australian Therapeutic Goods Administration and has been licensed as a Class IIa medical device.

Medis Suite complies with the requirements of the Japanese Pharmaceutical and Medical Device Law and has been licensed as a Class II medical device.

Medis Suite complies with the requirements of the South Korean Medical Device Act and has been licensed as a Class II medical device.

# Conventions Used

The following conventions are used throughout this manual to indicate mouse and keyboard actions and to refer to elements in the user interface.

## Mouse

| | |
|---|---|
| Click | Press and release the primary mouse button. If you are left-handed, you may have set the right mouse button as your primary mouse button. |
| Click and drag | Press and hold the primary mouse button. Drag the mouse to perform a function. Release the primary mouse button. If you are left-handed, you may have set the right mouse button as your primary mouse button. |
| Right-click | Press and release the secondary mouse button. If you are left-handed, you may have set the left mouse button as your secondary mouse button. |
| Middle-click | Press and release the wheel button or the middle mouse button. If you have a two-button mouse, press and release the left and the right mouse button simultaneously. |
| Double-click | Press and release the primary mouse button twice. |
| Wheel | Rotate the mouse scroll wheel. |

## Keyboard

| | |
|---|---|
| SHIFT+click | Press and hold down the SHIFT key on your keyboard while you click a button or object. |
| CTRL+K | Press and hold down the CTRL key on your keyboard while you press K, then release both keys. |

## Typographical Conventions

| | |
|---|---|
| On the **Annotations** node of the **Procedures** pane… | Names of buttons, fields, menus, menu options, and tab names are capitalized and in bold. |
| **Procedures > Text Annotation** | A sequence of menu options that you select to perform a specific task is indicated by angular brackets. |
| Label: `Aortic root` | Text that you type or that appears on the screen, such as annotation labels, is displayed in `Courier New`. |

# Symbols Used

**Tip:** Provides helpful information or an alternative working method.

**Note**: Brings additional information to your attention.

**Caution**: Tells you to be careful when performing a task.

**Warning**: Warns you for a potentially dangerous situation in the image representation or analysis, which may lead to incorrect results. You are advised to follow the instructions to avoid this.

# Table of Contents

# 1    About Medis Suite

Medis Suite is the Medis software solution for the visualization of magnetic resonance (MR), computed tomography (CT), and X-ray angiographic (XA) images. It provides intuitive tools for displaying MR, CT and XA images in 2D, and provides tools for easy and quick measurements.

Medis Suite integrates applications that can provide advanced manual and automated image analysis. Results from the integrated applications will be gathered in Medis Suite and can be used to generate a combined report.

The Medis Suite software solution offers quantification results that enable cardiologists and radiologists to review MR, CT and XA images, and it provides a solid basis for clinical decision making.

# 2    System Requirements

## 2.1    Hardware

**Medis Suite:**
- Intel or compatible quad-core processor
- 4 GB of RAM
- 250 GB of available hard disk space
  (if you want to store images locally, make sure you have enough disk space)
- 3-button mouse, scroll-wheel recommended
- CD-ROM player to install the software from CD-ROM
- Widescreen monitor supporting a minimum resolution of 1920x1080 pixels
- Video card supporting OpenGL and with 512 MB memory
- Network interface card of at least 100MBit/s to access, receive, and send images over the network

**Sentinel license server:**
- Intel or compatible processor with a minimum speed of 550 MHz
- 128 MB of RAM
- 1 GB of available hard disk space
- Network interface card

**NOTES:**
- All hardware must be compliant with the operating system
- For the license server, a PC with a fixed IP address or a reserved IP address in the DNS server is strongly recommended

## 2.2    Operating System

**Medis Suite:**
- Microsoft Windows 7, SP1, 64 bit version
- Microsoft Windows 8.1, 64 bit version
- Microsoft Windows 10, 64 bit version
- Microsoft Windows Server 2008 R2, SP1, 64 bit version
- Microsoft Windows Server 2012 R2, 64 bit version
- Microsoft Windows Server 2016, 64 bit version

**Sentinel license server:**
- Microsoft Windows 7, 32 and 64 bit version
- Microsoft Windows 8, 32 and 64 bit version
- Microsoft Windows 8.1, 32 and 64 bit version
- Microsoft Windows 10, 32 and 64 bit version
- Microsoft Windows Server 2008, 32 and 64 bit version
- Microsoft Windows Server 2008 R2, 64-bit version
- Microsoft Windows Server 2012, 64-bit version
- Microsoft Windows Server 2012 R2, 64-bit version
- Microsoft Windows Server 2016, 64 bit version

# 3 Support

Medis is committed to offering high-quality products and services. If you have questions about the software, or if you would like to make suggestions for improvements in the software or in the documentation, please contact the Medis helpdesk.

If you contact the Medis helpdesk by e-mail, mention the name of the software and the version number in the subject field.

To look up the version number of your software, select the application menu by clicking  in the upper right corner of the Medis Suite window, and then **Help > About….**


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# 4 Startup

To start Medis Suite, double-click the **Medis Suite** icon on the desktop, or select **Medis Suite** from the Windows start menu.

Medis Suite provides its graphical user interface in the following languages: English, German, Spanish, Italian, French, Japanese, and Portuguese.

## 4.1 Logon to Medis Suite

Dependent on your Medis Suite configuration, you may have to specify your Windows username and password to log on to Medis Suite.

## 4.2 Role Based Access Control

Medis Suite offers 'role based access control' to some of its functionalities. Specific functionality of Medis Suite may be accessible or inaccessible for individual users that logged on to Medis Suite. Role based access control is configured by your system administrator.

## 4.3 Licenses and Pay-Per-Use Vouchers

Your workstation needs access to licenses and/or pay-per-use vouchers in order to work with Medis Suite and the installed apps. The availability of specific application functionality may be dependent on the available licenses and/or pay-per-use vouchers.

For an overview of your current license configuration, click ⋮ > **Tools > Show available licenses….** Select a license or a pay-per-use voucher from the overview to review its details. This includes license expiration date, other users that have claimed a license, or an overview of claimed pay-per-use tokens.

To refresh the overview of available licenses and pay per use vouchers, click ⟳. To start the CMS License Manager application, click ⊞. To save an overview of your pay per use vouchers, click ⊟.

# 5    Medis Suite Workspace

## 5.1    Overview

The main workspace of Medis Suite consists of toolbars, several workspace panes, and the central window area.
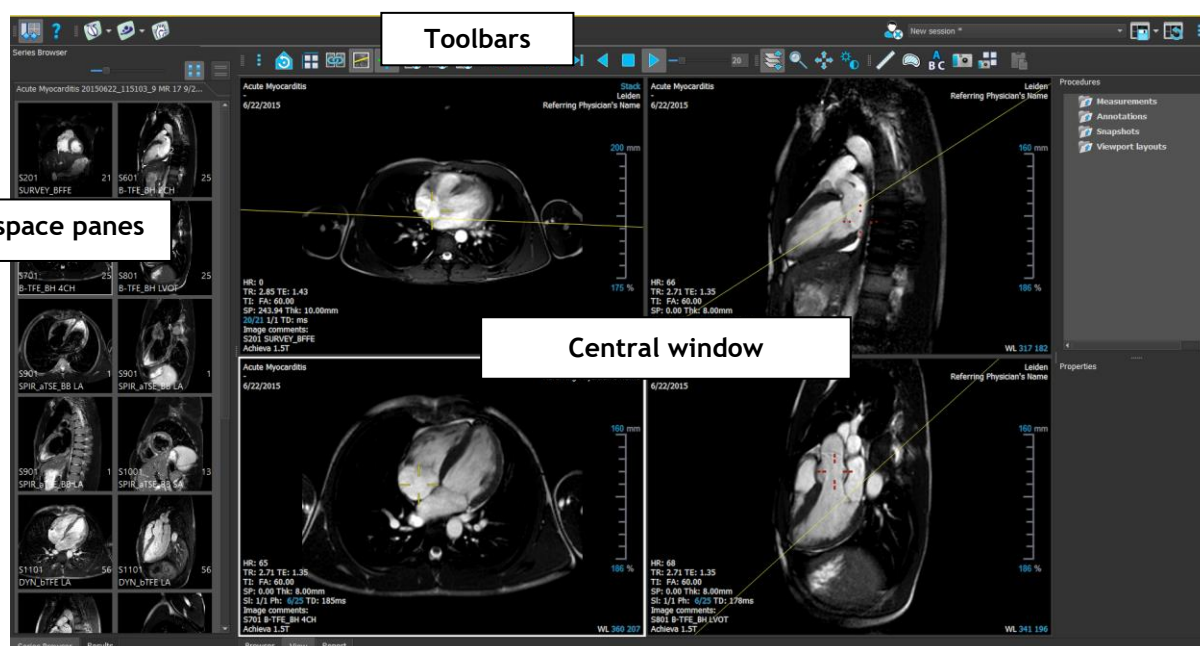


You can customize the main workspace by hiding or moving the workspace panes and toolbars. Any changes that you make to the main workspace are saved for each Windows user.

The central window area holds the **Browser**, **View** and **Report** tabs that are provided by Medis Suite. Next to that, the central window is the area where integrated Medis Suite applications will be displayed after launching them.

The **Series Browser** pane shows an overview and detailed information of the series that are loaded in Medis Suite.
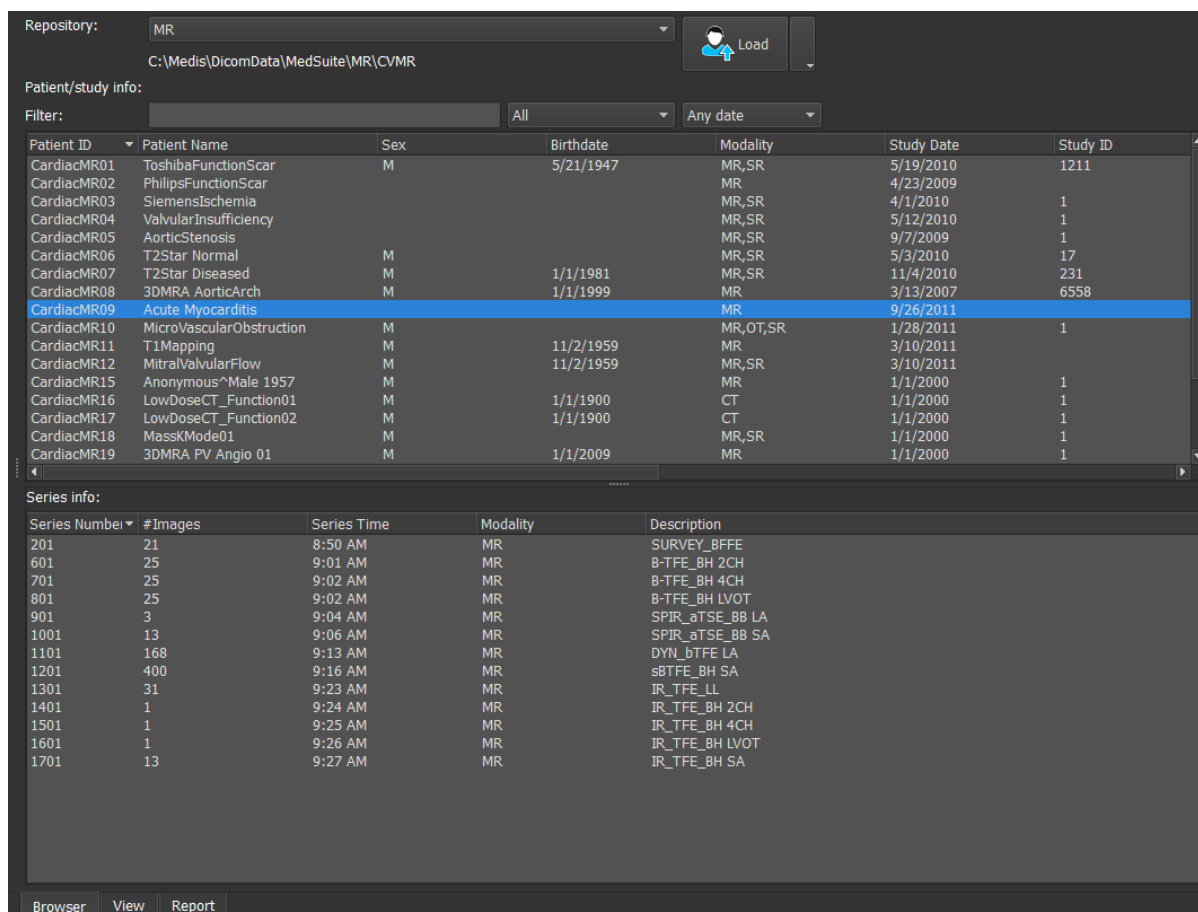
The **Results** pane shows all results that are available for the current session of the current study. The results are gathered from the Medis Suite viewer and the running Medis Suite apps.

ⓘ    When Medis Suite apps are closed, their accompanying results will be removed from the Medis Suite **Results** pane and the report.

## 5.2    Browser

The **Browser** tab in the central window of Medis Suite provides functionality to import, view, filter, load, anonymize and delete data.

ⓘ    Export, delete, and anonymize data from a repository is functionality that can be allowed or blocked (role based access control) by your system administrator.
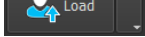
Any data that you would like to process must be contained in a Medis Suite **Repository**. Local repositories are located on your local machine or network drive. Shared repositories are managed through a Medis Suite server. You can have one or multiple repositories to work with. All configured repositories are listed in the Repository drop down in the Browser.

⚠️ The Medis Suite repositories are not intended to be used for long term storage or archival of your data. Make sure that the image data, as well as the Medis Suite sessions and results are persistently stored and archived on another location, such as your PACS or VNA.

## 5.2.1 Repository Configuration

**To configure the Medis Suite repositories:**

- Click on the dropdown icon next to the Load button  in the Browser, and select **Configure…** This will open the Options dialog in the Repository section.

- Configure an existing repository, or add a local or remote repository.

or

- Click on the menu icon  in the **General** toolbar of the viewer and select Tools, Options and choose Repository. This will open the Options dialog in the Repository section.

- Configure an existing repository, or add a local or remote repository.

## 5.2.2    Selecting a Repository

**To change the active Medis Suite repository:**

- Open the Browser pane, and open the repository dropdown box to see all configured repositories.

- Click on the name of the repository to activate it. For local repositories, the folder that is associated with the repository will be displayed directly underneath the dropdown box.

⚠  The Medis Suite repositories are defined and available for all users on the computer system. Which repository is activated is saved for each individual Windows user.

## 5.2.3    Import Data into Repository

Data can be imported into the Medis Suite repository directly from the Browser. This is especially useful to import data from CD, DVD, USB, or any folder on your computer or network.

⚠      Importing data into a repository is functionality that can be allowed or blocked (role based access control) by your system administrator.

**To import data into the Medis Suite repositories:**

- Click on the dropdown icon next to the Load button  in the Browser and select **Import….**

- Browse to the folder you would like to import and click **Select Folder**.

- The folder and any sub-folders will be scanned to determine the number of files and the size of the data set to be imported.

- A confirmation dialog box showing the number of files and the dataset size will be displayed. The contents of this dialog box will depend on the available resources.

  o  If **No** is selected, then no further action will be taken, and you will be returned to the Browser.

  o  If **Yes** is selected, then the dataset will be scanned, to identify valid DICOM files. Only these files will be imported into the repository

- The import will be blocked if there is insufficient storage available. In order to proceed with the import, extra storage must be made available.
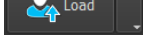
- During the import, a series of messages will appear in the message box indicating the current state of the import. On completion, the number of files that were imported and ignored will be displayed.

⚠ Files that are copied into or deleted from the repository folder, for example, by using the Windows Explorer, are **not** automatically detected by Medis Suite; a rescan of the repository is required to process such repository modifications.

## 5.2.4 Rescan Repository

**To rescan the files in a Medis Suite repository:**

- Click on the dropdown icon next to the Load button ⬛ in the Browser and select **Rescan**. This will identify newly added or removed files.

Or,

- Press **F5** with the Browser window active. This will identify newly added or removed files.

Or,

- Press Ctrl+**F5** with the Browser window active. This will rebuild the repository.

⚠ Note: If the active repository is a remote repository, Ctrl+F5 will rebuild the repository on the remote machine. For very large repositories this operation can take considerable time and it is therefore not recommended. Only 'rebuild' the repository to fix inconsistency errors in your repository that cannot be handled by a 'rescan'.

## 5.2.5 AutoQ

Some of the Medis Suite apps provide preprocessing functionality, which is referred to as AutoQ algorithms. The AutoQ algorithms can be started manually, or automatically when data arrives in the repository.

**To launch an AutoQ algorithms manually:**

- Select one or multiple series in the browser.

- Right-click the selection.

- From the context menu, activate the AutoQ submenu, and the AutoQ algorithm of your choice.

The AutoQ algorithm will be started and preprocessing on the selected series will be performed as a background process without any user input. In the meantime, you can continue to work with Medis Suite.

Progress and status messages of the AutoQ algorithm will be presented in a separate tab which can be accessed by clicking on the AutoQ status button in the browser. An icon 🏃 is also shown in the status column of the browser to indicate that the AutoQ algorithm is in progress. When completed, any output of the AutoQ algorithm will be added to the series list, and can be loaded into Medis Suite.

AutoQ algorithm can be connected with rule definitions that will check new data that arrives in your repository. If the data complies to the rule definitions (e.g. 'has the data an MR short axes cine series?') the corresponding AutoQ module will be started automatically.

ⓘ Medis suite itself does not provide AutoQ algorithms, they are only installed with specific apps.

ⓘ Automatic startup of AutoQ algorithms is disabled by default, and can be enabled for each repository in the Medis Suite options.

ⓘ If your computer is connected with a repository coordinator (referred to as the server), Medis Suite will connect with the server to provide you access to the AutoQ algorithms that are installed on that computer. When you activate the AutoQ algorithms available on the server, it will be executed there, and it will not consume resources (CPU or memory) on your local system. For AutoQ modules from the server to show up in your browser, they should also be installed on your local system.

ⓘ If you don't see the AutoQ button in the browser or the AutoQ submenu in the context menu, there are no Apps installed that provide AutoQ algorithms.

## 5.2.6 Anonymization

The data contained in the Medis Suite repository can be anonymized and exported from the patient study browser.

ⓘ Anonymization data from a repository is functionality that can be allowed or blocked (role based access control) by your system administrator.

**To anonymize and export a patient study:**

- Select one patient study in the browser.

- Right-click the selection.

- From the context menu, select Anonymize.

- Specify the desired new value for Patient Name and Patient ID.

- Set the option to export to folder, or to repository.

  When exporting to a folder, set target path for the exported anonymized data. Medis Suite will create a new sub folder in this target path with the new patient name and patient ID, to export the output files. Optionally, Medis Suite can create a zip file with all anonymized data.

  When exporting to a repository, select the repository to export to, and specify a directory name that will be used in the repository to store the anonymized files.

- Select Start to anonymize and export the data.

⚠ Anonymization will always include all data from the selected study, it is not possible to anonymize a subset of the data.

⚠ All DICOM Secondary Capture images of reports and snapshots will be excluded from the anonymization and export process, as they are likely to contain burned-in patient information.

⚠ The Medis Suite session data will be included in the anonymization process. However, snapshots and viewport layouts will be removed from the session data, as they are likely to contain burned-in patient information. Results provided by apps will only remain in the Medis Suite session data if the app can anonymize the results. In other cases, the results will be removed from the session.

## 5.3 View

The **View** tab in the central window of Medis Suite provides the viewing functionality.
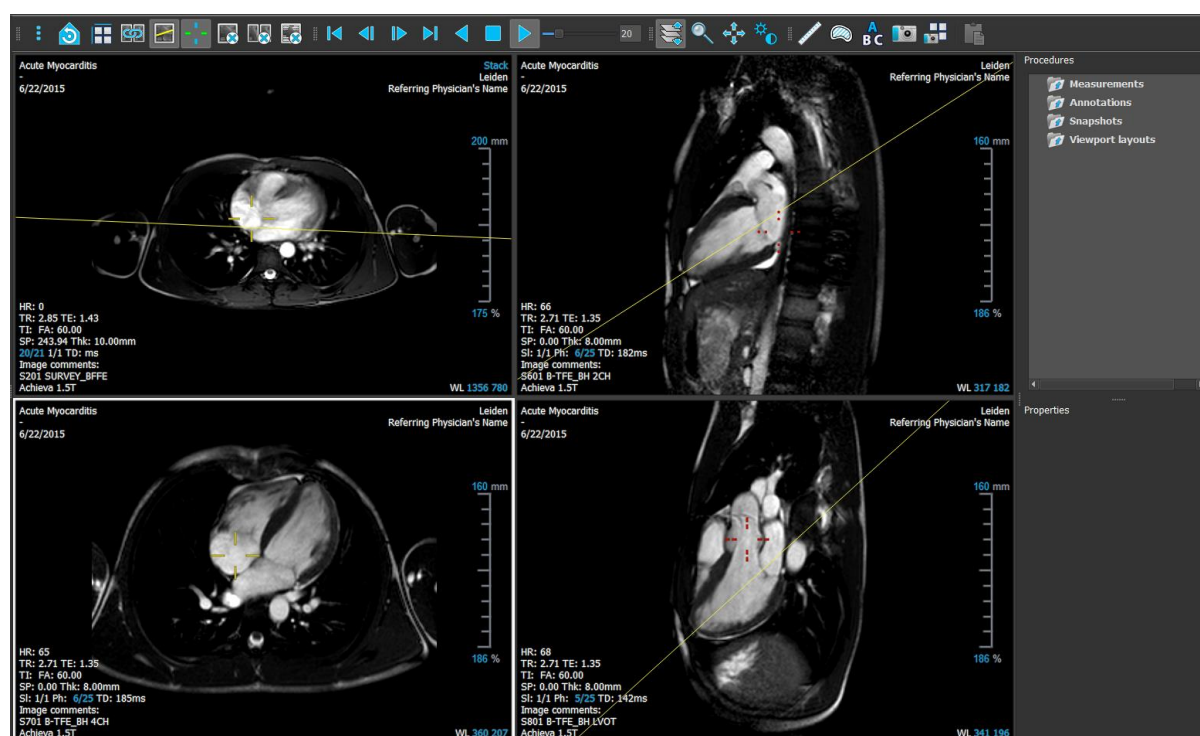


You can customize the viewer workspace by hiding or moving the workspace panes and toolbars. Any changes that you make to the viewer workspace are saved for each Windows user.

## 5.4 Report

The **Report** tab in the central window of Medis Suite provides the reporting functionality.

The positions and visibility of the toolbars in the **Report** tab are fixed.

# 6 Viewing

## 6.1 Viewport

The image viewport displays all images that are contained in the currently loaded series.



The viewport text overlay displays detailed information about the patient, the hospital, the image acquisition, and the display settings. When a series is "Lossy" or "Derived", it is indicated in the overlay located at the bottom right corner of the viewport.

## 6.2 Viewport layout

**To adjust the viewport layout**

- Click ▦ in the general toolbar. A table of rows and columns will appear.

- Drag the mouse to determine the number of viewport rows and columns.

- The viewport layout will be applied.

## 6.3 Loading Series

Series can be loaded in the viewport from the **Series Browser**.

**To load series in the viewport**

1. Click an item in the image view or text view of the **Series Browser** to select it.

2. Click and drag the selected series from the **Series Browser** to the viewport.

   This will load the series into the viewport. When multiple slices are contained in the series, the middle slice is displayed by default. When multiple time points are contained in the series, the first time point is displayed by default. The **Series Browser** highlights the displayed series with a white border around the icon in the image view, or bold text in the text view.

3. Double click an item in the image view or text view of the **Series Browser** to select it.

**To review all series in the active study**

1. Press **Page Down** on your keyboard to load the next series into the viewport

2. Press **Page Up** on your keyboard to load the previous series into the viewport

# 6.4    Navigation

You can move forward or backward through the slices and time points in the series in several ways.

**To move forward or backward through slices**

Moving through slices can be done by using keys:

- Press arrow up or down to move to the previous or next slice.

Or,

- Press HOME or END to move to the first or last slice.

Moving through slices can be done by using interactive graphics:

- Click or right-click the interactive graphics for slice ('Sl') on the viewport to move to the first or last slice.

**To move forward or backward through time points**

Moving through time points can be done by using buttons:

- Click ◀| or |▶ on the Viewing toolbar to move to the previous or next time point.

Or,

- Click ◀ or ▶ on the Viewing toolbar to play a cine through the time points in backward or forward direction. Click ■ to stop the cine.

Or,

- Click  or  on the Viewing toolbar to move to the first or last time point.

Moving through time points can be done by using keys:

- Press the left or right arrow key to move to the previous or next time point.

Or,

- Press CTRL + left arrow, CTRL + right arrow to play a cine through the time points in backward or forward direction. Press Esc to stop the cine.

Or,

- Press HOME or END to move to the first or last slice time point.

Moving through time points can be done by using interactive graphics:

- Click the interactive graphics for phase ('Ph') on the viewports to move to the next time point.

Or,

- Right-click the interactive graphics for phase ('Ph') and enter the desired number of the time point.

## 6.5    Cross Referencing

The scanline  and cross hair  tools enable the user to visually relate the active image and image position with that of the different series loaded in other viewports. Cross Referencing is visible when multiple related series are loaded.

**To enable/disable the scanlines**

- Click  in the general toolbar to enable or disable scanlines.

**To enable/disable the cross hairs**

- Click  in the general toolbar to enable or disable cross hair

💡 A cross hair reference of the same color implies there is an exact or nearby position cross reference. A different color cross hair indicates the position is out of range of the cross hair in the active image.

# 6.6     Mouse Controls

You can move through the slices and time points using **Stacking** when you see the stack cursor .

**To activate the stacking mouse control**

- Click  or  in the mouse controls toolbar.

Or,

- Select **Stacking** or **Cine** from the viewport context menu.

You can zoom in and out of the viewport using **Zooming** when you see the magnify cursor  .

**To activate the zooming mouse control**

- Click  in the mouse controls toolbar.

Or,

- Select **Zooming** from the viewport context menu.

You can move the image within the viewport left, right, up and down using **Panning** when you see the hand cursor  .

**To activate the panning mouse control**

- Click  in the mouse controls toolbar.

Or,

- Select **Panning** from the viewport context menu.

You can adjust the window width and level (WWL) when you see the WWL cursor  .

**To activate the window/level mouse control**

- Click  in the mouse controls toolbar.

Or,

- Select **Window/Level** from the viewport context menu.

**To reset the zooming, panning and window width and level settings to the initial view state**

- Click  to reset the zooming, panning and window width and level.

# 7 Calibration of XA Images

XA images may be accompanied by isocenter calibration information that allows Medis Suite to automatically calibrate the image data. If this information is not available or if the object to be measured is not in the isocenter, the images must be manually calibrated before measurements can be done on the images. Medis Suite supports isocenter calibration, catheter calibration, manual calibration, sphere/circle calibration, or can take over calibration values from another acquisition.

🛈 The calibration of an XA image is automatically taken over and applied in Medis Suite for all apps running in Medis Suite that have loaded the same image.

## 7.1 Performing Calibrations

**To start a calibration**

1. Select the viewport to calibrate.

2. Click [icon] in the toolbar, or select [icon] > **Procedures > Calibration**.

3. Select the calibration method and fill in the necessary information (see below).

4. Click **Done** to finish and apply the calibration factor to the XA acquisition.

This adds the calibration to the Calibrations list in the **Procedures** pane. At any time while the calibration is still active you can press Esc to cancel the calibration.

### 7.1.1 Isocenter Calibration

If isocenter data is available for the image, the default calibration method is Isocenter. No further actions are required to use isocenter calibration.

🛑 The isocenter calibration factor is only valid for measurements at the level of the isocenter.

### 7.1.2 Catheter Calibration

**To perform catheter calibration**

1. Select **Catheter** as the Calibration method.

2. In the viewport, make sure to select the image that best meets the selection criteria for catheter calibration.

3. Click in the image to specify the proximal point of the catheter, and then click to specify the distal point.

4. Verify that the catheter contours are correct.

5. Under **Catheter Diameter**, specify the known catheter size by selecting the size in French or typing the size in mm.

6. Click **Done** to finish and apply the calibration.

### 7.1.3    Manual Calibration

**To perform manual calibration**

1. Select **Manual** as the Calibration method.

2. Under **Calibration factor**, type the known calibration factor. Click outside the edit box or press Enter.

3. Click **Done** to finish and apply the calibration.

### 7.1.4    Sphere / Circle Calibration

**To perform sphere/circle calibration**

1. Select **Sphere/circle** as the Calibration method.

2. In the viewport, make sure to select the image that best meets the selection criteria for sphere/circle calibration.

3. Click in the image to specify the center of the circle/sphere and then drag to specify the diameter.

4. Under **Enter the diameter or volume**, select whether you will be specifying the **Diameter** or the **Volume**.

5. Type the diameter in mm or the volume in ml. Click outside the edit box or press Enter.

6. Click **Done** to finish and apply the calibration.

### 7.1.5    Line Calibration

**To perform line calibration**

1. Select **Line** as the Calibration method.

2. In the viewport, make sure to select the image that best meets the selection criteria for line calibration.

3. Click in the image to specify start point and then drag to specify the end point.

4. Under **Enter the line length**, type the distance in mm. Click outside the edit box or press Enter.

5. Click **Done** to finish and apply the calibration.

## 7.1.6    Calibration from Other Acquisition

**To perform calibration from other acquisition**

1. Make sure that a catheter, sphere/circle or manual calibration is performed on one of the other images of the same study.

2. Select **From other acquisition** as the Calibration method.

3. Select the other acquisition from the list with series and instance numbers and acquisition angles.

4. Click **Done** to finish and apply the calibration.

# 8    Procedures

## 8.1    Annotations

**To create an annotation**

1.  Click ![icon] in the toolbar, or select ![icon] > **Procedures** > **Text Annotation**.

2.  Click and drag in the image to draw the annotation arrow.

3.  Select a predefined label, or type a custom label and press Enter.

4.  Click and drag the arrowhead or the text to adjust the exact location of the image that you want to mark.

5.  Click outside the annotation. The graphic changes to white indicating it has left edit mode.

This adds the annotation to the Annotations list in the **Procedures** pane. At any time while the annotation is still active you can press Esc to remove the annotation.

## 8.2    Distance Measurements

**To measure a distance**

1.  Click ![icon] in the toolbar, or press the D key, or select ![icon] > **Procedures > Distance Measurement**.

2.  Click and drag in the image from the start point of the measurement to the end point.

3.  Select a predefined label, or type a custom label and press Enter.

4.  Click and drag either arrowhead or the text to adjust the points of the image between which you want to measure.

5.  Click outside the measurement. The graphic changes to white indicating it has left edit mode.

This adds the measurement to the Measurement list in the **Procedures** pane. At any time while the measurement is still active you can press Esc to remove the measurement.

# 8.3    Area Measurements

**To measure an area**

1.  Click in the toolbar, or press the A key, or select > **Procedures > Area Measurement** in the menu.

2.  Click and drag to draw the area. The contour is automatically closed when you release the mouse button.

3.  Modify the contour as necessary.

4.  In the **Properties** pane, select the check boxes to include **Area**, **Circumference, or Signal Intensity (SI)** measurements in the image overlay.

5.  Click outside the contour. The graphic changes to white indicating it has left edit mode.

This adds the measurement to the Measurement list in the **Procedures** pane. At any time while the measurement is still active you can press Esc to remove the measurement.

# 8.4    Snapshots

**To save a snapshot**

1.  Click in the toolbar, or press the S key, or select > **Procedures > Snapshot**.

2.  On the **Properties** pane, click the ellipsis on the right of the **Label** field and select a predefined label, or type a custom label and press Enter.

# 8.5    Viewport Layout Snapshots

**To save a viewport layout snapshot**

1.  Click in the toolbar, or select > **Procedures > Viewport Layout**.

2.  On the **Properties** pane, click the ellipsis on the right of the **Label** field and select a predefined label, or type a custom label and press Enter.

# 9    Medis Suite Apps and External Tools

Where Medis Suite procedures provide basic image analysis and results, for advanced image analysis and additional results Medis Suite integrates dedicated applications, or 'apps'.

The clinical apps that are available in Medis Suite include QMass, QFlow, 3D View, QTavi, QAngio XA, QAngio XA 3D. Additional apps are released on a regular basis, visit the Medis website to learn more about our products.

Medis Suite also supports apps for research use and/or investigation use only. These apps can be recognized by a purple color of the graphical user interface. Results of the research apps that are included in the Medis Suite report will be marked to be for research use and/or investigational use only.

Results from research apps should not be used for clinical decision making.

## 9.1    Starting a Medis Suite App

**To start a Medis Suite app**

- Click on the app icon in the **Applications** toolbar.

    This will start the app without loading any series.

Or,

1. Right-click in the image viewport.

2. From the context menu, select the app name.

    This will start the app, and load the series visible in the viewport into the app.

Or,

1. Select the series you want to load into the app in the **Series Browser**.

    Multiple series can be selected by holding the SHIFT or CTRL key.

2. Right-click on one of the selected series in the **Series Browser**.

3. From the context menu, select the app name.

    This will start the app, and load all selected series into the app.

Or,

1. Select the series you want to load into the app in the **Series Browser**.

    Multiple series can be selected by holding the SHIFT or CTRL key.

2. Click and drag the selected series onto the app icon in the **Applications** toolbar.

    This will start the app, and load all selected series into the app.

When the Medis Suite app is started, it will be displayed on a tab in the central window area of Medis Suite. The launched apps will be displayed after the **View** tab and before the **Reporting** tab in the order they were started.

💡 Multiple instances of Medis Suite apps can be started. They will be running next to each other and can be identified by a sequence number '#1', "#2', etc.

💡 Multiple versions of an app can be installed, for example QMass version 8.0 and version 8.1. You can configure how Medis Suite handles multiple app versions when reloading data from a session.

Click ⋮ > **Options…** in the Medis Suite toolbar, and select the **General** tab.

Results from the Medis Suite apps will be visible in the **Results** pane of Medis Suite automatically or by actively pushing results from the apps to Medis Suite. Refer to the user manuals of the Medis Suite apps for more detailed information.

## 9.2     Loading Series into Medis Suite Apps

You can load series into Medis Suite apps that were already running, appending or replacing data that was already loaded.

**To load series into Running Medis Suite apps**

1.  Click on the tab that holds the running Medis Suite app in the central window of Medis Suite

2.  Select the series you want to load into the Medis Suite app in the **Series Browser**.

    Multiple series can be selected by holding the SHIFT or CTRL key.

3.  Double-click one of the selected series, or click one of the selected series and drag the selection onto the running Medis Suite app.

    The series will be loaded by the Medis Suite app and the first series will be activated.

💡 Press SHIFT during dragging to add the data to the running Medis Suite app without modifying the app's series selection.
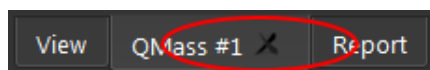
💡 Press CTRL during dragging to unload previously loaded series from the Medis Suite App, and load the new series.

## 9.3 Closing a Medis Suite App

**To close a Medis Suite app**

- Click the 'X' on the tab that holds the running instance of the app.



ⓘ When Medis Suite apps are closed, their accompanying results will be removed from the Medis Suite **Results** pane and the report.

ⓘ When you switch to another patient or study in the **Series Browser**, all running Medis Suite apps will be closed.

## 9.4 External Tools

Medis Suite can be configured to launch 3rd party tools, for example to parse and process the results available in Medis Suite. External tools will not run embedded in the Medis Suite window on a tab, but will be launched to run independent from the Medis Suite environment.

Before Medis Suite will launch an external tool, it can export sessions, reports, results, snapshots and movies that you can be used as input for the external tool.

**To start an external tool**

- Click on the external tool icon in the **external tools** toolbar.

ⓘ Configuration of the external tools is performed through the "External tools" tab of Medis Suite options dialog. The configuration includes the location of the external tool, the icon to be displayed in the external tools toolbar or menu, optional command line parameters, the startup and shutdown properties, as well as the pre-launch export options.
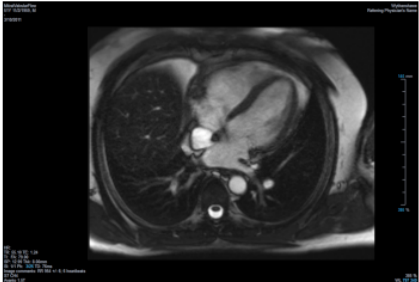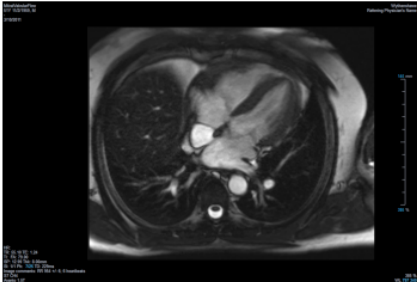
🛑 Errors in the configuration of external tools or misuse of external tools can lead to unexpected results, such as data loss. Carefully verify that the proper information is exchanged between Medis Suite and the external tool.

💡 Medis Suite provides an external tool template to export results into the CMR-COOP database. To use this external tool, you will require a CMR-COOP account and have to download the accompanying external tool from the CMR-COOP website and install it on your local system.

# 10 Reporting

## 10.1 Create a Report

You can create a Medis Suite report from the **Results** pane, by showing or hiding results, paragraphs or sections from the report.



**To show or hide a result from the report**

- Click on the result name or any of the result values to toggle the visibility.

**To show or hide a paragraph with all contained results from the report**

- Click on the paragraph name to toggle the visibility.

**To show or hide a section with all contained paragraphs and results from the report**

- Click on the section name to toggle the visibility.

**To hide all results from the report**

- Click  in the toolbar.

**To print the report**

- Click ![print icon] in the toolbar.

- Select the target printer and click OK.

💡 Sections, paragraphs and results that are hidden in the report, are displayed in the **Results** pane with a grayed out and italic font.

💡 The **Results** pane is automatically activated when you activate the report.

💡 Your organization name and logo can be configured in the Medis Suite options. To open the options dialog, click ![icon] in the **Main** Medis Suite toolbar, and select Tools, Options.

## 10.2    Textual Report

By default Medis Suite will show the report in a graphical layout. In addition, you can generate a textual report to allow copy-and-paste of results from Medis Suite to another application.

**To open the textual report**

- Select ![icon] from the report toolbar

💡 The textual report only includes the results that are visible in the graphical report. To change the report content, modify the selections in the **Results** pane.

**To copy results from the textual report**

1. Press CTRL+A or select **Select All** from the context menu.

2. Press CTRL+C or select **Copy** from the context menu.

   The entire textual report content is copied to the clipboard.

Or,

1. Select a part of the textual report content.

2. Press CTRL+C or select **Copy** from the context menu.

   The selection is copied to the clipboard.

# 11 Exporting

The export of the report and results is functionality that can be allowed or blocked (role based access control) by your system administrator.

## 11.1 Select Results for Export

You can select the report, snapshots, images, and movies from the export list to mark them for export.
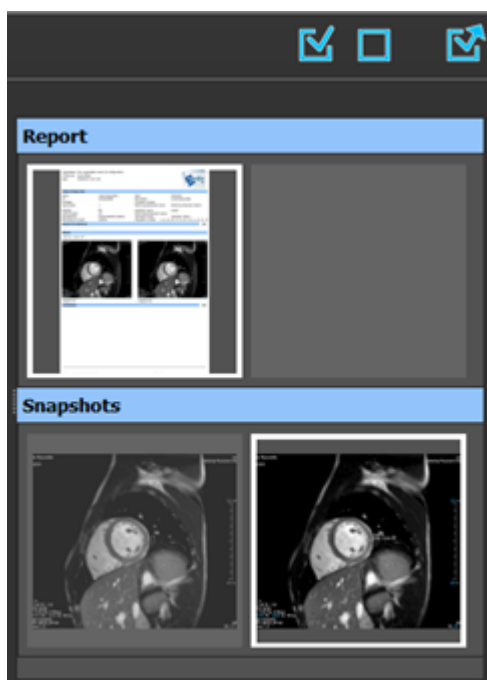


**To include or exclude results for export**

- Click on a thumbnail image to include or exclude the result for export

Or,

- Click [icon] to include all results for export.

Or,

- Click [icon] to exclude all results for export.

Results that are included for export have a thumbnail that is visible in normal colors and is highlighted with a white border. Results that are excluded for export have a thumbnail that is grayed out and has no border.

## 11.2 Export Results

You can export all selected results in DICOM format to your repository or PACS for future review or reference.

💡 The export targets and formats of the results can be set in the Medis Suite options.

**To export results**

- Click [icon] to export the selected results.

## 11.3 Export to Common Image Format

Results can also be exported in common image formats.

**To export a single result into a common image format:**

- Right click on the result to export, and select Export…

- In the Export dialog, select the output format, specify a filename, and click OK.

**To export a group of results into a common image format:**

- Select or deselect the results in the group you would like to export.

- Right click on the header of the result group, and select Export selected…

- In the Export dialog, select the output format, specify a filename, and click OK.

# 12 Sessions

Status information of Medis Suite can be saved. The session can be reloaded to continue or review the image analyses performed by Medis Suite.

**To save a Medis Suite session**

- Select [icon] from the Main toolbar and click Save session

    The name of the session is updated to indicate that it is saved.

Or,

- Select [icon] from the Main toolbar and click Save session as…

    Specify the name of the session and click OK.

    The name of the session is updated to indicate that it is saved.
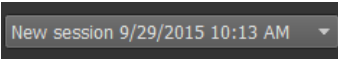
💡    Once a session is saved, its contents cannot be overwritten or modified by Medis Suite.

**To reset a Medis Suite session**

- Select [icon] from the Main toolbar.

    A new session is created.

**To select a Medis Suite session**

- Open the session combobox in the Main toolbar `New session 9/29/2015 10:13 AM ▾` and select the Medis Suite session.

💡    When you switch or reset a session, all open Medis Suite apps will be closed and their results will be removed from Medis Suite. The Medis Suite apps that were contained in the newly activated session will be started and their results will be loaded in Medis Suite.
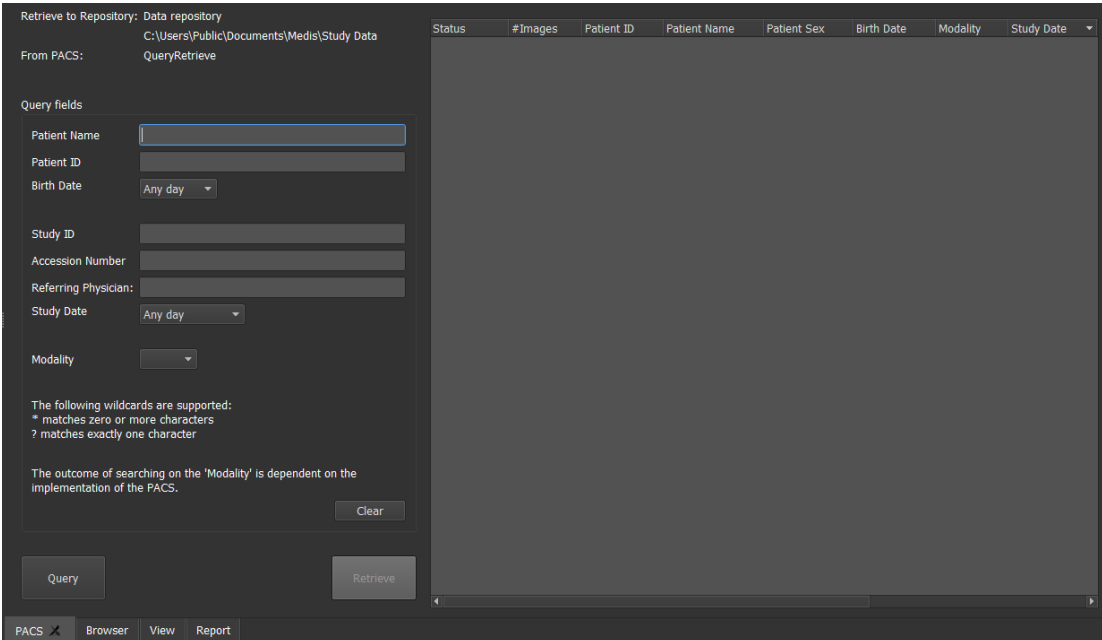
💡    Before Medis Suite closes a modified session, you will be asked if you want to save the session.

# 13 Query / Retrieve from PACS

Medis Suite supports both Query and Retrieve from a predefined PACS.

**To query and retrieve from a PACS**

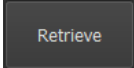- Open the Browser tab, and click . The PACS tab will be opened.



💡 The PACS button will be visible and enabled only when a DICOM node is configured for DICOM Query and Retrieve.
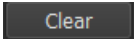
**Query a PACS**

- Using the Query fields to define the search criteria.

- Click .

- Matching patient and study information will be displayed in the list.

**Retrieve from PACS**

- Select an item from the list of patient and study information.

- Click [Retrieve] .

- The patient/study will be retrieved and appended to the repository.

- Go to the Browser tab to confirm that the patient data is appended to the repository, and load the data into the Viewer.

**Clear results**

- Click [Clear] and the previous queried results will be cleared.