syngo.via View&GO

Operator Manual
VA55

siemens-healthineers.com

SIEMENS Healthineers

Legend

	Indicates a hint Is used to provide information on how to avoid operating errors or information emphasizing important details
	Indicates the solution of a problem Is used to provide troubleshooting information or answers to frequently asked questions
■	Indicates a list item
✓	Indicates a prerequisite Is used for a condition that has to be fulfilled before starting a particular operation
◆	Indicates a one-step operation
1 2 3	Indicates steps within operating sequences
Italic	Is used for references and for table or figure titles
➔	Is used to identify a link to related information as well as previous or next steps
Bold	Is used to identify window titles, menu items, function names, buttons, and keys, for example, the Save button Is used for on-screen output of the system including code-related elements or commands
Orange	Is used to emphasize particularly important sections of the text
`Courier`	Is used to identify inputs you need to provide
Menu > Menu Item	Is used for the navigation to a certain submenu entry
<variable>	Is used to identify variables or parameters, for example, within a string

⚠ CAUTION	CAUTION Used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury or material damage. CAUTION consists of the following elements: • Information about the nature of a hazardous situation • Consequences of not avoiding a hazardous situation • Methods of avoiding a hazardous situation
⚠ WARNING	WARNING Indicates a hazardous situation which, if not avoided, could result in death or serious injury. WARNING consists of the following elements: • Information about the nature of a hazardous situation • Consequences of not avoiding a hazardous situation • Methods of avoiding a hazardous situation

1 Introduction

syngo.via View&GO is a post-processing and viewing software that provides routine reading capabilities as well as a broad range of 3D functionalities.

It is intended to be used as a second workplace on a computer close to the modality, or elsewhere in the clinical network.

syngo.via View&GO can be downloaded (*) onto any computer that meets the minimum system requirements and has Internet access.

(*) not applicable for Japan

syngo.via View&GO may be installed on your system as a 90-day trial version.

When this trial version expires, you are asked whether you want to purchase a permanent license.

For information about *syngo*.via View&GO licenses, contact your Siemens Healthineers Sales Representative.

After you have installed the software on your system, some mandatory actions are required to perform a display compatibility check. (➔ Page 83 *Performing a display compatibility check*)

Note that for *syngo*.via View&GO, access to the Internet is necessary.

Regularly check for updates to keep the application up-to-date and thus to ensure safe and proper use.

1.1 Documentation overview

The *syngo*.via View&GO software is accompanied by the *syngo*.via View&GO Operator Manual, which describes the common functions in the Viewer. It also introduces you to working with the software.

At Siemens Healthineers, we want to address all genders equally in our Instructions for Use. It is not our intention to exclude anyone. We continue to update our documentation with this in mind.

You can access the English Operator Manual directly in the software by clicking the **Help** icon in the access bar and choosing **Help** from the menu.

Further languages can be found on the Internet. (➔ Page 10 *Accessing the user documentation*)

The *syngo*.via View&GO Operator Manual might also mention tools that are part of other medical devices, such as tools of the Syngo Carbon Clinicals medical device.

Syngo Carbon Clinicals has its own Operator Manual, which is available on the Internet. (➔ Page 10 *Accessing the user documentation*)

Consider that some functions described in the respective medical device documentation may not be available for your application. Contact Siemens Healthineers for more information.

1.1.1 Extended functionalities

The extended functionalities are not part of the basic package and serve to evaluate specific clinical cases.

Currently, two different extended functionality packages are available:

- XP extended functionality package
- CT extended functionality package(*)

(*) The CT extended functionality package is part of the medical device syngo.CT Extended Functionality.

Depending on the license you purchased, you can install the respective extension.

The CT extended functionality package has its own Operator Manuals, which are also available on the Internet. (➔ Page 10 *Accessing the user documentation*)

Some functions described in the documentation may not be available for your application. Contact Siemens Healthineers for more information.

1.1.2 What's new in this version

Learn about new features in *syngo*.via View&GO.

If you are interested in what is new in the current software version, you can find an overview of all new features on the Internet.

https://www.siemens-healthineers.com/medical-imaging-it/syngo-carbon-products/view-go

You can also access this information directly from the software by clicking the **Help** icon in the access bar and choosing **What's new** from the menu.

1.1.3 Accessing the user documentation

All operator manuals are available in electronic form on the Internet.

You will find them here:

https://doclib.siemens-healthineers.com/home

1 Before you start searching for the required operator manual, you can select your **Country** and your preferred **Language**.

2 In the search bar of the document library, you can, for example, simply enter "*syngo*.via View&GO".

The available documentation is listed.

If required, you can narrow down the search results by choosing the appropriate filter criteria in the navigation area.

For example, if you are looking for a specific software version, select **Products > Syngo > syngo.via View&GO** and navigate to the required software version.

The available documentation is displayed according to your selection.

Supported languages

syngo.via View&GO supports the following user interface languages:

- English
- German
- French

- Spanish
- Japanese
- Chinese (simplified)

syngo.via View&GO does not support local differences in languages, for example, Spanish (Mexico) is displayed the same as Spanish (Spain).

To use *syngo*.via View&GO, you must be fluent in the language used in the user interface and in the Instructions for Use.

1.1.4 Requesting printed Instructions for Use

You can request printed documentation for your medical device in the **teamplay Fleet** platform. One printed copy may be provided free of charge, depending on your country-specific law. For example, if you are a customer inside the European Union.

✓ You know the correct name of the medical device for which you want to request the Instructions for Use.

✓ You are registered at teamplay Fleet.

1 Enter the following URL into a web browser with Internet access: https://fleet.siemens-healthineers.com/

2 Enter your login data.

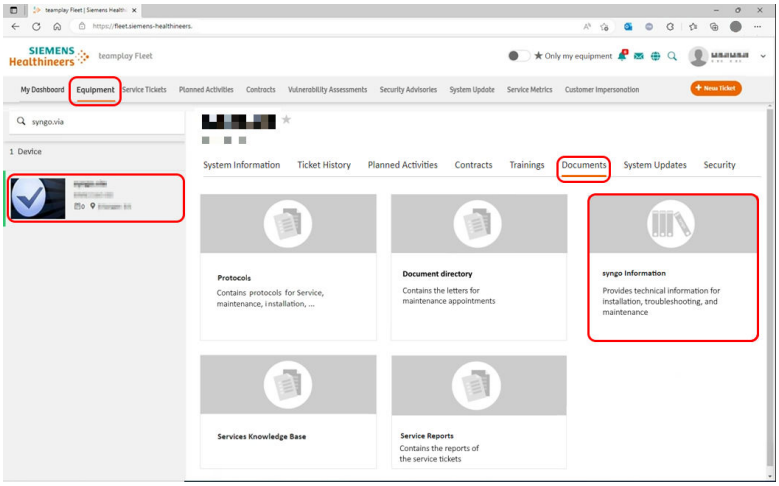
teamplay Fleet opens.

For further information about your teamplay Fleet account, contact your Siemens Healthineers representative.

3 Click **Equipment** and select your medical device from the list.

The contents area shows information about your device, and adds a new navigation bar on top.

4 At this navigation bar, click **Documents**.



Steps to order

5 Click **syngo Information**.

6 In case, a version tree is presented, select the software version, and then click the **Request for Printed User Documents** button.

7 Enter the delivery address and click **Submit**.

You will receive a confirmation email.

1.2 Intended purpose / Intended use

1.2.1 Intended purpose

Intended Purpose Statement under the European Medical Device Regulation 2017/745:

Software solutions intended to process, communicate, display, read, and archive medical data for informing and driving clinical management.

1.2.2 Intended use

syngo.via View&GO is a software solution intended to be used for viewing, manipulation, communication, and storage of medical images. It can be used as a stand-alone device or together with a variety of cleared and unmodified *syngo*-based software options.

syngo.via View&GO supports interpretation and evaluation of examinations within healthcare institutions, for example, in Radiology, Nuclear Medicine and Cardiology environments. The system is not intended for the displaying of digital mammography images for diagnosis in the U.S.

1.2.3 Indications for use

syngo.via View&GO is indicated for image rendering and post-processing of DICOM images to support the interpretation in the field of radiology, nuclear medicine and cardiology.

1.2.4 Contraindications

The system is **not** indicated for mammography images for diagnosis in the U.S.

The application is **not** to be used as an archiving device for patients' image data.

The application is **not** to be used as a sole basis for clinical decisions but further evidence has to be taken into account.

1.2.5 Patient target group

syngo.via View&GO has neither limitations concerning the patient population (e.g. age, weight, health, condition) nor limitations concerning region of body or tissue type.

1.3 IT security information

To learn more about the security of your *syngo*.via View&GO medical device and to obtain the Manufacturer Disclosure Statement for Medical Device Security (MDS), contact your Siemens Healthineers representative and ask for the document entitled Security Whitepaper and MDS[2].

1.4 Clinical benefits and claims

syngo.via View&GO provides the following clinical benefits:

- *syngo*.via View&GO facilitates diagnosis with a wide range of clinical tools and supports decision making.

The following operational claims are made:

- *syngo*.via View&GO allows to switch from a native syngo-based acquisition workplace to *syngo*.via View&GO or vice versa during the working day with less effort for adjustment as compared to a third party workplace.
- *syngo*.via View&GO provides the opportunity to move reading tasks from the acquisition workplace to *syngo*.via View&GO which allows a higher patient throughput at the acquisition modality.
- *syngo*.via View&GO adds flexibility to the operation of a second workplace.
- *syngo*.via View&GO can be installed by customers on provided hardware that fulfills a set of minimum hardware requirements.

1.5 Integration scenarios and interoperability

syngo.via View&GO integrates into your IT infrastructure and communicates with other systems, such as:

- Acquisition Devices (Modalities)
- PACS
- DICOM workstation/DICOM-based CD/DVD burning devices
- DICOM Printer

1.6 Incident reporting

Any serious incident that has occurred in relation to the device must be reported to the manufacturer and the competent authority of the member state in which the user and/or patient is established.

1.7 User profiles

Please note that the following profiles may vary in practice depending on (hospital) organization, qualification, and personal responsibilities, and can only be considered as a general guide.

The following user profiles have been identified for *syngo*.via View&GO:

Technologist (Radiographer)

- Role
  - Quality assurance of the images
  - Generation of additional result series, for example, parallel ranges
  - Sending data for archiving
- Knowledge and experience
  - Vocational high school
  - Radiation technologist training
  - Work experience
  - Product training certificate or comparable product experience

Radiologist (Reading Physician)

- Role 1 (for example, residents)
  - Performing the imaging examination
  - Exporting of patient images
  - Completing but not verifying reports
  - Intervention, responsible for the safety of patients and employees
  - Sending data for archiving
- Role 2 (for example, attending physicians)
  - Tasks of **Role 1** listed above
  - Justifying indication (medical check)
  - Verifying reports

- Knowledge and experience
  - Doctor of Medicine (MD)
  - Specialist for radiology
  - Work experience
  - Product training certificate or comparable product experience

IT Administrator

- Role
  - Installation and management of the hardware and the IT infrastructure of the clinical network and the PACS/RIS system
  - Administration and configuration of IT components of the computer
  - Responsibility for data security, data protection, and license handling
  - Configuration and administration of DICOM nodes
  - Management of short-term storage (STS), as well as backup and archiving
  - User account management on operating system level
- Knowledge and experience
  - Expert IT knowledge of hardware, software, and operating-system issues
  - English language skills (fluent in spoken and written English)
  - Data management
  - User administration
  - Networks
  - RIS/PACS workflow
  - License handling

1.8 Legal notes

Any reports or other figures that appear in this document are merely illustrative and do not contain the names or data of real people.

Any similarity in names of people, living or dead, or in data is strictly coincidental and is expressly disclaimed.

Siemens Healthineers does not warrant that the material contained in its documentation is error-free.

Documentation supplied to Siemens Healthineers by third parties and included with this documentation is not warranted for accuracy or completeness. The information contained in this document is subject to change. Revisions and updates will be issued from time to time to document changes and/or additions.

2 Safety advisory

The following cautions are valid for *syngo*.via View&GO. Consider also the safety advisories of the extended tools that are available with your *syngo*.via View&GO installation.

General advice for the USA

For the USA, please note the following:

- Monitors should not be used for diagnosis unless the used monitor has specifically received 510(k) clearance for this purpose.
- Paper printouts should not be used for diagnosis unless the used Post Script printer has specifically received 510(k) clearance for this purpose

2.1 Laws and regulations

CAUTION

For the use of *syngo*.via View&GO local laws and regulations of your home country may apply.

Diagnosis may be wrong in your home country.

- Respect and follow all applicable laws and regulations for image reading and/or creation of diagnosis in your home country.

2.2 System security

CAUTION

Unauthorized access to the system.

Risks include the system becoming non-operational and the loss of all patient data.

- This medical device is designed to be operated in a protected network environment. We advise against directly connecting the device to public networks.
- The user is responsible for the network security at the site and for the security of optional infrastructure, such as desktop virtualization environments. Consult the corresponding manuals for secure setup, and update as required.
- The network administrator is responsible for ensuring that only authenticated devices, e.g. belonging to the health enterprise, are connected to the network.
- Set up firewalls and user-account password protections for installed PCs.
- Update virus protection software as required.

CAUTION

Patient data is stored unsecured on local hardware.

Any user may read or delete patient data from the system.

- If the system is unattended, lock the system against unauthorized access.
- Take other means to hinder unauthorized access to the system.

CAUTION

Oldest 20% of data is automatically deleted from the system by any user who confirms the deletion notification, even if the data was not imported by that user.

Loss of clinically relevant data if deletion notification is mistakenly confirmed.

- Regularly export data to an archive to avoid irretrievably deleting data.
- Inform other users of *syngo*.via View&GO about the automatic deletion option.

CAUTION

Antivirus software has not been installed or updated.

Malicious software can damage the system and cause all patient data to be lost.

- Regularly configure and update the antivirus software on your system.
- Note: It is recommended that you install antivirus software tested by Siemens Healthineers.

2.3 Emergency concept

CAUTION

Computers are not infallible and unexpected errors may occur. In addition, downtimes are necessary to maintain the software.

The system may not be permanently available for use.

- Work out an emergency plan for response to non-availability of the system, for instance, to use a system on a different network or to use printouts or films.

CAUTION

Limited system access because of security measures (for example, licensing issues).

System access might be hindered or restricted in emergency cases.

- Set up an emergency access environment, if necessary.

CAUTION

There is no mechanism for recognizing an emergency patient in *syngo*.via View&GO.

The user may not be aware of a pending emergency case.

- Establish and apply a method to identify emergency patients, for instance, by adding a corresponding notice to the patient identification.

2.4 Hardware

CAUTION

Use of inappropriate devices (monitors, etc.) to review and report radiological images.

Incorrect review of images.

- Images to be reviewed and reported on must be optimally displayed. Only use suitable monitors for reviewing and reporting images.
- Follow the maintenance and care instructions given in the manufacturer's documentation.

CAUTION

Malfunction of system due to hardware not fulfilling manufacturer's specification.

Hardware failure, execution of tasks may be delayed.

- Use hardware components only as specified in the manufacturer's documentation (operating instructions, data sheets).

CAUTION

The installation of unsuitable hardware may cause serious problems.

Data loss.

- Do not install hardware that is not adequate in terms of reliability, capacity, and performance.
- Problems arising due to unsuitable third-party hardware are not the responsibility of Siemens Healthineers.

CAUTION

Hardware failure such as disk crash.

Data loss.

- The user is responsible for developing a concept for patient data recovery in case of defective hardware and for the improvement of fail-safe operation of short-term storage.

CAUTION

Backups onto non-redundant hardware are not sufficient for data security.

If hardware fails, loss of data can occur if backups have not been performed or if non-redundant hardware was used for backups.

- Set up a routine for secondary backup of database and configuration items on external (removable) media at regular intervals and based on a backup concept. Consider using backup tools provided with the operating system.
- Set up a backup concept for patient data routed from modalities. Do not rely on storage on *syngo*.via View&GO alone, but additionally store patient data on a PACS.
- Regularly check that backups are performed properly.
- Ensure that critical data is additionally stored on redundant hardware (RAID).

CAUTION

Power outage can lead to an unintended shutdown.

Data loss or corrupted data, as data may be left in an undefined state.

- Take possible power outage into account in your work or use the system with a UPS to protect your system from data loss in case of power outages.

CAUTION

Failed system updates can be time-consuming.

System availability may be impacted.

- Always set aside enough time to install updates.

2.5 Software

CAUTION

syngo.via View&GO is not intended to be used for diagnostic reading of mammography images in the United States.

Diagnosis may be wrong.

- Use a device that is intended for diagnostic reading of mammography images in the United States.

CAUTION

After a software update of *syngo*.via View&GO, RIS, PACS, MMWP, or other DICOM nodes, the applications/their interfaces may become incompatible with each other.

Clinical workflow can be interrupted due to misconfiguration.

- If the system is updated, all important and frequently used applications/their interfaces must be checked thoroughly.
- Be aware that changing the RIS or PACS, or other DICOM nodes can also make interfaces incompatible with each other and should therefore be checked.

2.6 Image evaluation

CAUTION

Diagnostic reading of medical images may not be correct under all circumstances.

The diagnosis created purely by image reading may not be sufficient for any reason.

- For a therapy decision do not rely solely on image reading as supported by *syngo*.via View&GO, but take further evidences into account.

CAUTION

The measurement results may not reflect the exact situation because the evaluation results are inaccurate.

Wrong interpretation of the patient situation, wrong diagnosis due to inaccurate measurement results.

- Correct geometric measurement depends on the windowing setting that you have applied and the geometric object that you have drawn.
- Correct volumetric measurement and density values greatly depend on the segmentation performed by you or by an automatic algorithm.
- If one of these inputs is not correct, the measurement result will be incorrect and diagnosis will be wrong.

  For more information on accuracy limitations for measurements, see the "Measurement accuracy" chapter in the *syngo*.via View&GO Operator Manual.

CAUTION

Algorithm could return inaccurate or incomplete anatomy information, which could affect the workflow or cause incorrect diagnosis.

Incorrect algorithm results that are not verified can lead to misdiagnosis.

- Manually check and, if necessary, correct the algorithm results using your clinical knowledge as a radiologist, before making a diagnosis or further processing to derive new results or output that could impact the diagnosis.

CAUTION

The display of slightly different data sets (e.g. prior/current study) makes it difficult to distinguish between data sets when switching between them. The image data displayed may be not the data that the user expects when the data is opened again.

The diagnosis and treatment may be based on incorrect information.

- Customize and read image text to ensure correct distinction between different data sets.
- Use the study date as the primary identification source.

CAUTION

Patient demographic data in image text may be completely hidden by user configuration.

Wrong diagnosis due to a mix-up of patients especially in scenarios where different patients are shown in one layout.

- Always apply the full image text to check the identification of the patient in scenarios where different patients are shown in one layout.

CAUTION

2D reference line may show an anatomical position that does not correspond exactly to the referenced images. This can be caused by e.g. patient movement or patient breathing as the same table position (one common frame of reference) is used for all displayed image series.

The diagnosis and treatment may be based on incorrect information.

- Be aware that the accuracy of the 2D reference line with respect to the shown anatomy may deviate due to external influences.

CAUTION

Images processed with radial ranges may be displayed in oblique orientation.

Wrong diagnosis due to orientation mix-up.

- Set up a departmental policy for creation of radial ranges regarding the orientation and review of the resulting outcome.

2.7 Patient information

CAUTION

Patient-specific information left in clipboard

Patient privacy is compromised.

- Close the work item of the patient when leaving the workstation, especially if the workstation is in a public place accessible to multiple users. Empty the clipboard (for example, by copying any value) to avoid access to patient data, for example, in case snapshots are still available in clipboard.

2.8 Loading of images

CAUTION

Coloring of study date and time point information across the image segment and **Series** panel is only meant for easy identification of loaded studies.

Incorrect diagnosis due to misinterpretation of study date color.

- Do not use study date color scheme for identification of current or prior studies.
- Only ever use the study date and time as the primary source of identification of a study.

CAUTION

Additional images may arrive at the system while a patient is being read.

Diagnosis may be made with incomplete data.

- Check the list/thumbnail view in the **Series** section of the **Patient Browser** for additional images before completing the diagnosis.

CAUTION

Patient mix-up is possible if data from different patients are open within one viewing area or in different applications (for example, having a patient opened in the **Viewer**, while exporting data of another patient from the **Patient Browser**).

Diagnosis and treatment may be based on incorrect information.

- Check the patient name in each application.
- If multiple patients are indicated within viewing area, check patient name for each image.

CAUTION

Data in clipboard may not be the data you expected.

Data in clipboard is not from expected patient or from expected measurement.

- After you pasted the measurement, carefully read the surrounding text and decide, whether the measurement belongs to the surrounding text.

2.9 Importing and exporting data

CAUTION

Incorrect measurement results due to incompletely imported or received studies.

Wrong diagnosis.

- Always check that studies have been completely imported to or received by the application.
- If an error occurred during import, try to import the study again.
- If the error occurs again, decide whether the incomplete data poses a risk of wrong diagnosis and must be deleted.

CAUTION

Removing the USB flash drive before the writing process is complete may make the USB flash drive unreadable or damage the data.

Data loss due to interrupted writing to storage medium.

- Do not remove the USB flash drive until writing of all data has finished and perform a safe removal of the hardware.

CAUTION

Low-quality storage media are used.

Data loss due to improper handling or low-quality CDs or DVDs.

- Use only quality media approved for medical applications when storing patient data.
- Observe proper handling guidelines for CDs and DVDs.

CAUTION

Labels on CDs and DVDs created by the *syngo*.via View&GO application do not include the patient identification.

CDs or DVDs may be mixed up.

- If high volumes of CDs or DVDs are created at your site, ensure to label CDs and DVDs correctly to avoid mix-up of patient data. To do so, you can use, for example, a media burning system that takes the information from the DICOM header to create the media labels.

2.10 System configuration

CAUTION

User changes installed software by any means (for example, user moves or renames files or directories).

System becomes inoperable or behaves in an unexpected manner.

- Do not change installed software in any way.

CAUTION

Date format, sorting order or units (inch, mm) are wrongly configured for the user.

Interpretation of measurement values may be wrong.

- Verify that all local configurations meet your expectations.

2.11 Data transfer/Communication

CAUTION

syngo.via View&GO does not support HL7 messages.

A reconciliation message triggered by a system within your hospital network will not be interpreted by *syngo*.via View&GO.

Therefore, reconciliation will not be applied to patient data that is stored on *syngo*.via View&GO.

- Perform reconciliation within your hospital network.
- Delete the patient data concerned from *syngo*.via View&GO.
- Fetch the reconciled patient data from the archival system that holds the current patient data.

CAUTION

Data transfers between systems are not guaranteed.

DICOM data may be only partially or erroneously transferred to or from another DICOM node or medium, which may result in wrong diagnosis.

- When exporting data to another DICOM node, check the target DICOM node for possible transfer errors.
- When exporting data to media, check the target medium in the Windows Explorer for possible transfer errors.
- Information in *syngo*.via View&GO about possible transfer errors is provided when you click "X" to close the application window.

CAUTION

If you close *syngo*.via View&GO, while transfer jobs are running, transfer may be interrupted.

DICOM data may be only partially or erroneously transferred to or from another DICOM node, which may lead to wrong diagnosis.

- Do not exit *syngo*.via View&GO by right-clicking the application icon in the windows tray while the application window is still open. If you do, all running jobs will be canceled without notification.
- First, close the *syngo*.via View&GO application window by clicking "X". Only then will you be informed about incomplete or erroneous jobs and how to proceed.
- As soon as all jobs are completed, you can exit *syngo*.via View&GO in the Windows tray.

2.12 Data storage and archiving

CAUTION

Short-term storage (STS) or system disk is full.

Application not operable, no new images can be stored, system blocked.

- Regularly check the data indicator icon in the status bar, and remove already archived data from the system.

CAUTION

Long-term archiving is not provided with this application.

Loss of data (including reports) can occur if data has not been transferred to a long-term archive.

- Primary data should not be stored in *syngo*.via View&GO solely, but should be available in a long-term archive for reliable storage.
- If primary data is stored in *syngo*.via View&GO solely, take measures to make storage reliable, for example, create backups in regular intervals.
- If data is created in *syngo*.via View&GO (findings, result series, etc.), take actions to safely archive those result data or to create backups at least.
- Before you delete data (primary data or result data) from *syngo*.via View&GO, transfer it to a long-term archive and verify the successful storage.

CAUTION

Data not available or corrupted due to corrupted database.

Patient data that is stored on the system is compromised and may no longer be used for diagnosis.

- Patient data should not solely be stored on *syngo*.via View&GO, but also on archival systems like PACS.
- Be aware that data may be corrupted and fetch data from the archival system if you are not sure about data integrity.

CAUTION

Jobs in the queue may fail if the user deletes or modifies DICOM nodes at the same time.

User may delete data even though export was not successful.

- Delete data only when you are sure that all jobs are complete.
- Delete data immediately after restarting *syngo*.via View&GO.

2.13 Image postprocessing

CAUTION

Automatic image registration of two data sets (for example, PET-CT) is not infallible.

The diagnosis and treatment may be based on incorrect information.

- Check the automatic registration of images before making a diagnosis.
- Adjust the image registration manually, if necessary.

CAUTION

Further examinations/acquisitions of a patient are performed because the quality of reprocessed images is not satisfactory.

Unnecessary radiation exposure to patient.

- It is not necessary to perform another examination/acquisition of the patient if you are not satisfied with the quality of the reprocessed images.
- You can improve the quality of the images by using the reprocessing tool provided in *syngo*.via View&GO (and adapt the reprocessing settings).

  To repeat reprocessing with the *syngo*.via View&GO reprocessing tool, click the **Reprocessing** icon in the **Favorite Tools** and modify the default processing parameters.

CAUTION

The automatic localization and labeling of vertebrae and/or ribs may be incorrect.

Incorrectly labeled vertebrae / ribs can result in a wrong diagnosis or treatment.

- Manually check, correct (if required) and confirm the accuracy of all labels (spine labels, left and right rib labels) using your clinical knowledge as a radiologist.

  Hint: Note that any automatically localized but unlabeled vertebrae / ribs are marked with an "???" and should be corrected.

CAUTION

Diagnosis of soft tissue is made solely on the basis of reprocessed 3D images and not on the CT images. Reprocessed 3D images are of poorer quality and might not show suitable HU values.

Incorrect diagnosis

- Always use CT images for quantitative HU-value-based diagnosis of soft tissue.
- Do not use reprocessed 3D images as the only input for diagnosis of soft tissue.

CAUTION

Wrong registration matrix for manual image registration of two data sets (for example, PET-CT) may be selected.

The diagnosis and treatment may be based on incorrect information.

- Verify the result of the manual registration also after the previously stored registration matrix was recalled.

CAUTION

The evaluation of distances, angles, and ROIs in 3D (VRT, MIP, DRR or SSD) and projection (plain-film X-ray or fluoroscopic) images can be inaccurate.

Diagnosis may be wrong because of incorrect measurement results.

- Do not use projection images for critical measurements.

CAUTION

The volume evaluated may be larger than the volume drawn by the user due to round-off errors and sub-voxel precision.

Inaccurate measurement results

- Be aware of precision limitations when using VOI measurement tools (freehand/sphere). Please consider this effect when interpreting measurement results.

  For more information on accuracy limitations for measurements, see the “Measurement accuracy” chapter in the *syngo*.via View&GO Operator Manual.

CAUTION

Manual masking, bone and table removal mask out tissue (e.g. vessels, stents, or plaques), leave bone fragments, or hide other diagnostically relevant information.

The diagnosis is based on incomplete or wrong information.

- Use the review and edit mode to verify the masking using the parameters for the threshold, size and noise.
- Add relevant items to or remove unwanted parts from the bone mask.
- Make sure that the correct body region is selected for bone removal or fracture analysis.
- Check the results for consistency with the original 2D image.

CAUTION

Vertebral label positions may be wrong in multiple image series as the positions share a common acquisition frame of reference. Rib label positions may be wrong in multiple image series as the positions are calculated in each series separately.

Wrong diagnosis possible due to a mix-up of vertebrae / ribs.

- Always check the correctness of the label positions in each labeled series within a study.

CAUTION

After label edit operations, the assignment of the vertebrae or the ribs may be wrong.

Wrong diagnosis possible due to mix-up of vertebrae / ribs.

- Always check that after label propagation and delete operations, the spine / rib labels still correspond to your clinical knowledge as a radiologist.

2.14 Printing

CAUTION

Hard copies could contain data from several examinations of a patient or even from different patients. If the attributes that identify the examination or patient are not displayed, patients may be mixed up or the examinations of an individual patient may be mixed up.

The diagnosis and treatment may be based on incorrect information.

- Check that the information on the hard copy contains attributes that identify the examination or the patient before using the printout for diagnosis.

CAUTION

Result of true size in printout can depend on printer settings, round-off errors and other factors.

True Size printout does not correlate exactly to the real anatomy size.

- Be aware of precision limitations when printing in **True Size**. Always compare the image scalebar within the printed images for validation with a physical measurement unit such as a ruler to ensure that the printout has the real anatomy size.
- If your layout contains small segments to which the scalebar cannot be applied, either validate true size directly by measuring the printed anatomy or choose a different layout.

CAUTION

For paper printers, the "printed" flag is set after the images have been successfully transferred but it cannot be guaranteed that the images have actually been printed out.

No paper printout is available for the transferred images.

- Make sure that the paper printout is actually available before you delete the corresponding image data.

2.15 Measurement accuracy

The following chapter describes what users should know in order to correctly interpret the results of measurement tools and what they have to do in order to achieve high measurement accuracy.

Consider that this medical reading software does not measure in the conventional sense. The actual measurement was already performed during image acquisition at the scanner.

The provided measurement tools actually count the number (and fractions in the case of subpixel accuracy) of original image pixels and with the help of attributes such as pixel size and pixel spacing convert them to the resulting physical quantity.

Please note that some of the described tools and measurement methods might not apply to the product in question.

CAUTION

The measurement results may not reflect the exact situation because the evaluation results are inaccurate.

Wrong interpretation of the patient situation, wrong diagnosis due to inaccurate measurement results.

- Correct geometric measurement depends on the windowing setting that you have applied and the geometric object that you have drawn.
- Correct volumetric measurement and density values greatly depend on the segmentation performed by you or by an automatic algorithm.
- If one of these inputs is not correct, the measurement result will be incorrect and diagnosis will be wrong.

  For more information on accuracy limitations for measurements, see the “Measurement accuracy” chapter in this Operator Manual.

2.15.1 Two-step approach

All measurements performed with tools provided with this software follow a two-step approach:

- **Creation of an object**: First the user (or an algorithm) marks specific anatomy by drawing a geometric object or by segmenting an area in the pixel data to identify the anatomic structure that the user is interested in.
- **Evaluation of an object**: Then the physical quantities of this geometric object or the segmented area are evaluated and shown to the user.

Creation of an object

During the creation of an object, different levels of measurement accuracy are considered:

- **Subpixel accuracy**

  The geometric object is defined with an accuracy higher than the original image pixel size.

  Distance Line, **Angle** and **ROI** circle provide this accuracy.

  If a geometric object is drawn with these tools, points of the geometric object may be located in fractions of original image pixels, providing a higher accuracy than one may expect with original image pixel size.

- **Original image pixel accuracy**

  The measurements based on segmentations and/or thresholds have the accuracy of the original image pixel size.

  Tools like **VOI-Sphere**, **VOI Freehand**, **VOI-Isocontour**, **Region Growing** or algorithm-based segmentations provide this accuracy.

  If an object is drawn with one of these tools, the contour of the segmentation object snaps to the grid provided by the DICOM image data. It is not possible to achieve a higher accuracy than the size of the original image pixel.

Evaluation of an object

The evaluation of the created object is performed with the utmost accuracy.

The properties of the geometric object or the segmentation object are evaluated without any error. They are merely calculated from their position in the array of original image pixels with attributes such as pixel size and pixel spacing.

This leads to the following consequences:

- Accuracy of evaluation

  The evaluated physical quantities of each physical object are exactly compared with the geometric object or segmentation object that the user (or an algorithm) has drawn.

- Accuracy of geometric object or segmentation object

  The alignment of the geometric object or the segmentation object with the anatomic structure and the quality with which it matches the anatomic structure of interest, are the only parameters that define the accuracy of the measurement (except process of image scanning itself).

Because of the second consequence mentioned above, the only question that has to be considered in determining the accuracy of a measurement is the following:

How well does the geometric object or the segmentation object drawn by the user (or an algorithm) match the anatomic structure of interest?

For all measurement tools that provide subpixel accuracy, the user is usually able to create a geometric object or segmentation object that is suitable for subsequent evaluations.

But it may be more difficult to segment the object that best matches the anatomic structure of interest with measurement tools that are limited to original image pixel accuracy. And even then, some limitation in accuracy may still need to be taken into account.

In the following, we provide hints for assessing the original image pixel accuracy, detecting misalignments and arriving at the optimum measurement result.

2.15.2 Measurement tools with subpixel accuracy

The quantities length, angle, area etc. obtained from 2D measurement tools (like **Distance Line**, **Angle**, **ROI** circle, etc.) are calculated with subpixel accuracy.

Therefore, it makes sense to zoom the image so that the start- and end points of the object to be measured are reasonably visible in the segment.

Even so, an error of the size of two screen pixels may be tolerated. This is expected due to limitations when drawing the start- and end point.

Detecting and resolving measurement errors

- Compare the start- and end point of the geometric object with the structure to be measured.

  Check that the geometric object and the underlying structure are aligned.

- A reasonable zoom will increase the accuracy of measurement because it will help the user to align the anatomy perfectly.

  Switch to a layout with fewer segments or even just one segment to achieve at least acquisition size zoom level or even further increase the zoom level to reduce possible errors.

  Adapt windowing as necessary to make the tissue of interest visible.

2.15.3 Measurement tools with original image pixel accuracy

Quantity volume and density values obtained from 3D measurement tools (such as **VOI** tools, **Region Growing**, etc.) are calculated based on image pixels.

All image pixels that are touched by the segmented structure, are taken into account for this measurement.

The relative error increases with the amount of pixels, by which the segmented object exceeds the anatomical structure in number of image pixels.

Therefore, a tight approximation of the segmented object to the anatomical structure is extremely important.

The relative error rapidly decreases with the true size of the anatomical structure to be measured, which needs to be taken into account for subsequent therapy decisions.

Detecting and resolving measurement errors

- Zoom the image up to acquisition size. It is not necessary to zoom the image further as the **VOI** tool bases its calculation on original image pixels.

  Compare the highlighted area of the segmentation object with the actual anatomical structure to be measured that both are sufficiently aligned.

  If you selected the **VOI** tool from the **Anatomy Visualizer**, you can use additional tools such as **Nudge** or **Region Growing** to better align the segmentation object with the anatomical structure.

3 Installing *syngo*.via View&GO

The installation process of *syngo*.via View&GO is very easy.

You need local administrative rights to install or update *syngo*.via View&GO.

(1) Download software packages from the Internet
(2) Register with the activation key that you received from your Siemens Sales Representative
(3) Submit registration information for validation
(4) Install software packages on your computer

Some additional tips when installing syngo.via View&GO :

- Device Guard has to be deactivated when installing and using *syngo*.via View&GO.
- To install or update *syngo*.via View&GO, you need Internet access.

  A connection rate of 16 MBit/s, with a latency below 200 ms is recommended.

  If you have not been connected to the Internet for 30 days or more, you will be reminded to re-connect in order to update your application to the latest available version.

  Full Internet access is not necessarily required. To install or update *syngo*.via View&GO in regular intervals, it is sufficient to connect your computer only to the cloud services. In this case, you have to adapt your firewall settings and allow access to the following URLs:

  – https://syngo-sw-distribution.siemens-healthineers.com/

  – https://syngo-sw-packages.siemens-healthineers.com/

- It is also necessary to have local administrative rights when installing *syngo*.via View&GO. Only then the complete range of functionality of *syngo*.via View&GO can be guaranteed for all users.

  If you install the application on a computer as non-admin user, it might be that certain functionality is not available for other users, who are also working with the application. For example, the favorite layouts section might not be displayed to other users.

There may be an interference between *syngo*.via View&GO and other medical software. *syngo*.via View&GO might not work as expected if the software is installed on systems that already have medical software from other vendors installed, for example, the application does not open.

Therefore, be careful when installing *syngo*.via View&GO on systems on which medical device software from other vendors is already installed.

If *syngo*.via View&GO does not work as expected, we recommend to install the application on a system without any other medical software.

Do not install *syngo*.via View&GO on *syngo*-based systems, such as *syngo*.via, SOMARIS/10, NUMARIS/10, *syngo* Multimodality Workplace, or SOMARIS/5, as this might lead to interferences.

3.1 Installing the free version of *syngo*.via View&GO

syngo.via View&GO is also available as free version, which you can download and install directly from the Digital Marketplace:

https://marketplace.teamplay.siemens.com/apps

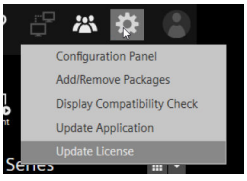
To do this, all you need is a teamplay account and local administrative rights.

The free version of *syngo*.via View&GO allows you to try out most of the functions of *syngo*.via View&GO.(*)

The only limitation is that you cannot open more than three patients per day.

However, one patient can contain studies of different time points.

To convert the installed free version into a full version, you click the shopping cart icon on the access bar of *syngo*.via View&GO and send a request.



After your request has been processed, you will automatically receive the respective license file. It will be available in your *syngo*.via View&GO application after the next restart or by updating the license file manually.

(*) Some functionality (such as the Pulmonary Density tool) is only available in the full version of syngo.via View&GO.

3.2 Installing extended functionalities

The *syngo*.via View&GO software package consists of several individual software packages:

- Basic Viewer package (*) Including available tools from the medical device Syngo Carbon Clinicals
- Extended functionalities packages (optional)(*)

Currently, three different extended functionality packages are available:

- XP extended functionality package
- CT extended functionality package(*)

(*) The CT extended functionality package is part of the medical device syngo.CT Extended Functionality.

Depending on the license you purchased, you can install the respective extension.

Due to an overall package size of more than 1 GB, you can download and install each package separately and thus, reduce the overall download time.

You can also postpone the installation of the extended functionalities to a later point in time. In this case, you have to perform the following steps:

✓ The Basic Viewer package is already installed.

1 Click the **Settings** icon in the access bar and choose **Add/Remove Packages** from the menu.

The **Add/Remove Packages** window opens.

2 Select the check box of the extended functionality package that you want to install or uninstall.

As soon as you click **Apply**, the procedure for installing the selected extended functionality package starts.

3.3 Installing updates

To ensure proper working with *syngo*.via View&GO, updates are provided at regular intervals.

syngo.via View&GO automatically checks for upcoming updates every time you close the application.

If an update is available, a notification pops up.

You can either download and install the update package right away or skip the update.

It is possible to skip the update up to three times. After that you must install it.

To reduce downtime of the application, you can configure available update packages to be automatically downloaded in the background.

The **Configuration Panel** provides such an option. (→ Page 80 *Adapting the display and behavior*)

In this case, the update is immediately installed when you confirm the update notification.

3.4 Hardware and software requirements

For installation of *syngo*.via View&GO, your computer must meet the following minimum requirements:

Operating system	Microsoft Windows 11 - 64 bit
Processor type	Intel CPU supporting AVX2 (Intel Haswell processors and succeeding generations) To use the Cinematic VRT feature, an Intel CPU with at least 4 threads is required. We recommend using an Intel CPU with 8 threads.
Memory	8 GB RAM (limitations to the size of image data sets may apply with only minimal RAM size) To use the Pulmonary Density tool, the Multitom Rax-related functionality, Cinematic VRT, or to use the *syngo*.CT Coronary Cockpit, your computer requires at least 16 GB RAM.
Graphics Processing Unit (GPU)	NVIDIA or Intel GPU For the Multitom Rax-related functionality an NVIDIA GPU with at least 8 GB of RAM and Cuda 11.1.0 support is required (Pascal, Volta, Turing and Ampere architecture). For the Cinematic VRT feature, an NVIDIA GPU with at least 4 GB is required. We recommend using an NVIDIA RTX family GPU with 8 GB of RAM.

Disk space	300 GB of image storage are supported, therefore at least the corresponding amount of free disk space is recommended. For adequate performance, the usage of a solid state disk for image storage (with at least 750 GB disk space) is recommended.
Monitors	Single monitor of at least 2 MP

Monitor calibration and acceptance test: To be able to read images diagnostically, your monitor must be set correctly. Some countries require a calibration test of the monitor according to DIN 6868-157 (for example, Germany). The monitor acceptance test is mandatory for all countries.

To get an adequate resolution, use the Mini DisplayPort to connect the monitor to your hardware client's Nvidia graphics card (the Mini DisplayPort cable is not included in delivery).

Please note that the processing of some results (for example, the detection of lung nodules or the calculation of clinical information) on hardware that just fulfills the minimal prerequisites may take longer than expected.

For optimal tool performance, it is therefore recommended to use more powerful hardware.

Consider that application virtualization has not been fully tested. Thus, it is in your responsibility when setting up a virtual environment.

3.5 Ports

syngo.via View&GO requires specific ports that open automatically during installation.

These ports are listed below:

Service/Function	Direction	Protocol	Port number
syngo.via View&GO ↔ DICOM nodes Secure DICOM	Inbound Outbound	DICOM	104 2762
Optional if Remote application support is used: *syngo*.via View&GO ← SRS	Inbound	TCP over SSL-VPN	11080
syngo.via View&GO → Siemens Cloud Services	Outbound	HTTPS	443

If you need more ports in addition to the standard ports listed, for example, to enable DICOM streaming, you will have to adapt your firewall settings accordingly.

3.6 Updates for *syngo*.via View&GO

To work safely and effectively, we recommend to regularly check for updates. The updates do not only provide the latest fixes and improvements for your *syngo*.via View&GO application, but also new functionality will be made available to you.

- To do so, you click the **Settings** icon in the access bar, and choose **Update Application** from the menu.

  The update process is started automatically.

  Your personal application settings are preserved and will be available again when the update is completed.

As a prerequisite for regular software updates, you need Internet connection.

You will be informed by the application if you have not been connected to the Internet for more than 30 days.

Skipping software versions

In case you missed a version update, for example, because you do not have constant Internet access on your computer, *syngo*.via View&GO is automatically updated to the latest version. The old version is automatically uninstalled and the latest version is installed completely new.

In this case, it is necessary to back up the patient data from the respective local directory before *syngo*.via View&GO is uninstalled. After installation, you have to configure the DICOM nodes again.

3.7 Uninstalling *syngo*.via View&GO

You uninstall *syngo*.via View&GO just like any other Windows application.

Consider that Internet access is necessary for installation as well as uninstallation of *syngo*.via View&GO.

For example, if you want to install your *syngo*.via View&GO application on a different hardware, Internet connection is necessary when uninstalling the application.

✓ Make sure that all processes are completed and that the application has been closed.

◆ Open the Windows **Control Panel** and click **Uninstall a program** in the **Programs** section.

Note that when uninstalling the application, patient data such as DICOM images, will remain on the computer.

In case you want to use the computer for another purpose, you have to explicitly delete such data beforehand.

3.8 Troubleshooting for installation and update issues

The following chapter describes problems that might occur during the installation and update process and also suggests measures for solving these problems.

3.8.1 Newly installed *syngo*.via View&GO cannot be used

Under certain conditions, for example, if the host name contains special characters, the update of the license file does not work as expected.

As a result, *syngo*.via View&GO cannot be used.

If this problem occurs, you can perform the following steps.

Start the *syngo*.via View&GO command line tool.

1 From the Windows **Start** menu, choose **syngo.via View&GO > syngo.via View&GO Command Shell**.

2 Enter the following command:
`syngo.common.starter -SW.EL.ProductInfo`

The license file is updated.

The *syngo*.via View&GO application is again ready to use.

4 Data and system security

syngo.via View&GO can send and receive sensitive data, such as personal patient data.

For this, you have to take measures to protect such data.

4.1 Protecting patient health information

When working with sensitive data such as patient data, consider protecting this data against unauthorized access or misuse.

It is recommended to encrypt the local hard disk drive on which the patient data is stored.

For encryption, you can use, for example, the BitLocker tool, a common disk encryption feature included with Windows 10. It is designed to protect data by providing encryption of entire volumes.

When using data encryption, consider that all persons who work with the system/computer need to know how to decrypt such data.

This means that access to encrypted data must be granted.

4.2 Secure communication with DICOM encryption

In order to protect patient health information (PHI), you can enable encrypted communication between *syngo*.via View&GO and its connected devices. Thus, channels that may contain PHI data are encrypted.

Prior to enabling encryption, ensure that the necessary certificates are available on your local system and on all systems that you want to communicate with.

If necessary, you have to import the required certificates.

Afterward, you can activate DICOM encryption for secure communication.

4.2.1 Importing certificates

It is important that all connected devices trust the installed certificates. That means, on each connected device, the certificates must be available in the **Trusted Root Certification Authorities** and in the **Personal** certificate store of the **Local Computer** account.

The following certificates have to be available on both nodes:

- Certificates of the **remote DICOM node**.

  You can either create root certificates or self-signed X.509 certificates.

  The certificate should contain an entry for **Enhanced Key Usage** (or Extended Key Usage) that shows **Server Authentication (1.3.6.1.5.5.7.3.1)** and/or **Client Authentication (1.3.6.1.5.5.7.3.2)** depending on whether the remote node acts as a DICOM SCP and/or SCU.

  These certificates must be imported to the **Trusted Root Certification Authorities** certificate store.

- Certificate chain representing the **local** *syngo*.via View&GO **application**.

  You can either use an X.509 certificate chain or a self-signed certificate.

  These certificates must be imported to the **Personal** certificate store.

  If you are using self-signed certificates, you must additionally import them to the **Trusted Root Certification Authorities** certificate store.

To generate certificates, you can use the tools available for managing SSL certificates or Windows IIS Manager.

To open the certificate store and import the necessary certificates, proceed as follows:

1 Open the Windows command line tool and enter **mmc.exe**.

  You must run this functionality with administrative rights.

2 Click **File > Add/Remove Snap-ins...** to open the **Add or remove snap-ins** dialog box.

3 Here, you select the **Certificates** snap-in and add it to the **Selected snap-ins**.

After you have clicked the **Add** button, you have to select the conditions for the certificate snap-in:

- First, you select that the snap-in should only manage certificates for the **Computer account**
- Second, you select that the snap-in should manage certificates only for the **Local computer**

The certificates snap-in is added to the **Console Root**.

4 Close the **Add or remove snap-ins** dialog box.

5 Extend the **Certificates** snap-in list to see the available certificates.

6 Import the required certificates:

- To import **remote node certificates**, select **Trusted Root Certification Authorities**.
- To import **local certificate chain or self-signed certificates** select **Personal**.

  Note that self-signed certificates must be additionally imported to the **Trusted Root Certification Authorities**.

7 Right-click **Certificates**, choose **All Tasks > Import** from the context menu and select the location where you want to store the certificate (select the option **Automatically select the certificate store based on the type of certificate**).

Local and remote certificates must be imported to all DICOM nodes that you want to communicate with securely.

4.2.2 Enabling DICOM encryption

Prior to enabling DICOM encryption, ensure that the necessary local and remote certificates are available on all connected devices.

To enable DICOM encryption, perform the following steps:

1 In the Windows start menu, search for ***syngo*.via View&GO Command** and select the ***syngo*.via View&GO Command** line tool.

When you enter `syngo.Common.Communication.Tools.EncryptionConfiguration.exe /?` you get help on parameters and options.

2 Enter the command `syngo.Common.Communication.Tools.EncryptionConfiguration /list` and press **Enter**.

All available certificates are listed.

3 Copy the thumbprint value of your selected certificate.

4 Enter the command `syngo.Common.Communication.Tools.EncryptionConfiguration.exe /set CertificateThumbprint=<COPIED_THUMBPRINT>` to set the selected certificate.

5 Next, you have to pin the certificates of the connected devices.

For this, enter the command `Dicom.NodeConfig.exe -cert pin=CertificateThumbprintBBB`

`CertificateThumbprintBBB` corresponds to the thumbprint of the remote node certificate.

Remember to import these certificates to the **Trusted Root Certification Authorities** of the Windows Certificates store.

To obtain the required thumbprint, you must add the **Certificates** snap-in again as described in the previous chapter.

Then you can double-click the certificate to find the corresponding thumbprint on the displayed **Details** tab and copy it to the command line.

It is possible to specify more than one certificate. To do that, simply list their thumbprints separated by a comma.

syngo.via View&GO will only communicate with connected devices whose certificates have been pinned. Only the remote node that uses the pinned certificate can establish a secure connection to *syngo*.via View&GO.

On the **Connected Devices** tab of the **Configuration** panel, you can select that *syngo*.via View&GO should communicate only securely with the connected devices.

Select the check box **Only allow encrypted DICOM communication for all incoming connections** in the **DICOM Settings for this Application** settings.

If you use **SmartConnect** to add remote DICOM nodes, you must first set a certificate and enable DICOM encryption.

4.3 Antivirus software

Install only validated antivirus software to ensure compliance with regulatory requirements for medical devices.

Non-validated antivirus software may have a negative effect on *syngo*.via View&GO.

You are responsible to regularly update the antivirus software!

The following antivirus software has been validated to be used with *syngo*.via View&GO:

Tested software	Version ≥
McAfee VirusScan Enterprise	8.8
Sophos Endpoint Security and Control	10.7.6
Symantec Endpoint Protection (64-bit systems only)	12.1.2
Trend Micro OfficeScan	11.0
Windows Defender Antivirus	Depends on the installed Windows version

Consider that most of the antivirus software products perform heuristic analysis on large data (for example, 1500 images per series).

Such analysis may degrade system performance.

Thus, it might be that when you have installed an antivirus software, *syngo*.via View&GO DICOM data transfer may become inoperable.

- In case of such performance issues, you can exclude certain folders from real-time scanning:
  - C:\Store\log\
  - C:\Program Files\syngo.ViewNGo\
  - C:\Users\Public\syngo.ViewNGo.Data\

    (In case you changed this location for storing the patient data, you have to specify the new location for patient data storage)

  Another option is to exclude *syngo*.via View&GO from real-time scanning by setting the application as trusted site.

Nevertheless, it is recommended to perform a full system scan in regular intervals.

4.4 Audit trails

Whenever patient data is accessed or processed, the action is logged and stored in the so-called audit trail.

The audit trail record is subject to security and data protection.

Audit trail records can be evaluated to trace which actions have been performed on the data of a specific patient.

The local file system is used as logging repository.

The audit trail records are stored on the local file system **C:\Store\log\Audit**.

Once audit trail records have been stored in the audit trail repository, they can no longer be modified.

You are informed as soon as the maximum audit trail storage limit is exceeded.

In this case, it is advisable to archive audit trails on a storage medium, such as a hard disk drive or another data storage location. You can then delete the audit trail files from the local file system.

To comply with HIPAA (Health Insurance Portability and Accountability Act, USA only) requirements, retain your audit trail records for at least six years.

Some additional information on the content of audit trails

The audit trail consists of numerous audit trail records.

In order to reduce the number of generated audit trail records, all accesses to a single patient are summarized in a single audit record at the study level.

Be aware that **not** all interactions in *syngo*.via View&GO are logged in the audit trail, for example, the start and stop time of the application. This information can be indirectly derived when you check for the login and logout time.

The system stores the following information in each audit trail record:

- Host name or IP address of the server node from where the audit was triggered
- AET of local node, if applicable
- Event creation date and time
- User ID (for example, account name)
- Type of audit event
- If the user has accessed patient data: patient identifier

The following actions are logged in the audit record:

- Access to patient data: create, modify, delete, or read
- Query/retrieve of image data, or reports
- Access to protected procedures: create, modify, delete, or read
- Patient data sent or received over network transfer
- Patient data imported or exported

- Captured screenshot
- User start/stop: system, Workflow, log on, log off
- Security configuration activities
- Security-sensitive application events: for example, unsuccessful logon, access attempt by unauthorized user

5 Data deletion

To ensure that sufficient storage space is available on your local file system, *syngo*.via View&GO will notify you to delete unnecessary data once a certain fill level is reached.

The notification is displayed when you close the *syngo*.via View&GO application.

The notification offers the following options:

- Automatic data deletion

  This option is selected by default.

  The oldest 20% of the locally stored data will be deleted as soon as you confirm the selection with **OK**.

- Manual data deletion

  When you confirm this selection with **OK**, the *syngo*.via View&GO application is closed.

  You can then select and manually delete patient data from the **Patient Browser**.

Consider that the small icon in the lower-right corner of the **Patient Browser** indicates the disk fill level of the local hard disk drive on which the patient data are located.

To avoid losing important data, you are therefore recommended to regularly export data that is no longer needed to an archive.

If required, you can protect data from being deleted. (➔ Page 93 *Protecting data from deletion*)

6 Reporting problems

Please inform us if you encounter any serious problems during your work with *syngo*.via View&GO.

To do this, go to the following web page and choose your region/country:

https://www.siemens-healthineers.com/services/customer-services

There you will find the relevant options for contacting us.

The competent authority for your country must also be informed about any serious problems.

In order to better analyze such problems, the Customer Care Center may ask you to submit the relevant log files.

7 *syngo*.via View&GO user forum

The *syngo*.via View&GO user forum provides helpful information and practical tips about this application.

It serves as an exclusive platform where you can exchange experience with other users and ask questions if you require feedback on specific topics.

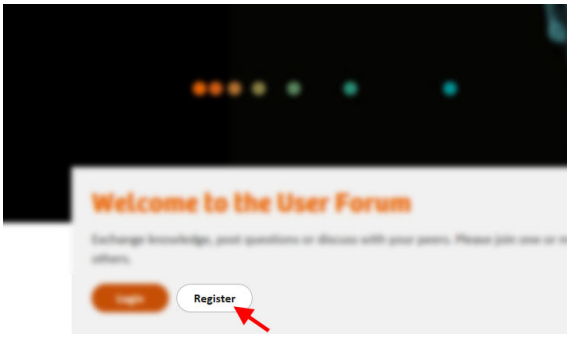
When you visit the user forum for the first time, you will have to register and apply for an account.

The steps to follow to obtain access to the user forum are described below:

1 Point to the **Community** icon on the access bar of *syngo*.via View&GO and choose **Community**.

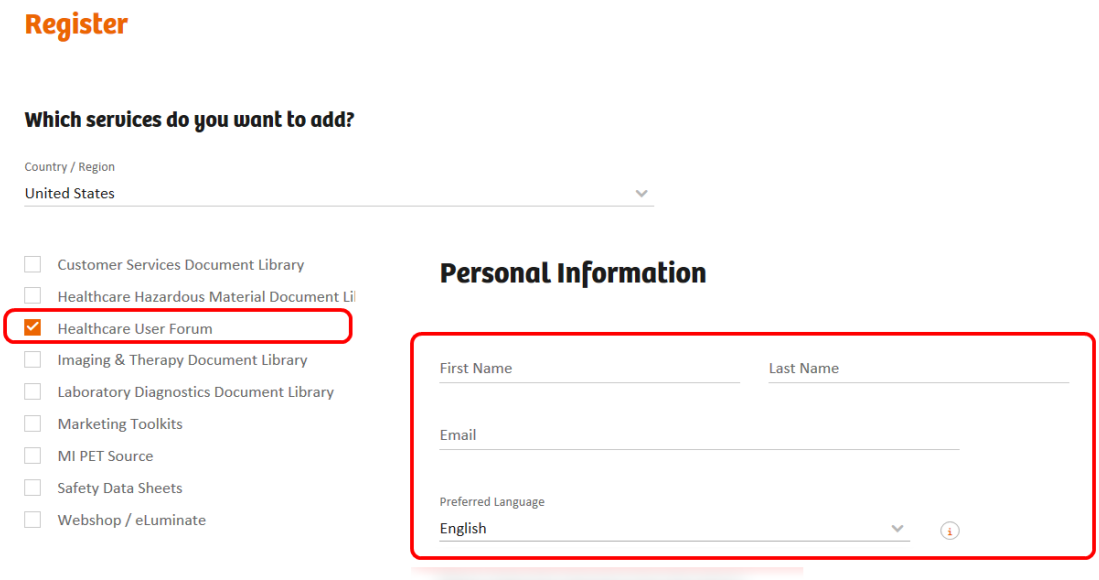
– or –

Open an Internet browser and type in the following URL: https://forum.siemens-healthineers.com.



2 To apply for an account, click **Register**.

You are asked to select the services that you want to use.

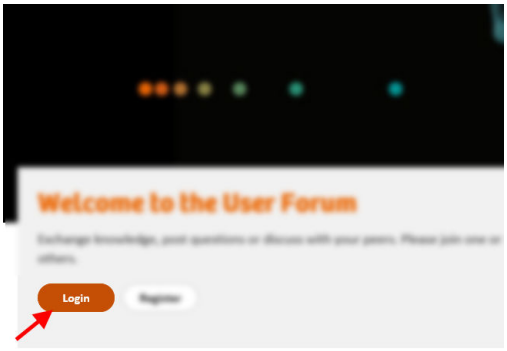


3 For access to the *syngo*.via View&GO user forum, select the **Healthcare User Forum** service.

4 To complete registration, enter the necessary **Personal Information** and click the **Submit** button.

An email is sent to you to confirm the registration.

5 Click the link in the email to activate your account.



6 After you logged on to the **Healthcare User Forum** , select the *syngo*.via View&GO user group and send a request to join this group.

Once you are a member of this user group, you can get in contact with other *syngo*.via View&GO users and share your knowledge with them.

Under the **Community** icon, you will find an additional option to define quick access to favorite web pages or network folders. When you choose **More...** the **Internet and File Access Definition** dialog box opens.

Here, you can enter your favorite web pages and network folders, and define their order of appearance in the **Community** menu.

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

8 Accessing training material

syngo.via View&GO provides a direct connection to your learning material available on our personalized education platform **PEPconnect**.

1 Move the mouse over the **Help** icon and choose **Online Training** from the menu.

The **PEPconnect** web page opens.

Here, you can easily access the available training material.

2 Select **Explore PEPconnect > Medical Imaging and Therapy > Advanced Visualization and Imaging IT > syngo.via View&GO**.

Alternatively, you can also open an Internet browser and type in the following URL to access the *syngo*.via View&GO training area directly:

https://pep.siemens-info.com/en-us/syngo-via-view-go

PEPconnect offers online training courses and job aids, all tailored to the usage of *syngo*.via View&GO.

Consider that you first have to register in **PEPconnect** to obtain access to the full range of training material (https://pep.siemens-info.com).

Once you have accessed the **PEPconnect** start page, you proceed as follows to register:

- Click **Log in / Register** in the upper-right corner and then click the **Register** button.
- Enter the necessary information.

  An email is sent to you to confirm the registration and to activate your **PEPconnect** account.
- You can now set up your profile and start to explore the available learning activities in **PEPconnect**.

---

9 Opening and closing *syngo*.via View&GO

You open *syngo*.via View&GO just like any other application on your computer.

1 Double-click the ***syngo*.via View&GO** icon on the desktop.

***syngo*.via View&GO** opens.

2 To close the application window, click the **Close** icon in the upper right corner.

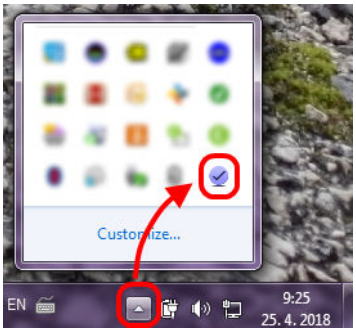
When a study has been loaded into the Viewer and you click the **Close** icon, then only the study is closed. When you click the **Close** icon once more, the application window is closed.

When you close the *syngo*.via View&GO application window, you will be informed about jobs running in the background that are not finished yet. Hence, you will be informed if transfer jobs are still ongoing or if the open study has not yet been saved.

In such cases, it is recommended to wait until all jobs have been completed before attempting to close the *syngo*.via View&GO application window again.

If you do not wait and nevertheless close *syngo*.via View&GO, all running jobs will be canceled.

In some cases, it might be necessary to exit *syngo*.via View&GO, for example, if the application is not working properly.



Right-click the *syngo*.via View&GO icon in the Windows tray and choose **Exit** from the context menu.

Consider that in this case all running jobs will be canceled **without** any notification.

Therefore, it is recommended that you close the application window so that you can be informed about running jobs and proceed accordingly. Then you can close the application in the Windows tray.

9.1 Some additional tips when starting the application

- Consider that the *syngo*.via View&GO application may not open if your Windows user account name contains special characters.

  Therefore, avoid using special characters when creating user account names.

  The following characters are not allowed:

  :?|&"#+,;<=>*()/

- You cannot start the application without a network connection.

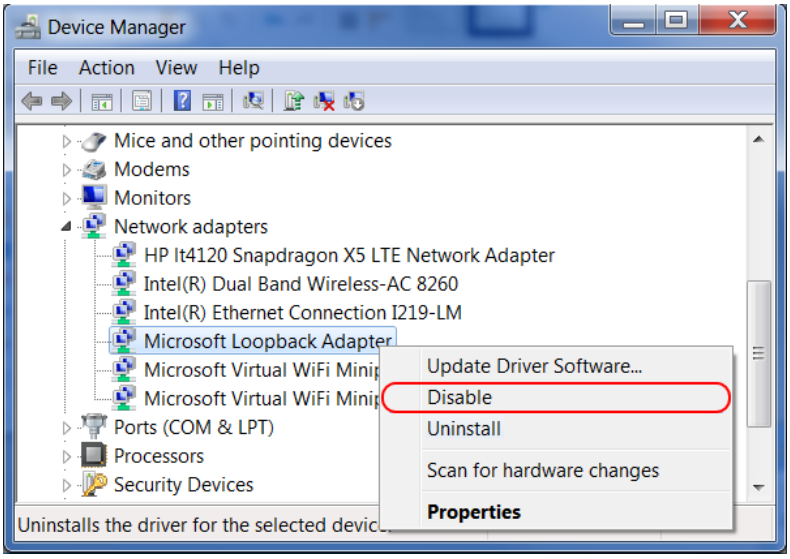
  If you try to start the application when no network is available, you are asked to connect to a network because some components of the application require a specific infrastructure.

  In this case, you do the following: If you cannot connect to any network, use/install a loopback adapter instead.

  – Enter **`hdwwiz`** in Windows search.

  – Select “Network adapters” as hardware type, select “Microsoft” as Manufacturer, and select the “Microsoft Loopback Adapter”.

- In order to be able to establish an **actual** network connection later on, do not forget to disable the “Microsoft Loopback Adapter” again from the **Device Manager**.



10 Configuring *syngo*.via View&GO

Before you start working with *syngo*.via View&GO, you can configure some basic settings.

All available configuration tasks are provided in the **Configuration Panel**.

◆ Click the **Settings** icon to open the **Configuration Panel**.

The following tabs provide several configuration options:

- **Client Settings**: settings to change the size of the font and controls and to select the language of your user interface

  (➔ Page 70 *Changing the client settings*)

- **Connected Devices**: configuration of DICOM nodes to receive or send images

  (➔ Page 71 *Configuring DICOM nodes*)

- **Display and Behavior**: settings to change the font size of measurements and annotations, to define the quality of snapshots, to customize the displayed image text, and to change the behavior of corner menus and mini toolbars

  (➔ Page 80 *Adapting the display and behavior*)

- **Backup Settings**: create a backup file of your personal settings, which includes, for example, the list of configured remote DICOM nodes

  (➔ Page 80 *Storing your personal application settings*)

10.1 Changing the client settings

On the **Client Settings** tab, you change general settings of *syngo*.via View&GO.

1 Select the **Client Settings** tab.

2 Change the following settings as required:

- **Visual Appearance**: to adjust the size of the font and controls in *syngo*.via View&GO

  With the **Troubleshoot** button, you open the **Troubleshoot size fonts and controls** dialog box. Here, you can disable the automatic scaling of the font size and the size of the controls.

- **UI Language**: to change the language of the user interface and to select a format for date, time and numbers

- **Visibility of syngo.via application**: to specify whether the Windows taskbar and other applications should be displayed in the foreground or background when *syngo*.via View&GO is open.

3 Click **Apply** to accept your changes.

Your changes will be applied after you restart the application:

Right-click the *syngo*.via View&GO icon in the Windows tray and choose **Exit** from the context menu to exit the application.

Then you can reopen the application window.

10.2 Configuring DICOM nodes

To receive images from the modality for reading or sending images to the PACS or a DICOM printer, it is necessary to configure DICOM nodes.

The **Configuration Panel** of *syngo*.via View&GO provides an option for configuring DICOM nodes and thus connecting the devices for data exchange.

You can configure DICOM nodes manually or automatically with the SmartConnect functionality, which is described in the following sections.

(→ Page 72 *Configuring DICOM nodes manually*)

(→ Page 74 *Configuring DICOM nodes automatically*)

After you have configured the necessary DICOM nodes in *syngo*.via View&GO, it may be necessary to configure *syngo*.via View&GO as a remote DICOM node on the configured target nodes, too.

You will find a description of this procedure in Chapter (➔ Page 76 *Configuring syngo.via View&GO as a remote DICOM node*)

Configuring DICOM printers

When you add a DICOM printer to the list of connected devices, you can also add the necessary DICOM printer settings, such as **Supported Films / Papers** or **Supported Media**, directly in the configuration window.

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

10.2.1 Configuring DICOM nodes manually

Consider that when performing a DICOM node configuration, it is useful to have the required system information of the target system at hand.

To learn where this information is to be found, see Chapter (➔ Page 78 *Additional hints for remote DICOM node configuration with syngo.via View&GO*), section "*Where can I find the modality-specific settings?*"

1. In the **Configuration Panel** of *syngo*.via View&GO, select the **Connected Devices** tab.
2. First, adapt the settings of your local DICOM node and enter the **Application Entity Title (AE Title)** and the **Port** for incoming DICOM communication.
3. Click **Apply** to save the local settings.

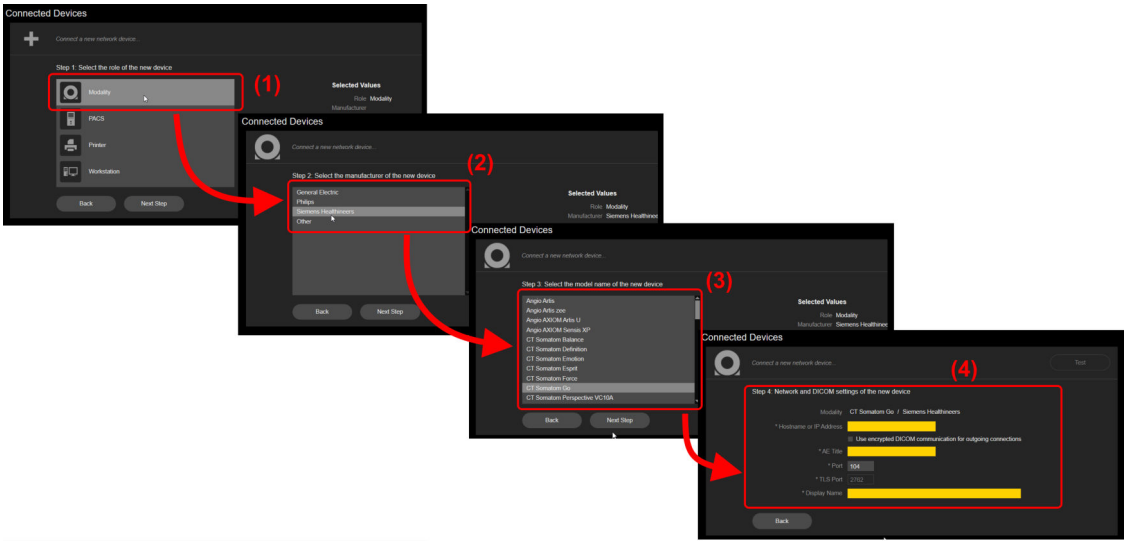
If you change the local settings, for example, the port number, you have to restart the *syngo*.via View&GO application.

The setting for **DICOM Specific Character Set** is filled automatically with the character set information received from the operating system.

If required, you can change these settings.

Afterward, you can proceed by adding remote DICOM nodes.

4 Click the **Connect a new network device...** panel, select the option **Connect Manually** and follow the further instructions:



(1) Select the type of device.
(2) Select the manufacturer of the device.
(3) Select the model name.
(4) Enter the network and DICOM settings of the device.

5 Click the **Apply** button to add the required target system to the list of connected devices.

You can test your settings by clicking the **Test** button.

Consider that for testing the settings, *syngo*.via View&GO needs to be already configured as remote DICOM node on the target system.

6 Repeat this procedure until all necessary DICOM nodes are configured.

The configured devices will be listed.

7 Click one of the device panels to display its individual settings.

You can edit the device settings at any time.

10.2.2 Configuring DICOM nodes automatically

With **SmartConnect**, you can automatically add other remote DICOM nodes by simply entering the host name or IP address, the SmartConnect port number, and the passphrase of the target system.

If the passphrase has not been set on the target system, you can leave this option empty.

It is not necessary to select a specific template for the required remote DICOM node because the information of the remote system such as AE Title, port number for incoming DICOM communication, role, manufacturer, and model is automatically retrieved.

In return, the settings of your local node are submitted to the requesting remote node and automatically added to the remote DICOM node list.

To use **SmartConnect**, your local system and the remote DICOM node must be a Siemens Healthineers system and capable of adding remote DICOM nodes with **SmartConnect**. Otherwise the configuration will not work.

Communication with **SmartConnect** is only possible if the corresponding certificate is installed.

If the certificate is not available, **SmartConnect** will use a self-signed certificate.

1 In the **Configuration Panel** of *syngo*.via View&GO, select the **Connected Devices** tab.

2 First, adapt the settings of your local DICOM node and enter the **Application Entity Title (AE Title)** and the **Port** for incoming DICOM communication.

3 Click **Apply** to save the local settings.

If you change the local settings, for example, the port number, you have to restart the *syngo*.via View&GO application. Otherwise you cannot add remote DICOM nodes.

The setting for **DICOM Specific Character Set** is filled automatically with the character set information received from the operating system.

If required, you can change these settings.

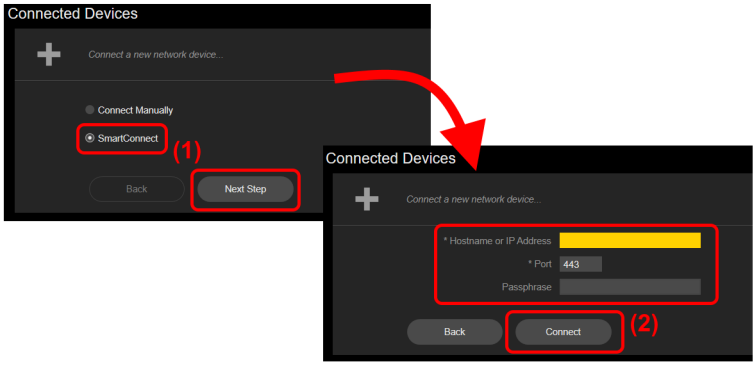
Afterward, you can proceed by adding further remote DICOM nodes.

4 Click the **Connect a new network device...** panel, select the **SmartConnect** option (1).

5 Click **Next Step** and enter the information of the target system, which is **Hostname or IP Address**, SmartConnect **Port** and the **Passphrase** of the remote system (2).

This **Passphrase** must be specified at the remote system, for example, the modality. It must be entered here to connect *syngo*.via View&GO with the remote system.

If the passphrase has not been set on the target system, you can leave this option empty.



Consider that when performing a DICOM node configuration, it is useful to have the required system information of the target system at hand.

To learn where this information is to be found, see Chapter (➔ Page 78 *Additional hints for remote DICOM node configuration with syngo.via View&GO*), section "*Where can I find the modality-specific settings?*"

6 Click the **Apply** button to add the required target system to the list of connected devices.

Consider that the SmartConnect functionality is using self-signed certificates by default. This might lead to error messages when trying to connect another system.

Therefore, it is recommended to replace the self-signed certificates with CA certificates on the local and on the target system.

---

7 Repeat this procedure until all required DICOM nodes are configured.

The configured devices will be listed.

8 Click one of the device panels to display its individual settings.

You can edit the device settings at any time.

10.2.3 Configuring *syngo*.via View&GO as a remote DICOM node

In order to exchange data, you will have to configure *syngo*.via View&GO as a remote DICOM node at the other DICOM nodes, too, for example, at the modality.

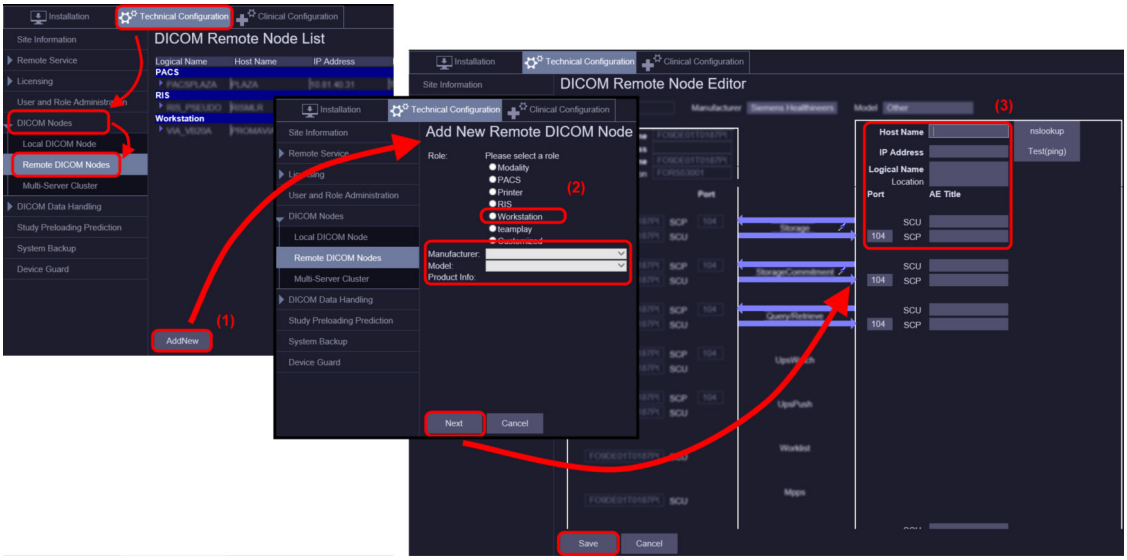
The following describes the workflow at the modality for configuring *syngo*.via View&GO as a remote DICOM node.

1 On the access bar of the modality application, point to the **Settings** icon and choose **Administration Portal** from the menu.

2 Log on with administrative credentials.

3 Select the **Technical Configuration** tab and choose **DICOM Nodes > Remote DICOM Nodes** from the navigation tree.

The **DICOM Remote Node List** opens.



4 Click **Add New** (1).

The **Add New Remote DICOM Node** window opens.

5 To add *syngo*.via View&GO, select the role **Workstation** (2).

Afterward, select the corresponding **Manufacturer** (which is Siemens Healthineers) and **Model**.

If *syngo*.via View&GO is not included in the **Model** list, simply choose **Other**.

6 In the **DICOM Remote Node Editor**, enter the device-specific settings of *syngo*.via View&GO, such as **Host Name** and **AE Title** (3).

You will find these settings in the *syngo*.via View&GO **Configuration Panel**, in the upper area of the **Connected Devices** tab.

After you have configured the DICOM nodes, you can check the connection between them.

In the **DICOM Remote Node Editor** window of the **Administration Portal**, click the **Test** button.

10.2.4 Additional hints for remote DICOM node configuration with *syngo*.via View&GO

Where can I find the modality-specific settings?

If you want to add a specific modality as remote DICOM node, you need the device-specific settings of this modality.

The following describes the workflow at the modality to find information on its **Host Name**, **IP Address**, **AE Title** and **Port** for DICOM communication.

- On the access bar of the modality application, point to the **Settings** icon and choose **Administration Portal** from the menu.
- Log on with credentials of a user who has the role IT Admin.
- Select the **Technical Configuration** tab and choose **DICOM Nodes > Local DICOM Nodes** from the navigation tree.

  Here, you will find the information which is necessary for DICOM node configuration.

- If you are using the automatic DICOM node configuration (**SmartConnect**), you will only need the SmartConnect port number and a **Passphrase** of the required remote system, for example, of the modality.

  To specify passphrase, select the **Technical Configuration** tab and choose **DICOM Nodes > SmartConnect** from the navigation tree and enter the passphrase.

  This passphrase must be known to all remote systems that should connect to the modality.

Further hints:

- To check the connection to a single DICOM node, click the **Test** button in the settings area of this DICOM node.

  An automatic test routine starts. You will be informed if any connection interferences exist.

  You can also choose **Test connectivity for all remote devices** from the context menu to check the connections of all configured devices at once.

- To undo changes to a device, right-click the device and choose **Undo changes for this device**.

- To delete a device, right-click the device and choose **Remove this device** from the context menu or expand the respective device settings and click the **Remove** button. The node will be removed from the list.

  Note that after removing a device from the list, you need to confirm with **Apply** or **OK**. Otherwise the device will be visible again when you open the **Configuration Panel** the next time.

- A red dot next to the device icon indicates that the entered device settings are invalid. In this case, you should check the settings of the connected device.

- A red dot displayed during the connection test indicates connection interferences.

- You can cancel the configuration of DICOM nodes at any time. Right-click the node and choose **Cancel adding this device** from the context menu.

10.3 Adapting the display and behavior

The **Display and Behavior** tab offers options to adapt certain elements on the user interface.

1 Select the **Display and Behavior** tab.

2 Change the following settings as required:

- **Measurements and Snapshots Configuration**: to predefine the font size of annotation texts, to select the quality for displaying snapshots on different monitor types and the quality for saving snapshots
- **Series Navigator**: to define how MR data sets are displayed on the **Series** panel.
- **Image Text Configuration**: to customize the displayed image text
- **Corner Menu and Mini Toolbar Configuration**: to configure how corner menus and mini toolbars should be opened, either by clicking or by hovering over them.
- **Application Update Configuration**: to define that available update packages should be automatically downloaded.

  If you select this option, you will be informed that an update package is available on your system as soon as you close the application.

  The update package then only needs to be installed.
- **Patient Tab** configuration: to determine whether changes and results should be saved or discarded when you close the patient tab.

  By default, the saving option is selected.

3 Click **Apply** to accept your changes.

10.4 Storing your personal application settings

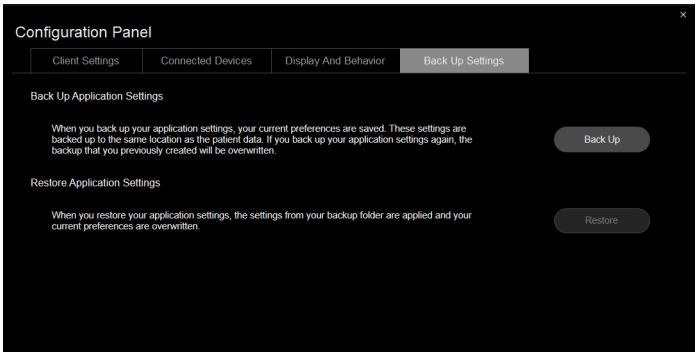
syngo.via View&GO can be adapted to your needs for your daily work.

You can configure settings such as the list of connected remote DICOM nodes or the display settings in the Patient Browser and in the Viewer.

To preserve these personal settings in *syngo*.via View&GO, it is recommended that you back them up on a regular basis.

This backup might be useful, for example, if you need to update the Windows version on your computer and subsequently reinstall the *syngo*.via View&GO application. You can then easily restore your settings from this backup.

The **Configuration** panel of *syngo*.via View&GO provides a backup/ restore functionality.



◆ Select the **Back Up Settings** tab.

Here, you will find the options to either create a **Back Up** or to **Restore** your personal settings.

Consider the following when backing up or restoring your personal settings:

- When you create a backup for the first time, a **BackupSettings** folder is automatically created in the same directory in which the patient data is stored.

  Remember that you selected the location for patient data during the installation of *syngo*.via View&GO.

  Each time you click the **Back Up** button, the previous backup will be overwritten.

- Do **not** change the name and the content of the **BackupSettings** folder. Otherwise, you will not be able to restore your personal settings.

- It is recommended that you additionally store the **BackupSettings** folder on an external storage medium.

  If your system crashes, you can restore your personal settings.

- If you have stored the **BackupSettings** folder on an external medium, you must first copy the folder into the directory in which it was initially created. Then you can restore the application settings.

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

11 Performing a display compatibility check

After installing *syngo*.via View&GO on your system, you will have to perform a display compatibility check. Otherwise *syngo*.via View&GO is not validated for clinical use.

The validation is necessary to check whether *syngo*.via View&GO is working as intended on your system.

The display compatibility check requires some mandatory steps. You perform this validation using a test data set that comes with *syngo*.via View&GO.

As long as the display compatibility check has not been performed, the **Display Compatibility Check** dialog box will open every time you open a study in the Viewer.

✓ Internet connection is available.

1 In the **Patient Browser**, search for the test data set.

2 Double-click the data set to open it in the Viewer.

The **Display Compatibility Check** dialog box opens.

3 Follow the given steps.

4 After you have completed the required test steps, you can use *syngo*.via View&GO as a medical device.

If you click **Cancel** or close the validation dialog box, you can still use the *syngo*.via View&GO software, but only as a non-medical device.

To open the dialog box again, reopen the test data set or click the **Settings** icon in the access bar of *syngo*.via View&GO and choose the **Display Compatibility Check**.

Some additional tips that you should consider when performing a display compatibility check:

- The display compatibility check does **not** replace monitor configuration and calibration. The purpose of this display compatibility check is to ensure that *syngo*.via View&GO works as intended on the installed system.

  You are responsible for appropriate monitor configuration and calibration.

- The display compatibility check is recommended to be repeated in the following cases:
  - After any software update
  - Whenever the display configuration of your local computer is changed, for example, after installation of another GPU, after updating the GPU driver, or after changing the monitor resolution.

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

12 Remote Assistance

If you need support with your *syngo*.via View&GO application, you can use **Remote Assistance** to establish remote connections to the Customer Care Center.

Before you can use the **Remote Assistance** you have to perform some initial steps to configure the connection settings and install the software that is necessary for remote assistance.

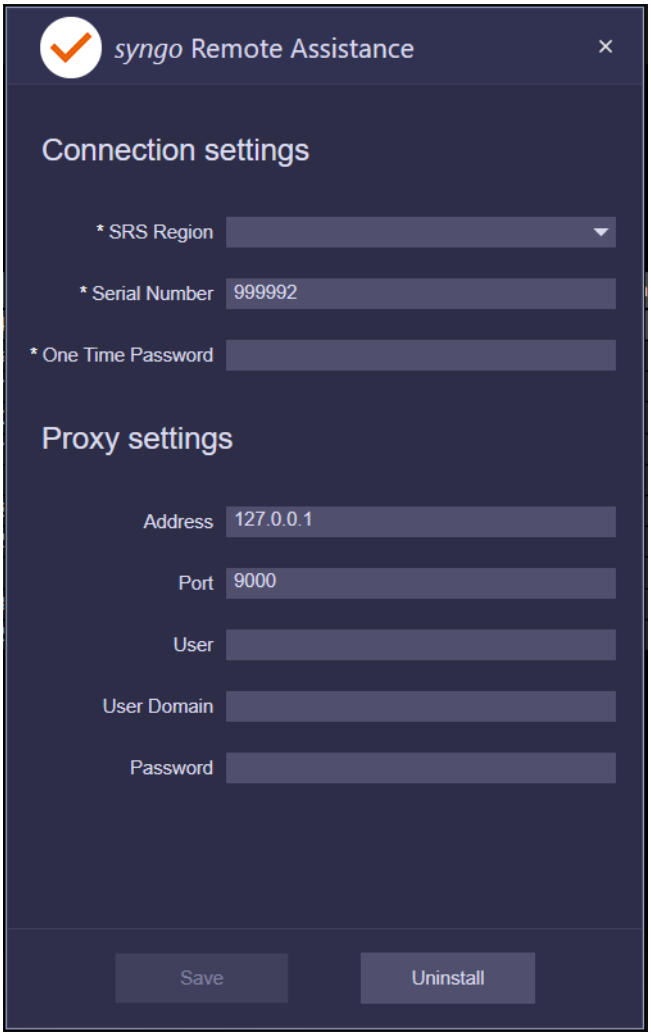
12.1 Configuring Internet-based connection

When using the **Remote Assistance** for the first time, you have to configure the connection settings and install the software that is necessary for remote assistance.

✓ Internet connection is available.

1 Point to the **Remote Assistance** icon on the access bar of *syngo*.via View&GO and choose **Remote Assistance** from the menu.

The **syngo Remote Assistance Installer** dialog box opens.



You can also open the **syngo Remote Assistance Installer** from the Windows **Start** menu: **Configure Remote Assistance**.

2 Select an **SRS Region**, for example, **Asia** , **Europe**, **USA**.

3 Enter a **Serial Number** and **One Time Password**.

You will find the **Serial Number** in the **About** box of your *syngo*.via View&GO application.

To receive a **One Time Password**, please contact your Customer Care Center.

If *syngo*.via View&GO was already installed on the system before, the **Serial Number** is filled automatically.

4 If you have an Internet proxy, you also need to configure the required **Proxy settings**

If you have already configured proxy settings on your computer, for example, to get internet access, these settings will be automatically displayed in the **Proxy settings** section and must not be configured again.

You just have to enter user name and password once more.

5 Click **Install** to start the installation of the remote assistance software.

As soon as the installation is completed, the **syngo Remote Assistance** dialog box is displayed.

Here, you can request for remote assistance.

When you choose **Remote Assistance** from the respective menu next time, the **syngo Remote Assistance** dialog box opens right away.

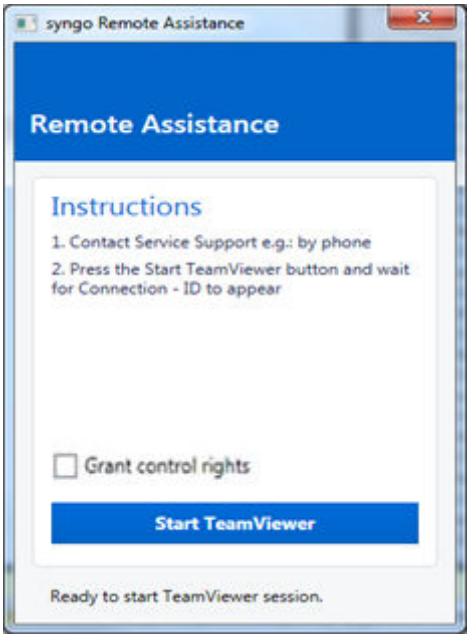
12.2 Using Remote Assistance

After you configured the necessary connection settings and the **syngo Remote Assistance** software is available on your computer, you can start to use **Remote Assistance**.

✓ Internet connection is available.

1 Point to the **Remote Assistance** icon on the access bar of *syngo*.via View&GO and choose **Remote Assistance** from the menu.

The **syngo Remote Assistance** dialog box is displayed.



You can also open the **syngo Remote Assistance** from the Windows **Start** menu: **Start Remote Assistance**.

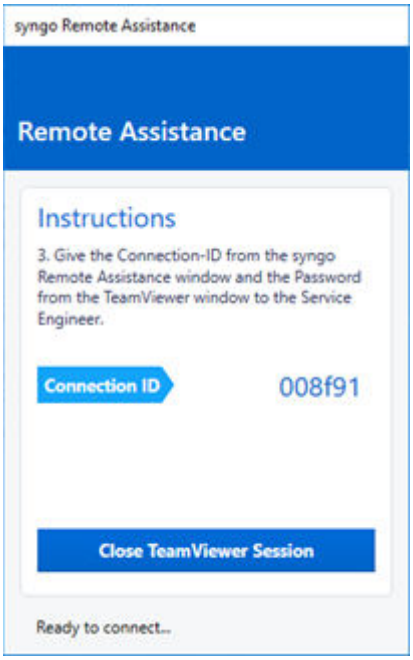
You can choose whether you want to give control rights to your service organization.

If you select the check box **Grant control rights**, you allow the service organization to interact with your computer.

2 Click **Start TeamViewer**.

The **syngo Remote Assistance** dialog box shows detailed instructions on how to continue.

The dialog box also provides the unique **Connection-ID**, which needs to be communicated to the Customer Care Center.

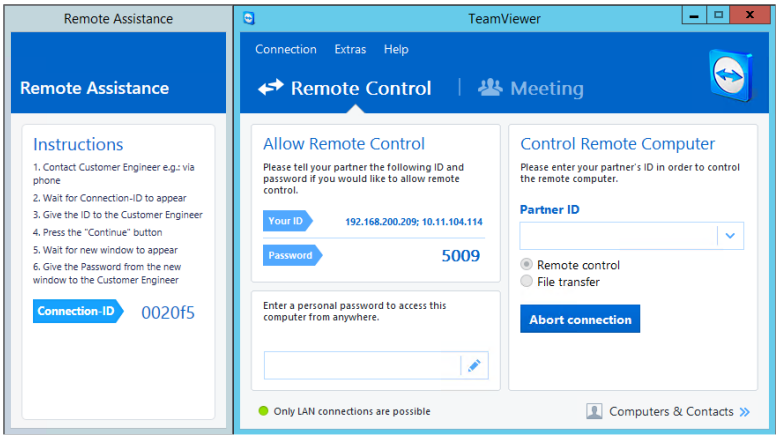


The Customer Care Center will use the connection ID to identify your system.

3 Contact your Customer Care Center by phone and provide the assigned **Connection-ID** and the **TeamViewer Password**.

After entering the provided access data, your Customer Care Center will initiate a remote desktop connection to your system.

When the **TeamViewer** window opens, the remote connection has been successfully established. Your Customer Care Center can now interact with your workstation to provide dedicated application support.



4 After the support session, close the **TeamViewer** window to end the remote desktop connection.

To start a new remote desktop connection, a new **Connection-ID** and a new password are required.

13 Loading images into the Viewer

All locally available studies are listed in the **Patient Browser**.

From here, you load the study into the Viewer.

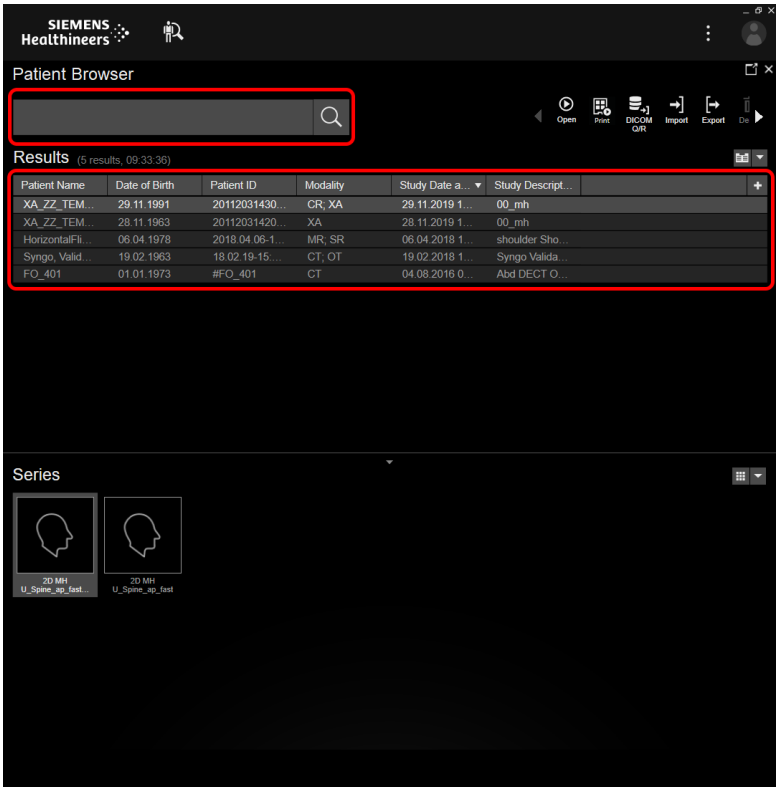
If the required study is not available in the **Patient Browser**, you can search for the study on DICOM nodes or external media and import it to your system. (→ Page 97 *Searching for patient data on other systems*)

The **Patient Browser** provides tools for changing the display settings and tools for handling patient data.

(→ Page 99 *Changing the display settings of the Patient Browser*)

(→ Page 100 *Tools of the Patient Browser*)

1 Click the **Patient Browser** icon to open it.



The **Patient Browser** lists all available studies.

2 If you cannot find the required study right away, you can search for a specific patient.

The list of studies in the **Results** area is updated according to your search criteria.

3 To load the required study into the Viewer, double-click the study.

– or –

Select the required study in the results list and click the **Open** icon in the toolbar.

Only **one** Viewer tab can be open at a time. As soon as you open another study, the previously loaded study will be closed.

Consider that the small icon in the lower-right corner of the **Patient Browser** indicates the disk fill level of the local hard disk drive on which the patient data are located.

To avoid losing important data, you are therefore recommended to regularly export data that is no longer needed to an archive.

13.1 Loading multiple studies

You can load studies of different time points from the **Patient Browser**, for example, a prior study and a current study to compare both time points.

1 Press and hold the **Ctrl** key and select the required studies in the **Results** list of the **Patient Browser**.

Make sure that the selected data really belongs to the same patient.

2 Click **Open** in the toolbar of the **Patient Browser** to send the selected studies to the Viewer.

The study is available in the **Series** panel.

The prior study is labeled **Prior 01**, whereas the current study is always labeled **Current**.

13.2 Protecting data from deletion

In the **Patient Browser**, you can prevent data from being deleted from the system.

Information about the protection state is shown in the **Delete Protection** column.

You can add this column to the default columns by clicking the **Plus** icon in the **Results** list and selecting the respective check box.

- In the **Results** list, right-click the study, that you want to protect from deletion and choose **Set Delete Protection state > Protect from Deletion** from the context menu.

If you want to remove the delete protection from a study, right-click the study and choose **Set Delete Protection state > Remove Delete Protection**.

You can find further information about data deletion in *syngo*.via View&GO in the "Data deletion" chapter. (➔ Page 61 *Data deletion*)

13.3 Reprocessing X-ray projection images into a 3D volume

syngo.via View&GO allows reprocessing of suitable X-ray image data (2D projection images) into 3D image data.

The image data used to be reprocessed must have been generated by 3D acquisition with a compatible X-ray system (such as Multitom Rax).

If the parameters are not as expected, you can simply adjust the parameters and repeat reprocessing directly in the Viewer.

The 3D reprocessing functionality is part of the XP (X-ray Products) extended functionality package.

As soon as you load a 2D projection data set into the Viewer, reprocessing automatically starts in the background. The processing activity is indicated by a progress bar in the patient tab.

In the Viewer, you will then see the reprocessed 3D volumes.

Consider that 3D reprocessing only starts automatically if you load just one data set / study into the Viewer. If you load data sets of several studies at once, automatic 3D reprocessing is not started.

If the result images do not meet your requirements, you can adjust the reprocessing parameters and then repeat reprocessing of the displayed images as described below.

1 Select a segment with a 2D projection data set that is suitable for X-ray reprocessing.

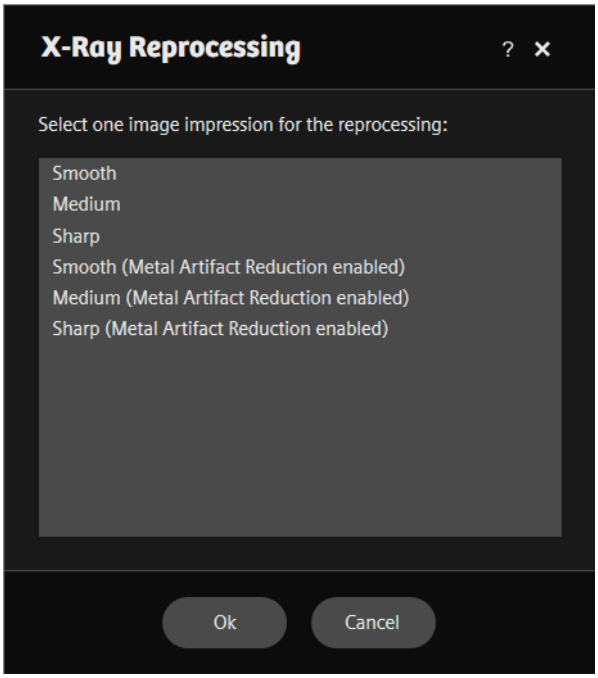
You know whether the data set that you have selected is suitable if the **Reprocessing** icon becomes active.

2 In the **Favorite Tools**, click the **Reprocessing** icon.

The **X-Ray Reprocessing** window opens.

Here, you can select a different parameter for reprocessing. For example, you can select the option to reduce metal artifacts.

The set of parameters that are displayed depends on the loaded data set.



As soon as you click the **OK** button, the window closes and reprocessing of the images is started again.

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

13.4 Reprocessing X-ray projection images into topogram

syngo.via View&GO allows reprocessing of 2D projection images into 2D X-ray image data (topogram). This 2D projection image data must have been acquired with a compatible X-ray system (such as Multitom Rax).

The reprocessing functionality is part of the XP (X-ray Products) extended functionality package.

As soon as you load the 2D projection images into the Viewer, reprocessing automatically starts in the background.

In the Viewer, you will then see the reprocessed images.

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

13.5 Searching for patient data on other systems

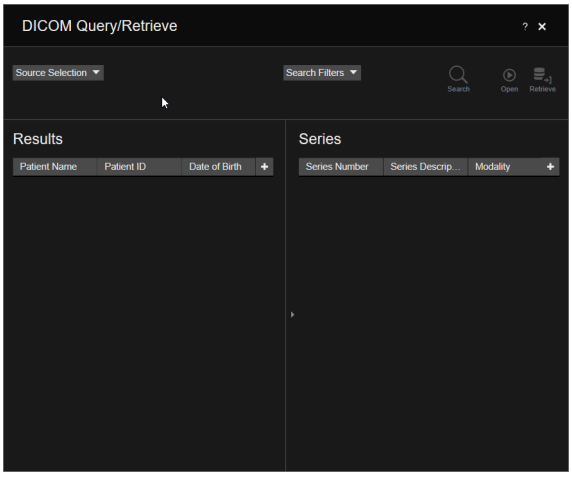
If studies are not available in the **Patient Browser**, you might have to search for them on other DICOM nodes or external media and import the data to your system.

You can only search for studies on DICOM nodes if remote DICOM nodes have been configured.

(➔ Page 71 *Configuring DICOM nodes*)

1 To search for studies on DICOM nodes, click the **DICOM Q/R** icon in the **Patient Browser**.

The **DICOM Query/Retrieve** dialog box opens.



2 Click **Source Selection** to select the node where you want to search for studies.

3 Click **Search Filters** to specify the search criteria.

The settings for **Source Selection** and **Search Filters** are retained. When you reopen the **DICOM Query/Retrieve** dialog box, the search results will be immediately displayed.

4 Click the **Retrieve** icon to load the study into the **Patient Browser**.

– or –

Click the **Open** icon to retrieve the study and load it immediately into the Viewer.

The retrieved images will be successively loaded into the Viewer in a 2D layout. As soon as all retrieved images have been loaded, you can visualize the images in 3D display type.

The **Show in 3D** icon is a useful indicator and becomes active as soon as all images are available locally.

Consider that you will not be informed about partial studies in *syngo*.via View&GO.

Partial studies might occur in the following cases:

- The **Autorouting** functionality has been enabled at the modality. A scan is in progress at the modality and parts of the acquired images are immediately sent to *syngo*.via View&GO.
- You retrieve a study from the modality and start reading while retrieval is still in progress.
- You import a study from a local medium and start reading while importing is still in progress.

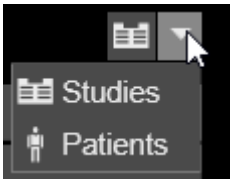
In such cases, you should check that the patient data in the **Patient Browser** is complete.

You can compare the number of images between *syngo*.via View&GO and the source (for example, the modality). If you detect a mismatch, reopen the study and continue reading.

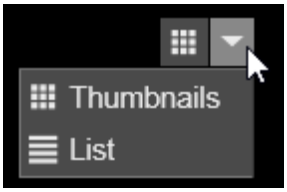
13.6 Changing the display settings of the Patient Browser

The **Patient Browser** offers different views for looking at data. Select your favorite view.

1 In the **Results** list, switch between the **Studies** view and the **Patients** view.



The presentation of the data is restructured accordingly. The **Studies** view lists all studies one by one. The **Patients** view groups the available studies on patient level.



2 In the **Series** list, switch between the **List** view and the **Thumbnails** view.

The view displays all series contained in a study as a list or thumbnails of the first image of each series.

You can also undock the **Patient Browser** window and make it a floating window.

Click this icon to undock the **Patient Browser** and move the window to another position. This position is retained when you next open *syngo*.via View&GO.

13.7 Tools of the Patient Browser

Further options are available in the toolbar of the **Patient Browser** to process data.

Open	Loads patient data for reading into the Viewer Keyboard shortcut: **Ctrl** + **O**
Print	Opens the **Printing** window for printing the selected data Keyboard shortcut: **Ctrl** + **P**

 **DICOM Q/R**	Searches and retrieves studies from external media or DICOM nodes As a prerequisite, remote DICOM nodes must be configured or CD/DVD/USB media containing a DICOMDIR must be inserted in the workplace. Keyboard shortcut: **Ctrl** + **R**
 **Import**	Imports files from the file system, external media, or network nodes Opens the **Import** dialog box to specify the source and select the data that you want to import Keyboard shortcut: **Ctrl** + **I**
 **Export**	Exports DICOM data to optical discs, to file systems, or network nodes (such as PACS) Opens the **Export Data** dialog box to specify the export target (file system or DICOM node) and to specify the export properties. Keyboard shortcut: **Ctrl** + **E**
 **Delete**	Deletes data from the defined local hard disk drive where the data is stored. You can restore the deleted data by importing it again from the original source (for example, USB stick, or PACS).

14 Adapting the Viewer

syngo.via View&GO offers you a high degree of flexibility to create a viewing environment that best suits your requirements and in which you can work efficiently.

The Viewer provides a flexible screen layout, which comprises an image area and several panels, such as the **Viewing** panel, the **Favorite Tools** panel, or the **Series** panel.

All panels can be rearranged.

You can decide whether to move the panel to a predefined position on the screen or to undock the panel and make it a floating window.
(➔ Page 102 *Rearranging panels*)

Besides adapting the screen layout, you can also adjust the **Favorite Tools** area to have your preferred tools instantly available, and you can specify a set of your preferred layouts.

(➔ Page 104 *Configuring your favorite tools*)

(➔ Page 105 *Defining preferred layouts*)

All these settings will be retained when you next open the Viewer.

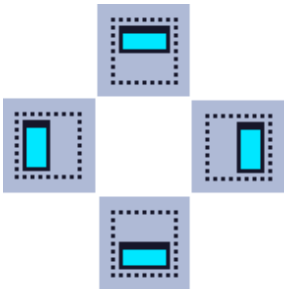
Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

14.1 Rearranging panels

You can undock each panel and move it to another predefined position on the screen.

1 Click the header of a panel and drag it to the required position on the screen (top, bottom, left, right).



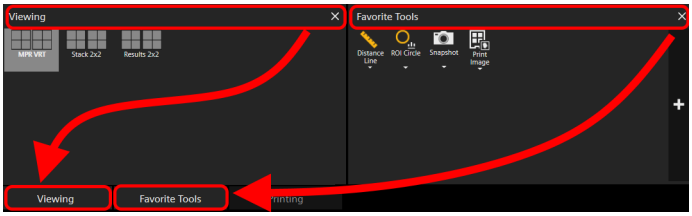
When you move the mouse over a specific area on the screen, icons appear and show possible drop positions.

When you move the mouse over another panel, an icon may appear indicating that you can add the dragged panel as an additional tab to the target panel.

– or –

To detach a panel and make it a floating window, click the panel header and drag it to any position on the screen.

When you release the mouse button, the selected panel is displayed as a separate window.



2 To show or hide panels, click the tabs at the side or at the bottom of the screen.

– or –

Click the **X** icon in the upper right corner of a panel to hide a panel.

The panel closes. To reopen the panel, click the tab again.

You can configure even more settings to customize the Viewer in order to make your work with it as comfortable as possible.

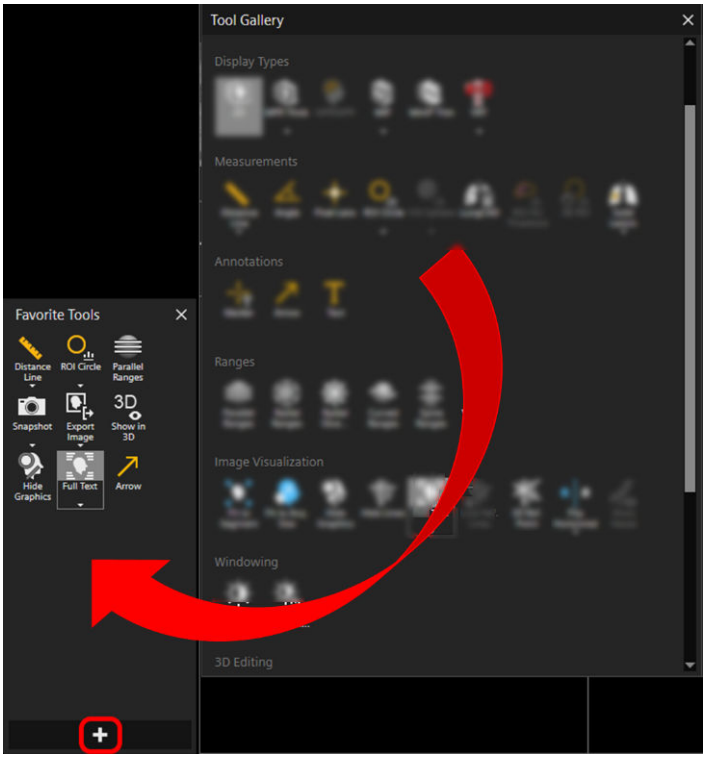
(➔ Page 104 *Configuring your favorite tools*)

(➔ Page 105 *Defining preferred layouts*)

14.2 Configuring your favorite tools

Having a set of preferred tools always available speeds up your daily work. The **Tool Gallery** allows you to add specific tools to your **Favorite Tools** panel.

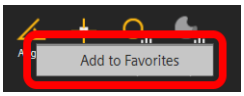
The **Tool Gallery** contains all available tools. Of course, you can also call up each tool directly from there.



1 Click the **More** icon in the **Favorite Tools** panel.

2 From the **Tool Gallery**, drag the tool to the **Favorite Tools** panel.

– or –



Right-click an icon and choose **Add to Favorite Tools** from the context menu.

The selected tool is now displayed in the **Favorite Tools** panel. When you start evaluation, you can call up the necessary tools directly from there.

To remove a tool from the **Favorite Tools** panel, you can right-click the icon and choose **Remove from Favorite Tools** from the context menu.

Some tools in the **Tool Gallery** might be dimmed. This means that the requirements for using this tool are not fulfilled.

For example, the selected image segment does not display the appropriate data.

You can nevertheless add these tools to your **Favorite Tools** panel.

14.3 Defining preferred layouts

You can define and rearrange your preferred layouts to have them always available in the **Viewing** panel.

All available layouts are provided in the **Layout Gallery**.

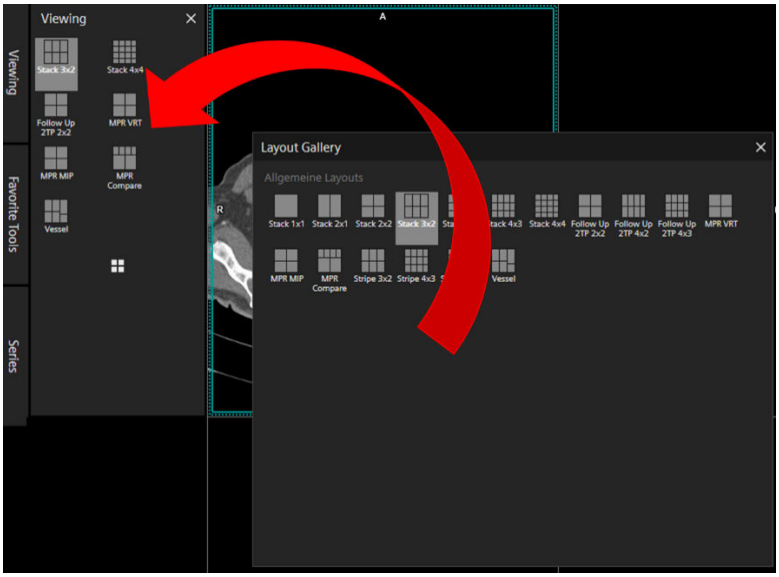
1 To open the **Layout Gallery**, click the **Layout Gallery** icon on the upper right side of the **Viewing** panel.

The layouts are arranged in collections. Depending on your requirements for the current evaluation, you can change the displayed layout by selecting another layout from the collection.

2 To define preferred layouts, drag the required layouts from the **Layout Gallery** to the **Viewing** panel.

– or –

Right-click a layout in the **Layout Gallery** and choose **Add to Favorites** from the context menu.



You can also define a particular layout as the default layout to be displayed whenever you open a study in the Viewer.

Right-click the layout and choose **Set as default** from the context menu.

15 Basic tools for working with the Viewer

The following section introduces some basic tools and features that might be relevant for your daily work with the Viewer.

(➔ Page 107 *Corner menus*)

(➔ Page 108 *Adjusting the context menu in segments*)

(➔ Page 109 *Quick adjustments using the interactive image text*)

(➔ Page 110 *Replacing series in image segments*)

15.1 Corner menus

Corner menus are located in the corners of each image segment. They provide most of the available tools. Each corner menu is indicated by a specific watermark.

The available tools are grouped according to their functionality.

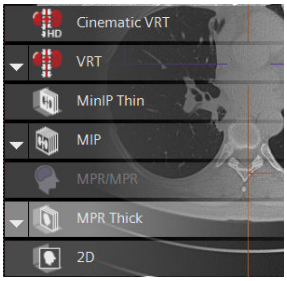
Upper-left corner menu: Image manipulation tools, for example, **Windowing**, **Ranges**, **Region Growing**, and **Anatomy Visualizer**	**Upper-right corner menu:** Measurement and marking tools, for example, **Distance Line**, **Marker**
Lower-left corner menu: Visualization functions and display types, for example, **MIP**, **MPR**, **VRT**	**Lower-right corner menu:** Window settings and modality specific presets, for example, **Color LUT**

1 Select the required segment and point to the watermark in one of the segment corners.

– or –

Click the watermark in the required segment to open the corner menu.

For example, to adjust the display type, point to the water mark in the lower left corner.



2 Choose the required tool from the corner menu to activate it.

The selected display type is applied to the selected segment.

If you have selected an image manipulation or an evaluation tool, the mouse pointer changes its shape accordingly. These tools are available in all segments.

15.2 Adjusting the context menu in segments

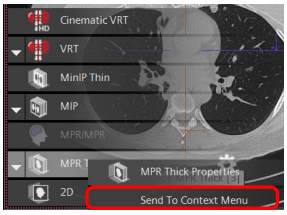
Context menus are available in each image segment and offer functions relevant to your current working situation.

The range of functionality provided in a context menu is configurable. You can customize context menus to have your favorite tools immediately available.

1 To open a context menu, right-click an image segment.

2 To add tools to the context menu, point to a watermark in any corner of a segment.

The corner menu opens.



3 Navigate to the desired tool, right-click and choose **Send to Context Menu**.

After adding tools to the context menu, you can rearrange them.

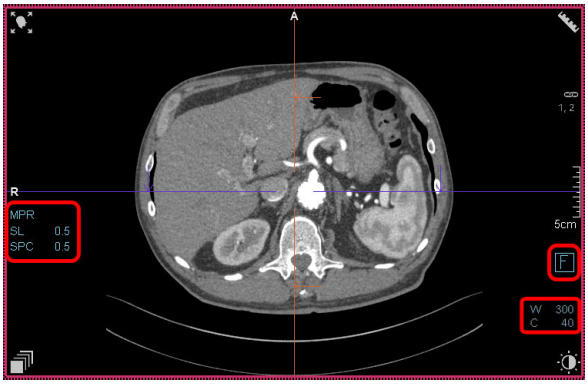
4 Open the context menu and drag the tool to another position.

If a tool is no longer needed, you can remove it from the context menu: simply drag the tool out of the context menu.

15.3 Quick adjustments using the interactive image text

Blue image text (interactive image text) can be changed individually. If the image segments are synchronized, the changes also apply to the synchronized segments.

For example, if the slice thickness of the loaded images is inappropriate, you can quickly change it with the interactive image text.



◆ To adjust the values, point to the blue image text element.

The value is indicated by a blue frame.

You can adjust the following image text interactively:

- **Adjusting the slice thickness or slice spacing**:
  - Drag the mouse up or down to increase or decrease the values in small intervals
  - Drag the mouse left or right to increase or decrease the values in large intervals
- **Changing the image orientation**:
  - Click the orientation cube to toggle through the available orientations
  - Right-click the orientation cube to choose further orientations
  - Double-click the orientation cube to restore the initial image orientation

- **Changing the display type**
  - Click the image text to toggle through the main display types (**2D**, **MPR**, **MIP** and **VRT**)
- **Changing the windowing width (W) and center (C)**
  - Click a value to use the next available windowing preset
  - Double-click a value to manually change the corresponding value
- **Changing the alpha blending ratio of fused MPR/MPR images**
  - Double-click the value to manually change the alpha blending ratio (only available with image text setting **Custom Text**)

15.4 Replacing series in image segments

To replace the currently displayed images or series in the image area, you use the **Series** panel.

The **Series** panel lists all available series of the loaded study. The currently displayed series are marked blue.

The time point is indicated by the study date and a particular color.

For a better overview of the currently loaded study and the series that it contains, you can change the series display settings in the **Series** panel according to your preferences:

- The **Thumbnails** view shows a preview of the images within each series

  Dynamic series are displayed as stacks in the **Thumbnails** view and can be expanded with the triangle icon to show all series in the stack.

- The **List** view shows the available series as a list

  This view displays each series along with its series number. If required, you can hide the series number by right-clicking the column and deselecting the **Series Number** option.

◆ To replace the images displayed in the segments, drag a series from the **Series** panel to the image segments.

– or –

Right-click a series and drag it from the **Series** panel to an image segment and choose one of the options from the context menu, for example, adding the series to the series that are already loaded, or fusing the series with a series that is already displayed.

The **Series** panel also lists the result series that you create during your work in *syngo*.via View&GO, for example, range series or snapshots.

Result series always display the time point at which they were created and can be easily identified in the **Series** panel by a small icon next to the series name.

If required, you can merge result series. Select the corresponding series, right-click and choose **Merge** from the context menu.

16 Tools for preparing the images for reading

The following section introduces tools that you can use to prepare the loaded images for reading.

- (→ Page 112 *Switching the display type*)
- (→ Page 115 *Synchronizing segments*)
- (→ Page 116 *Windowing tools*)
- (→ Page 117 *Image optimization tools*)
- (→ Page 118 *Registration tools (Fusion)*)
- (→ Page 119 *Applying the Punch tool*)
- (→ Page 122 *Hiding and showing image overlays*)

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

16.1 Switching the display type

Depending on the available image data and the requirements for processing the images, you can apply different display types in each of the image segments.

◆ To change the currently selected display type, open the lower-left corner menu and choose the required display type.

The following display types are available:

	Displays 2D images Keyboard shortcut: **1**

2D	
 **MPR**	Displays MPR images Multiplanar Reconstruction (MPR) combines the loaded images in a volume used to calculate cuts in any orientation. Keyboard shortcut: **2**
 **MPR Thick**	Displays MPR Thick images Reconstruction with an individually defined slice thickness (usually thicker than the original image) With **MPR Thick Properties**, the properties for this display type can be adapted. Click the settings icon next to the corner menu entry to open the settings dialog box. Keyboard shortcut: **3**
 **MPR/MPR**	Displays fused MPR/MPR images This display type is used to align two series, typically an anatomy and a physiological series. By changing the ratio between the base image and the overlay image, you can continuously fade in one image and fade out the other (alpha-blending). This display type combines the results of different acquisition techniques or acquisitions that are performed at different time points by overlaying them. With **MPR/MPR Properties**, the properties for this display type can be adapted. Click the settings icon next to the corner menu entry to open the settings dialog box.
 **MIP**	Displays MIP images MIP (Maximum Intensity Projection) creates a maximum intensity projection from the images of a 3D series. Keyboard shortcut: **4**

 **MIP Thin**	Displays MIP Thin images MIP Thin uses only one slab of the volume to calculate the projection. You can define the thickness of the slab. With **MIP Thin Properties**, the properties for this display type can be adapted. Click the settings icon next to the corner menu entry to open the settings dialog box. Keyboard shortcut: **5**
 **MinIP Thin**	Displays MinIP Thin images MinIP Thin creates a minimum intensity projection from the images of a 3D series. MinIP Thin uses only one slab of the volume to calculate the projection. You can define the thickness of the slab. With **MinIP Thin Properties**, the properties for this display type can be adapted. Click the settings icon next to the corner menu entry to open the settings dialog box. Keyboard shortcut: **6**
 **VRT**	Displays VRT images The Volume Rendering Technique function (VRT) renders and displays different tissue types (for example, bone and blood vessels) from CT and MR images in a semi-transparent 3D view. Keyboard shortcut: **7**
 **VRT Thin**	Displays VRT Thin images VRT Thin uses only one slab of the volume to calculate the rendering. You can define the thickness of the slab. With **VRT Thin Properties**, the properties for this display type can be adapted. Click the settings icon next to the corner menu entry to open the settings dialog box. Keyboard shortcut: **8**

 **VRT Gallery**	Opens the **VRT Gallery** dialog box to select and modify VRT presets. Right-click **VRT**/**VRT Thin** and choose **VRT Gallery**.
 **Cinematic VRT**	Displays a fully rendered volume This rendering technique will give you a more realistic impression of the patient's anatomy. In the **VRT Gallery**, VRT presets can be selected and modified. They can be accessed by clicking the settings icon. Keyboard shortcut: **Ctrl** + **7**

16.2 Synchronizing segments

At any time during your work, you can synchronize segments to perform specific actions, for example, scrolling, windowing, or zooming/panning images.

Settings are applied to all synchronized segments.

- Press the **Ctrl** key and select the segments that you want to synchronize.

  All further interactions are applied to the selected segments.

  Synchronization is canceled as soon as you deselect the segments.

  – or –

  In the **Favorite Tools** panel, click the **Synch** icon to activate the synchronization.

  All further interactions are applied to the selected segments.

  With the **Synch Config** icon you can furthermore specify which actions are to be synchronized, for example, zoom/pan or windowing.

16.3 Windowing tools

Windowing often helps you to recognize suspicious anatomical structures in images. You can modify the brightness and contrast of an image.

The easiest way to adjust the windowing value is by using the scroll wheel.

To do that, you press and hold the scroll wheel and drag the mouse up or down.

You can also select **Windowing** from the upper-left corner menu and drag the mouse to adapt the windowing values.

The following windowing tools are provided:

Upper-left corner menu	
 **Windowing**	Changes width and center values In most modalities, the window is defined by width and center. To change the displayed windowing values interactively in the images, double-click it and enter a value. In PET, NM, or SPECT images, the window is defined by the position of the lower and upper window limit (bottom and top). Keyboard shortcut: **W**
Lower-right corner menu	
 **Reset Windowing**	Resets the windowing values (width and center) to the initial values
 **CT Color LUT**	To apply color LUTs (look-up tables) from a list For images from different modalities, corresponding default color LUTs are available.
 **CT presets**	To apply windowing preset values from a list

16.4 Image optimization tools

Several tools help you to optimize the displayed images and to ensure that all details can be recognized during evaluation.

Optimization *Upper-left corner menu*	
 **Rotate**	Rotates a 2D image or a 3D volume The orientation cube on the right side of the image segment indicates the anatomical orientation of the image. You can also rotate images with **Alt** + right mouse button. Keyboard shortcut: **O**
 **Flip Horizontal**	Flips images left or right To reverse the flip, perform the same action a second time.
 **Flip Vertical**	Flips images up or down To reverse the flip, perform the same action a second time.
Zoom/Pan *Upper-left corner menu*	
 **Zoom/Pan**	Zooms and pans continuously with the mouse Whether the image is zoomed or panned depends on the position of the mouse pointer in the image. • To zoom an image, click and drag the mouse pointer in the outer area of the image. • To pan an image, click and drag the mouse pointer in the inner area of the image. **Alt** + left mouse button Keyboard shortcut: **Z**
 **Fit to Segment**	Resizes the images in the segment so that they completely fit the segment

 **Fit to Acquisition Size**	Displays the selected images in their original resolution (acquisition size) In this resolution, all objects drawn on images, such as ROIs and graphic objects, are displayed in an optimal way.
Home Position *Upper-left corner menu*	
 **Home Position**	Resets the following viewing parameters to the values that were initially displayed in the segment: • Orientation • Zoom/pan values • Viewing direction • Alignment in the segment (in-plane rotation) • Image position (for slice and slab images)
Direct manipulation	
drag & drop	Switching / rearranging segments You can arrange available series according to your needs. You can drag a series from the **Series** panel to an empty segment. You can also drag a series to a segment that already contains a series to replace it.
blow up	Expanding / collapsing segments Double-click an image segment to blow it up, and double-click again to reduce the image size again.

16.5 Registration tools (Fusion)

When you apply the **MPR/MPR** display type, the two selected series are fused.

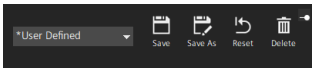
Image fusion might help you to detect specific structures in the anatomy, for example, by fusing PET and CT series.

You start the image registration of the two series by aligning the base series with the overlay series to match them as closely as possible.

- To fuse two series, press the **Ctrl** key, select the required image segments and choose **MPR/MPR** from the lower-left corner menu.

  The images are displayed in fused view.

  The registration mini toolbar is displayed at the bottom of the segment.

  Tools are provided to align fused base series with overlay series to prepare them for further evaluation. The mini toolbar allows you to save these alignment settings.

  The following tools are only available if the display type **MPR/MPR** has been applied.

Upper-left corner menu	
 **Visual alignment**	Allows you to manually align fused base series and overlay series to match them as closely as possible. Additional functions are displayed in the image segment that help you to align both series.
 **Automatic Registration**	Fused base series and overlay series are aligned automatically.

The geometric registration option automatically aligns the volume center of two selected series.

In such cases, a manual alignment is not necessary.

16.6 Applying the Punch tool

You can restrict the reconstructed volume of 3D images to reduce rendering time and to cut off high-density structures that may be covering important structures.

For that, you can use tools to remove structures or parts of the volume so that only the relevant structures are displayed. These tools can only be used in VRT or MIP images.

With the **Punch** tool, you can remove the structures outside or inside a marked area.

You can use the **Punch** tool even if the volume is restricted by planes.

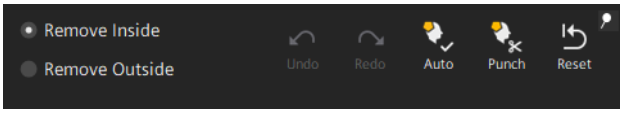
When **Clip Plane**, **Clip Plane Slab**, or **Clip Box** is activated, you can only perform a punch within the displayed volume. Hidden parts are not removed.

---

1 In a VRT or MIP image, rotate and position the image plane as desired.

2 Choose **Punch** from the upper-left corner menu.

The punch mini toolbar is displayed.



3 On the punch mini toolbar, select the region to be removed: inside or outside the punch contour.

4 To draw a freehand punch contour, click and drag the mouse.

– or –

To draw a polygonal punch contour, click the desired vertices. Double-click to complete the contour.

If **Auto** is activated on the mini toolbar, the punch is automatically performed as soon as you complete the contour.

If **Auto** is deactivated, click **Punch** on the mini toolbar.

Quick punch mode:

To quickly punch out contours, press the **P** key and draw a contour. The contour is punched out as soon as you finish drawing the contour.

The settings for punching inside or outside the contour are taken from the settings in the punch mini toolbar.

Further tools provided for restricting a volume are listed in the table below:

Upper-left corner menu	
 **Clip Plane**	Displays the volume behind a cutting plane Right-click in the inner area of the clip plane and drag it through the volume to the desired position. Click the settings icon to access the following options: • **Show Clip Plane Graphics** to turn the clip plane graphics on or off • **Change Orientation** to change the clip plane orientation
 **Clip Plane Slab**	Only shows the volume inside a slab Right-click in the inner area of the slab and drag it through the volume to the desired position. Click the settings icon to access the following options: • **Slab Thickness** to change the initial slab thickness • **Change Orientation** to change the clip plane orientation
 **Clip Box**	Restricts the volume to a cuboid Click the settings icon to access the **Clip Box Graphics**, which turns the clip box graphics on or off.

16.7 Hiding and showing image overlays

Image overlays, for example, graphical objects, annotations, or image text help you to process the images for evaluation. If necessary, you can show or hide the image overlays.

- To hide image overlays, open the **Tool Gallery** and select one of the following tools in the **Image Visualization** section.

 **Full Text**	Toggles between full or customized image text or hides the image text Keyboard shortcut: **T** You can configure **Custom Text** in the **Configuration Panel**. (➔ Page 80 *Adapting the display and behavior*)
 **Custom Text**	
 **Hide Graphics**	Shows or hides graphical objects Keyboard shortcut: **G**
 **Hide Lines**	Shows or hides reference lines. Keyboard shortcut: **H**
 **Shutters On/Off**	Shows or hides existing shutters Shutters are used to cover unimportant image areas. You can only display and hide shutters that are already stored in the DICOM image header of an image. You cannot create new shutters.

17 Common tools for viewing images

Once you have prepared the images, you can start reading using the provided tools:

- To obtain an overview of the loaded images, you start to scroll through the images. (➔ Page 124 *Scrolling through the images*)
- To take a closer look at specific parts in the displayed images, you can use the magnifying glass. (➔ Page 126 *Viewing images with the magnifying glass*)
- To evaluate a specific region of interest, you can continue with creating range series for further evaluation. (➔ Page 127 *Creating ranges*)
- To evaluate the spine or the ribs you can use the **Spine/Rib Label** tool.

  (➔ Page 130 *Evaluating the spine and ribs*)
- Use the measurement and annotation tools provided to mark and measure potential lesions.

  (➔ Page 132 *Marking and measuring lesions*)

  (➔ Page 136 *Annotating measurements*)
- Use the subtraction or the ADC & b-value tool to evaluate dynamic processes and images.

  (➔ Page 137 *Performing subtraction*)

  (➔ Page 142 *Calculating ADC & b-value*)
- To evaluate dynamic image, you can use the Time Curve tool.

  (➔ Page 154 *Performing dynamic evaluations*)
- Save your evaluation results by creating snapshots. (➔ Page 145 *Saving measurement results*)

Besides the common reading tools, *syngo*.via View&GO also provides advanced visualization tools for evaluating specific clinical cases:

- (➔ Page 146 *Tissue segmentation with Region Growing*)

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

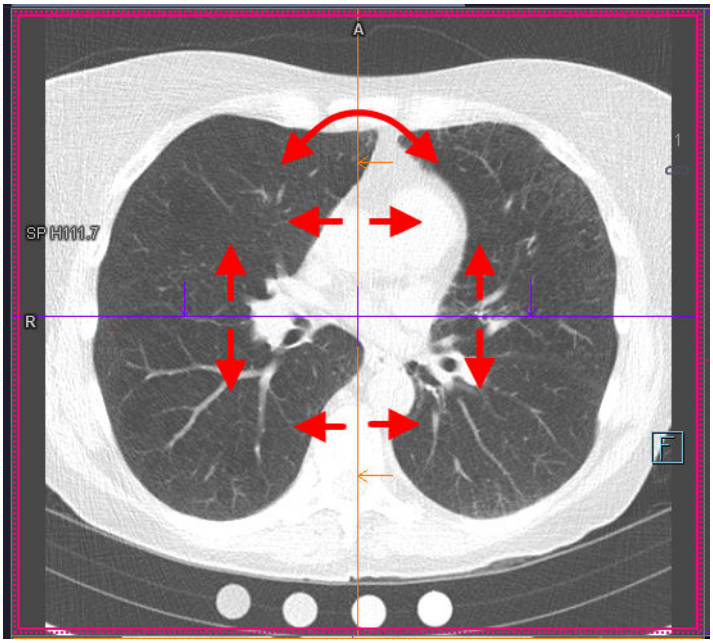
17.1 Scrolling through the images

You can scroll with the right mouse button, the mouse wheel, or with the keyboard, or using the reference lines.

- Press and hold the right mouse button to scroll through the images in **fast scrolling mode**. When this mode is activated, the string "Skip" is displayed in the segment, which means that not every single slice is displayed. You can enable or disable fast scrolling mode by pressing the **U** key.
- Use the scroll wheel or arrow keys to scroll through the images in **slice scrolling mode** which means image by image.
- Use the left/right arrow keys to scroll through multiphase data sets

17.1.1 Scrolling through the images with reference lines

The reference lines in a segment represent the orientation of the images that are currently shown in the other segments. Reference lines and related segments are displayed in the same color.



1 To switch to a layout with 3D reference lines, click the **Show in 3D** icon.

– or –

First, open the **Layout Gallery** and choose a 3D layout, for example, **MPR_VRT**.

Afterward, open the **Series** panel and drag the required series into the layout.

2 To move a reference line, click the line between the arrows and drag it to the required position.

The image in the related segment is updated accordingly.

3 To rotate a reference line, click the line outside the arrows and drag it to the required orientation.

The images in the other segments are updated according to the new position of the reference lines.

By default, the reference lines are locked and are perpendicular to each other, even if you rotate one line.

4 If required, unlock the reference lines and change the orientation or position of each reference line individually:

Choose **Lock Reference Lines** from the upper-left corner menu and move or rotate each reference line to the required position.

Further scrolling tools are provided in the *upper-left corner menu*:

 **Scroll**	Activates the left mouse button for scrolling When active, the mouse pointer changes shape. Keyboard shortcut: **I**
 **Movie**	Scrolls automatically through series, 3D volumes, or dynamic series (4D data sets). The images are shown one after another, like in a flipbook. The layout of the movie panel differs depending on whether you start the movie mode in a segment showing dynamic series (4D data sets) or in a segment with 2D or 3D images. Keyboard shortcut: **Spacebar**

17.2 Viewing images with the magnifying glass

If you want to take a closer look at a specific area of the image, you can use the magnifying glass.

The portion of the image selected with the magnifying glass will be temporarily magnified.

1 Click the **Magnifying Glass** icon in the **Tool Gallery**.

2 Click into the image and drag the mouse over the image while keeping the mouse button pressed.

The section of the image over which you drag the mouse is displayed in a separate in-segment window.

The magnifying glass enlarges the image by a factor of 2.

17.3 Creating ranges

The **Ranges** tools allow you to create new ranges through a specific region of interest for further evaluation and archiving. The tools are available in the upper-left corner menu and in the **Tool Gallery**.

The following range types are available:

- **Parallel Ranges**: define parallel slices of a volume for reconstruction.
- **Radial Ranges**: define radial views of a volume (anatomy) for reconstruction
- **Radial Sliced Ranges**: define slices of a volume for reconstruction that are arranged around a pivot
- **Curved Ranges**: define curved slices of a volume for reconstruction
- **Spine Ranges** (optional): define slices perpendicular to the spinal cord
- **Vascular Ranges** (only available with the CT Vessel extension): create series of images around or along the CPR

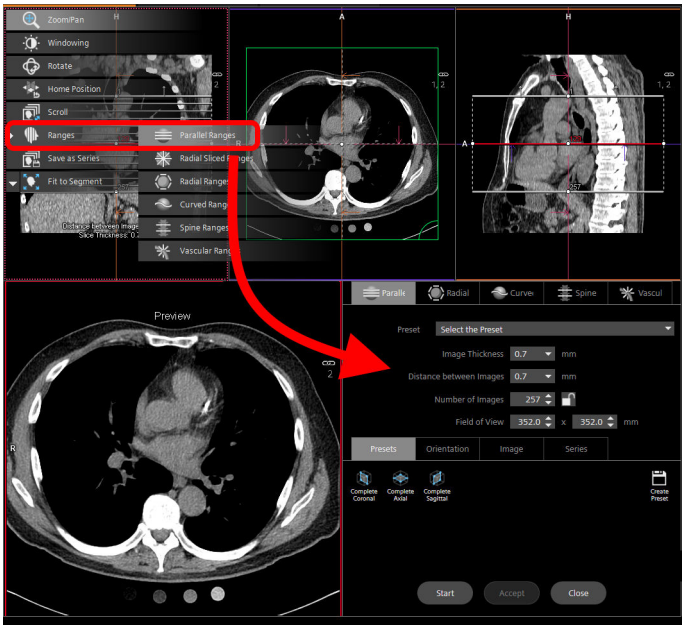
In the following, the parallel ranges tool is taken as an example to show you how to create ranges through a selected region of interest.

1 From the upper-left corner menu, choose **Ranges > Parallel Ranges**.

– or –

Click the **Parallel Ranges** icon in the **Tool Gallery**.

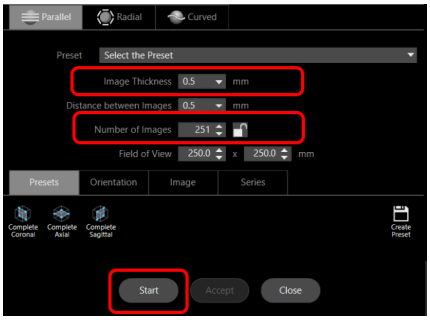
The ranges-specific layout is displayed.



When you call up ranges, the previously selected display type, windowing settings, and the current slice position are retained in the ranges-specific layout.

2 To change the proposed range coverage, drag the range handles in the reference segment and the lateral view segment.

In the lower left **Preview** segment, you can check your adjustments.



3 To quickly create a range of certain body parts or organs, you can select predefined anatomical range presets from the **Preset** list.

These presets are grouped according to the examined body region and contain predefined values that automatically position the ranges with respect to the underlying anatomy of the examined body region.

If required, you can adjust the predefined values.

4 To define **Image Thickness**, **Distance between Images**, and **Number of Images**, select the values offered or enter specific values in the ranges control segment.

5 To adjust the FOV, drag the green frame in the FOV segment.

6 Click the **Start** button to start range reconstruction.

7 If necessary, enter a **Range Series Name** and an **Image Comment**.

8 Click the **Accept** button to save the range output.

The range series is saved as a result series, which is indicated by an icon next to the series name.

If required, you can save the current settings as a preset.

Some additional tips on presets and orientation:

- The **Whole Body** presets group contains **General Alignment** presets which automatically remove table and air in the images and help you to realign the body part according to the selected presets option (**ParaSag**, **ParaCor**, **ParaTra**).
- You can add frequently used presets to a list of favorites. Just right-click the preset and choose **Add to Favorites** from the context menu.
- Predefined range presets are available in the **Presets** tab of the ranges control segment, for example, **Complete Coronal**, **Complete Axial**, **Complete Sagittal** for **Parallel Ranges**, or **Long Axis**, **Short Axis**, **Frontal Axis** for **Radial Ranges**.
- To create your own preset, save the current setting. These settings are user-specific and cannot be seen by other users.
- To reposition a range, select **Ranges > Set to Reference Segment** or **Ranges > Set to FoV Segment** from the upper-left corner menu.
- To toggle between the orthogonal views of ranges, click the **Ortho Ranges** icon on the **Orientation** tab.

17.4 Evaluating the spine and ribs

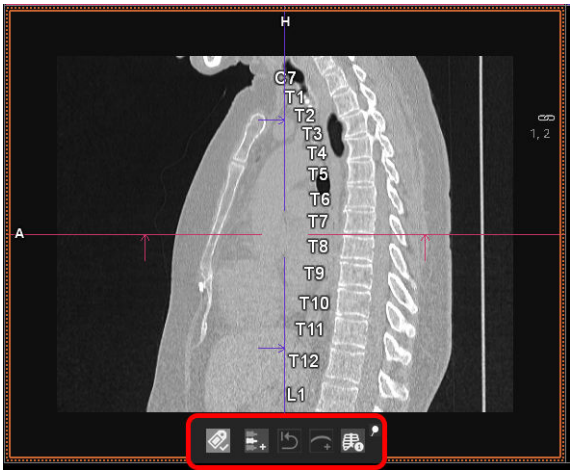
For trauma or oncology cases, you will need to evaluate the spine or the ribs using the **Spine/Rib Label** tool.

As soon as you start the **Spine/Rib Label** tool from the upper-right corner menu, a centerline is displayed along the spinal cord and vertebra labels are automatically added.

The **Spine Labeling** mini toolbar is displayed.

Consider that the option for automatic Spine/Rib labeling is license-protected.

But you still have the option to label the spine/ribs manually by using the respective tools given in the **Spine Labeling** mini toolbar.



1 If required, you can manually add further labels.

Depending on the selected data set, spine and rib labeling, or only spine labeling is available.

---

syngo.via View&GO supports automatic spine labels only for images with specific criteria.

---

2 To add rib labels, click the **Start Rib Algorithm** icon in the mini toolbar to start the rib labeling algorithm.

If the algorithm did not label all ribs, you can manually add further rib labels by clicking the **Add Rib Label** icon until you have labeled all necessary ribs.

3 If the proposed labels fit, complete the spine or rib labeling and click the **Confirm spine label** icon in the mini toolbar.

The message **Caution: Automatic anatomy labels not confirmed** disappears.

If the proposed labels do not fit, for example, in case of severe osteoporosis or scoliosis, you can manually add further labels or edit the existing labels.

To edit a label, right-click the label and choose the required option from the context menu:

4 Change the label of a specific vertebra or rib and propagate the labeling to the adjacent vertebrae.

– or –

Change the label only for the selected vertebra or rib.

5 Delete one label and all succeeding labels.

– or –

Delete only one label.

17.5 Marking and measuring lesions

Various tools for evaluating images are available in the upper-right corner menu or in the **Tool Gallery**.

These tools enable you to measure distances, angles, and grayscale levels, or to calculate the size and other statistical values of ROIs or VOIs.

The following describes drawing circular or elliptical ROIs as an example.

You use **ROI Circle**, for example, to measure the diameter of a vessel.

1 Choose **ROI Circle** from the upper-right corner menu.

The mouse pointer changes its shape.

2 To draw a circle, click and drag the mouse until the circle has the desired size.

– or –

To draw an ellipse, press the **Shift** key while drawing.

To change the size of an ellipse or circle, select it and move the handles to resize the graphic.

When you select the resize handle of a circular ROI and hold the **Alt** key or the **Shift** key down, the shape switches to an ellipse. When you release the **Alt**/**Shift** key, the shape switches back to a circle again.

You can also contour structures semiautomatically with the **ROI Auto Contour** tool.

In this case, you press and move the mouse pointer over the required structure. Based on your mouse movements and based on voxels with a similar HU value, the system suggests contours indicated by a dotted line.

If the suggested structure is satisfactory, you can double-click the dotted line, which will then turn into a solid line.

To deactivate measurement tools, press the **ESC** key.

To deactivate a measurement tool only temporarily, press and hold the **Alt** key.

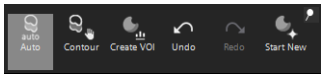
You can copy measurement text and values to clipboard, for example, to copy text to external tools like MS Word: Right-click a measurement and choose **Copy Measurement**.

The following table lists further tools for marking and measuring.

Upper-right corner menu	
Measuring distances	
 **Distance Line**	Measures the length of a line

 **Distance Polyline**	Measures the lengths of connected lines You can also draw distance lines through slices, for example, to follow a vessel: click the start point, keep the mouse pressed and use the arrow keys to scroll to another slice and set the end point. With **Distance Polyline**, double-click to finish drawing. The function is also available in volumetric images (VRT, MIP). Such distance lines are marked with the extension "o.p." (on projection), which means that the measured distance is correct but that the precise depth within the volume cannot be determined. Keyboard shortcut: **D**
Measuring angles	
 **Angle**	Measures an angle between two lines The angle is measured between the first line and the second line, based on the drawing direction. A maximum angle of 180° can be measured. The two lines must not intersect. Available for 2D, MPR, MPR Thick, MIP Thin, MinIP Thin, and MPR/MPR images
 **Angle on Stack**	The tool supports you in performing orthopedic measurements Measures an angle between two lines across parallel image planes This means you can draw the angle legs on different anatomy, which allows you to identify, for example, dislocations of fractures or the rotational dislocations between different body parts (tibial torsion, femural torsion). Available for 2D, MPR, MPR Thick, MIP Thin, MinIP Thin, and MPR/MPR images

Measuring grayscales	
 **Pixel Lens**	Determines the pixel value at the current position of a pixel or a voxel Available for 2D, MPR, MPR Thick, MIP, MIP Thin, MinIP Thin, and MPR/MPR images Keyboard shortcut: **L**
Measuring planes	
 **ROI Circle**	Evaluates statistical values for a circular or elliptical region Available for 2D, MPR, MPR Thick, MIP Thin, MinIP Thin, and MPR/MPR images
 **ROI Freehand**	Evaluates statistical values for a freely drawn region Available for 2D, MPR, MPR Thick, MIP Thin, MinIP Thin, and MPR/MPR images (Fusion)
 **ROI Auto Contour**	Evaluates statistical values for an automatically suggested region or for a polygonal region Available for 2D, MPR, MPR Thick, MIP Thin, MinIP Thin, and MPR/MPR images Automatic contour suggestion can be enabled in the **ROI Properties** window, which can be accessed by clicking the settings icon. If automatic contour suggestion is not enabled, polygonal ROI drawing is enabled instead when you select the **ROI Auto Contour** icon.

Measuring volumes	
 **VOI Sphere**	Evaluates statistical values for a spherical or an ellipsoidal volume Available for MPR, MPR Thick, MIP Thin, MinIP Thin, and MPR/MPR images (fusion)
 **VOI Freehand**	Evaluates statistical values for a volume of free-hand drawings Available for MPR, MPR thick, MIP Thin, or MinIP Thin images When you create a freehand VOI, the VOI mini toolbar with several options opens.  **Automatic Interpolation**: performs the interpolation automatically when you create the 3D object **Contour Interpolation**: includes the volume between the contours before you create the 3D object **Create VOI**: calculates the volume based on the drawn 2D contours. **Start New**: creates another VOI.

17.6 Annotating measurements

Some additional tools are available to annotate your measurements or further conspicuous areas in the image.

For example, you can add a standalone image text to label specific areas in an image.

1 In a segment, choose **Text** from the upper-right corner menu.

The mouse pointer changes its shape.

2 Click the desired position and enter the annotation text.

To enter a line break, press the **Ctrl** + **Return** keys. You can only enter standard characters.

3 To finish the annotation, press the **Return** key.

To change an annotation text, choose **Edit Annotation Text** from the context menu of the text field.

You can drag the border of the text field to increase or decrease the size of the annotation text.

You can also drag the annotation text to a new position.

The following tools for annotations are available:

 **Arrow**	Draws arrows on an image and allows text annotations
 **Marker**	Marks a position on an image and allows text annotations Keyboard shortcut: **M**

17.7 Performing subtraction

Subtraction is performed on images, series, or 4D data sets to subtract different time phases.

For example, you can use subtraction to visualize changes in the image after administering contrast agent. For this purpose, you subtract the grayscale values of precontrast images from postcontrast images. The result images only show the changes caused by the contrast agent.

You can use this tool on MR images only.

17.7.1 Starting subtraction

✓ Images are loaded.

1 Select the segments to be included in subtraction by keeping the **Ctrl** key pressed.

– or –

Select the segment that contains the 4D data set.

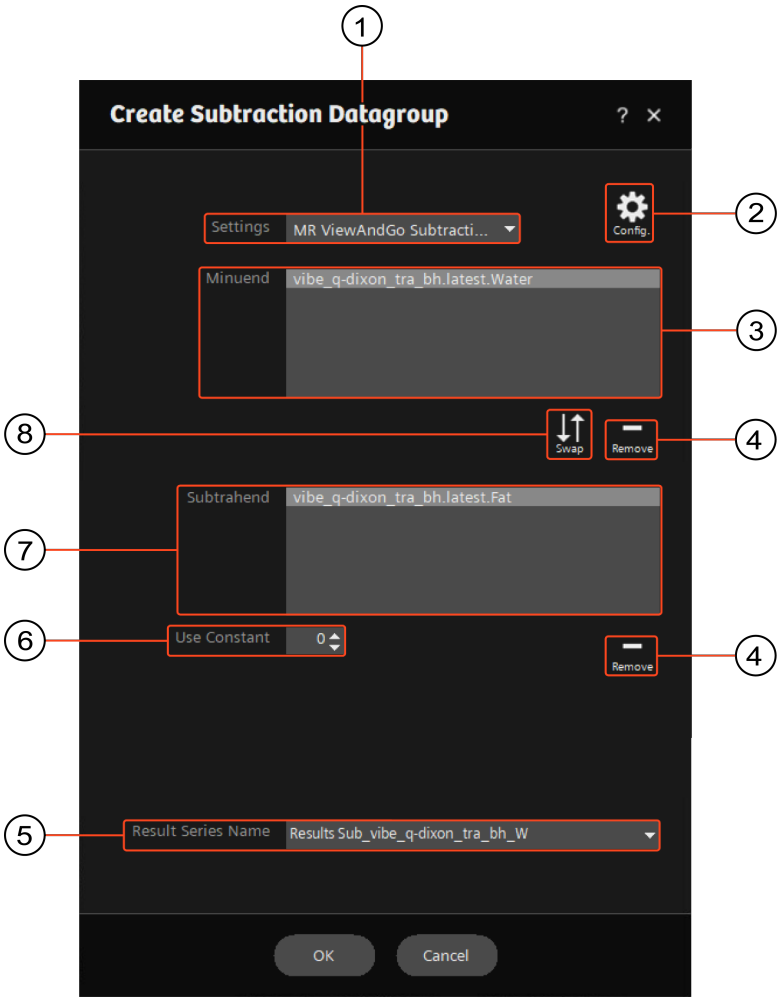
2 In the **Favorite Tools** panel, click the **Subtraction** icon.

– or –

From the lower-right corner menu, choose **Analysis Tools > Subtraction**.

The **Create Subtraction Datagroup** dialog box opens.

By default, the oldest series is displayed as the **Subtrahend** and the newer series are displayed as the **Minuend**.



(1) Name of the currently active **Setting**
(2) **Config.** icon for opening the **Subtraction Settings** dialog box
(3) **Minuend** phases or series
(4) **Remove** button for deleting selected minuends or subtrahends
(5) **Result Series Name**, the default name is freely editable
(6) **Use Constant** value
(7) **Subtrahend** phase or series
(8) **Swap** icon for exchanging minuend and subtrahend

17.7.2 Defining subtraction settings

✓ **Create Subtraction Datagroup** dialog box is open.

1 From the **Settings** list, select a setting.

2 Drag the **Subtrahend** to the **Minuend** area or vice versa to adapt the **Minuend**/**Subtrahend**.

3 Enter the constant value.

The constant value is helpful, for example, if the subtraction result displays a very bright image. In this case, you can enter a constant value that is additionally subtracted to get a result image that is less bright.

4 Enter the name of the result series.

5 Click **OK** to start subtraction.

The subtraction series is displayed in the **Series** panel and in the results segments of the layout.

If the images selected are not suitable for subtraction, an error message is displayed in the upper area of the dialog box.

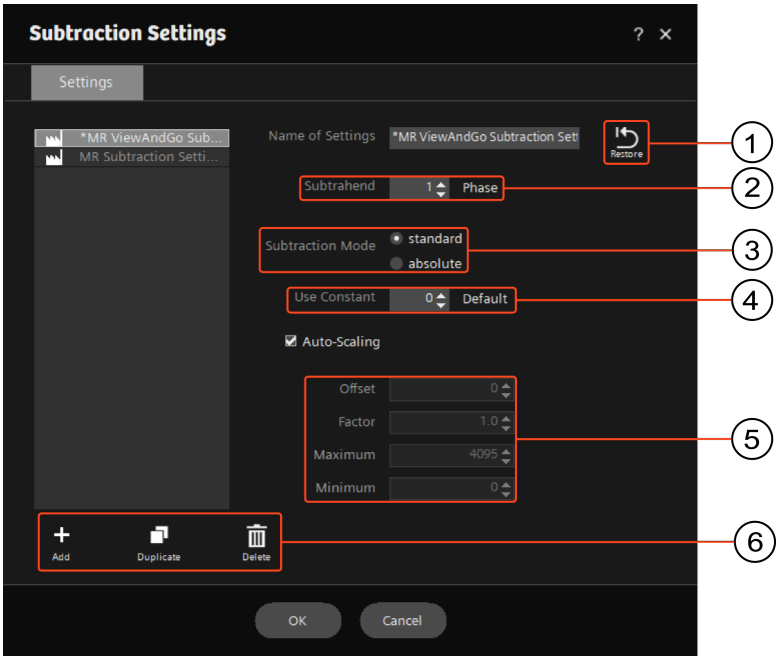
You can change the scaling factors for subtraction.

17.7.3 Defining subtraction result settings

In the **Subtraction Settings** dialog box, you can determine, for example, the scaling factor for subtraction, the default phase to be used as the subtrahend for each subtraction, and the subtraction mode. Furthermore, you can save these settings as a default setting for the current evaluation or generally for all evaluations.

✓ **Create Subtraction Datagroup** dialog box is open.

1 In the **Create Subtraction Datagroup** dialog box, click **Config.** to open the **Subtraction Settings** dialog box.



(1) **Restore** icon for resetting settings
(2) **Subtrahend** (phase number)
(3) **Subtraction Mode**
(4) **Use Constant** value
(5) Scaling factors
(6) Icons for adding, deleting, or duplicating settings

2 Add, duplicate, or delete a setting.

3 From the list of settings, select the setting that you want to modify.

4 Select the subtrahend series or phase.

5 Select the subtraction mode **absolute** or **standard**.

6 To enter the scaling factors manually, clear the **Auto-Scaling** check box.

The scaling factors **Factor** and **Offset** can be used instead of **Minimum** and **Maximum**. When you enter values for **Factor** and **Offset**, the values for **Minimum** or **Maximum** are updated accordingly and vice versa.

You can enter an **Offset** value to adjust the display of subtraction results. For example, if the subtraction results contain negative values, you can enter a corresponding **Offset** value to extend the range of the displayed subtraction results.

7 Select the constant to be used as the default.

8 Click the **Restore** icon to restore all factory settings.

The settings are restored on the **Settings** tab.

9 Click the **OK** button to apply the changes.

17.8 Calculating ADC & b-value

Diffusion-weighted imaging is used to evaluate body lesions by displaying the motion of molecules. The apparent diffusion coefficient (ADC) is used to determine the mobility of the molecules in certain tissue types. While normal tissue shows high signal loss, areas with restricted molecular motion show less signal loss and result in bright areas in the diffusion-weighted images.

ADC maps are calculated from diffusion-weighted images and require measurements with various diffusion weightings (b-values). The higher the b-value, the stronger the diffusion weighting.

You can use this tool on MR images only.

17.8.1 Starting calculation of ADC maps and b-value images

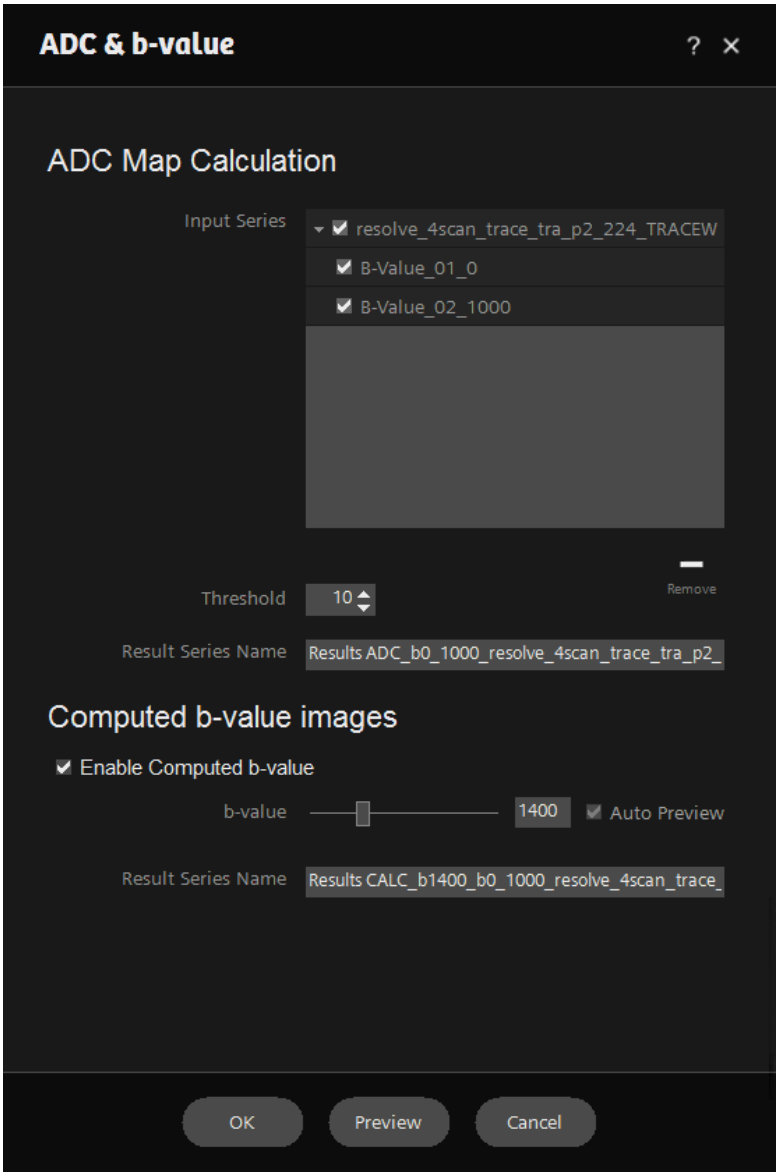
✓ Images are loaded.

◆ In the **Favorite Tools** panel, click the **ADC & b-value** icon.

– or –

From the lower-right corner menu, choose **Analysis Tools > ADC & b-value**.

The **ADC & b-value** dialog box opens.



In the **ADC Map Calculation** area, the **Input Series** of the currently selected segment is displayed. The input series must contain at least two b-values.

The image quality of computed b-value images and ADC maps improves if more than two input series are available.

The quality of the computed b-value images also depends on the quality and the b-values of the b-value images actually measured on which the calculation is based.

If the series of the currently selected segment is not adequate for ADC map calculation, you can drag another series from the **Series** panel directly into the **Input Series** area of the **ADC & b-value** dialog box.

17.8.2 Starting calculation of ADC maps and b-value images

✓ **ADC & b-value** dialog box is open.

Defining the settings for ADC maps

You define the settings for the ADC maps in the **ADC Map Calculation** area.

1 Clear the check boxes of the b-values that are not required for the calculation.

2 If required, select a **Threshold** to optimize the results of the ADC map and the b-value.

3 Enter the name of the result series.

By default, the result series is given the prefix **ADC** together with the b-value that was used for the calculation.

Defining the settings for b-value images

You define the settings for the b-value images in the **Computed b-value images** area.

1 Select the **Enable Computed b-value** check box.

2 Move the **b-value** slider or enter the **b-value** in the text field.

3 Enter the name of the result series.

The name of the result series also contains the new b-value.

Calculating ADC maps and b-value images

- To assess the quality and the number of result images, click the **Preview** button.

  – or –

  Click **OK** to start the calculation and to save the results.

  The new series are displayed in the **Series** panel and in the results segments of the layout.

You can start calculation of ADC maps and b-value images separately or simultaneously.

In addition to the **Preview** functionality, you can use the **Auto Preview** check box. If a preview is already available and you select **Auto Preview**, the display in the result segment of the layout is updated interactively, for example, when you move the **b-value** slider.

17.9 Saving measurement results

Whenever you create a measurement object with the tools described here, you can create a snapshot of the segment or the complete layout to save your results or you can save the series as new result series.

1 Select one or more segments.

2 In the **Favorite Tools** panel, click the **Snapshot** icon to create a snapshot of a segment.

– or –

In the **Favorite Tools** panel, click the **Layout Snapshot** icon to create a snapshot of all segments.

The snapshot (in the resolution of the displayed segment) is displayed in the **Series** panel. To open snapshots, you can double-click the corresponding result.

– or –

From the upper-left corner menu, choose **Save as Series**.

The **Save as Series** dialog box opens in which you can enter the name of the new series and an image comment, if required.

The new series is displayed in the **Series** panel and is indicated by an icon next to the series name.

17.10 Tissue segmentation with Region Growing

You can perform tissue segmentation to isolate and highlight specific anatomical structures of a volume, for example, bones, vessels, or specific organs.

Tissue segmentation uses an algorithm that detects anatomical structures of nearly the same HU values and creates a separate segmentation object from these structures.

The result is a segmentation object, which is used to show or hide the isolated structure. Tissue segmentation can only be performed in 3D images, such as VRT, MPR, and MPR Thick images.

You can also refine the resulting segmentation object.

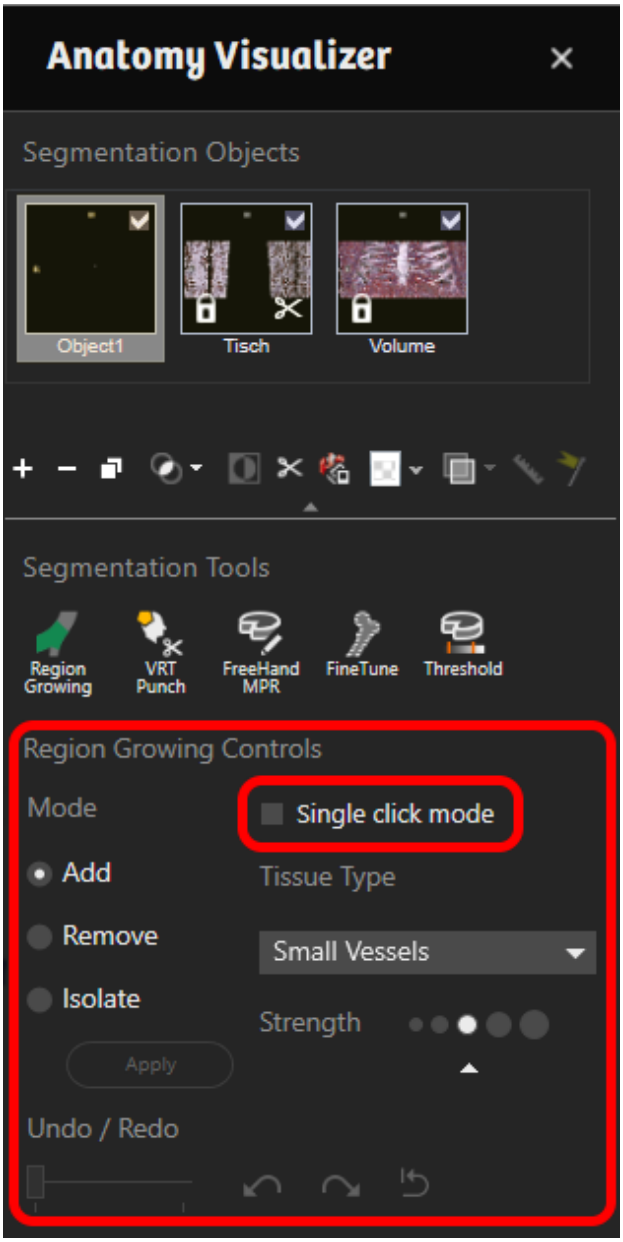
The following describes the segmentation of bones as an example to show you how you use the **Anatomy Visualizer**.

✓ 3D image segment (such as VRT or MIP, MPR) is selected.

1 From the upper-left corner menu, choose **Region Growing**.

The **Anatomy Visualizer** dialog box opens.

The lower area of the dialog box displays the **Region Growing Controls**.



2 For bone segmentation, select **Bone** from the **Tissue Type** list.

3 If not already selected, select **Add** as the segmentation **Mode**.

4 Point to the required structure, press and hold the left mouse button.

The region grows until you release the mouse button. As a result, all bones are marked to be segmented.

If you select **Single click mode**, the required structure is segmented with just one single click.

You can switch between the image segments and continue the segmentation of structures.

For example, you can start the segmentation in a VRT segment and continue the segmentation in an MPR segment.

You can scroll through the image stack of MPR or MPR Thick images with the scroll wheel or the right mouse button. You can zoom and pan with the left mouse button while keeping the **Alt** key pressed and continue the segmentation of structures.

---

5 If necessary, you can undo the region growing action with the **Undo/ Redo** slider.

– or –

Click the **Undo** or **Redo** icons to restore or redo your last actions step by step.

The image segments are updated simultaneously.

To restore the initial state, click the **Undo All** icon.

If required, you can proceed with refining the segmentation object.

17.10.1 Punching contours to correct segmentation objects

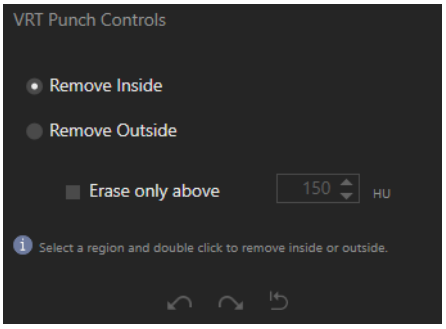
To refine segmentation objects in VRT segments, you can remove structures inside or outside a contour that you draw in the VRT segment.

To make VRT punching more precise, you can specify an HU value. Structures with higher HU values than specified will be removed from the segmentation object.

1 In the **Anatomy Visualizer**, select a segmentation object.

2 In the **Segmentation Tools** area, click the **VRT Punch** icon.

The punch mode is activated and the **VRT Punch Controls** are displayed:



3 Select **Remove Inside** to remove unnecessary structures inside the drawn contour.

– or –

Select **Remove Outside** to remove unnecessary structures outside the drawn contour.

4 Select the check box **Erase only above** and enter an HU value for the tissue type that you want to remove.

For example, the default HU value is 150 and corresponds to bone structures. To remove bone structures from the segmentation object, you can apply this default value. Tissue with higher HU values will be removed from the segmentation object.

5 In a VRT segment, draw the punch contours around the structure.

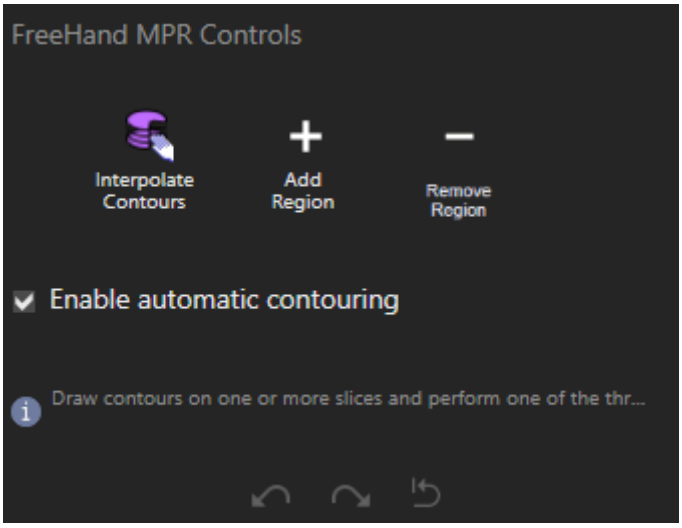
The selected structure will be removed.

If the results are not satisfactory, click the **Undo last** or **Redo last** icons to restore the previous settings step by step. These icons are dimmed if you have selected the **Erase only above** option.

To restore the initial state, click the **Reset all** icon.

17.10.2 Correcting segmentation objects in MPR segments with freehand contours

Another way of refining your segmentation objects is to mark specific structures in the MPR segment, and thus, to add or remove them from the segmentation object.



1 Select the **Enable automatic contouring** option in the **FreeHand MPR Controls** area.

2 Press and move the mouse pointer over the required structure.

The software suggests specific structures according to your mouse movements. If the suggested structure is satisfactory, double-click to apply the selection.

3 If the suggested structure is not satisfactory, drag the mouse around the required structure.

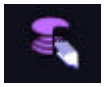
The selected contour is then indicated by a solid yellow line. When you release the mouse button, the yellow line turns into a solid cyan line.

– or –

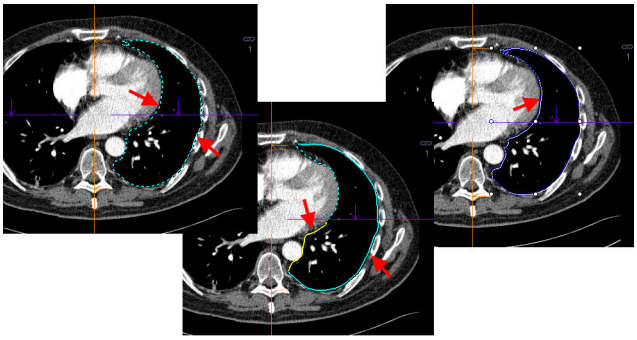
To mark a specific structure step by step, repeatedly drag and click the mouse pointer until the entire structure is marked.

The selected contour is indicated by a dotted cyan line. When you click to confirm your selection, the dotted line turns into a solid cyan line.

4 Double-click to finish contour drawing.



5 Scroll through the slices to draw further contours and click the **Interpolate Contours** icon to include the volume between the contours.



6 Click **Add Region** to add the marked volume.

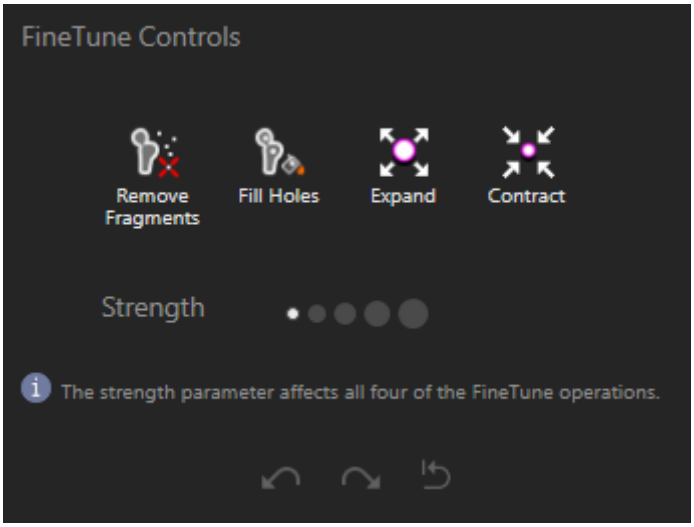
17.10.3 Fine tuning your segmentation object

After creating a segmentation object, you can refine the resulting segmentation object, for example, if you want to remove small structures or particles from the segmentation object.

In such a case, you can use, for example, the **FineTune Controls**, which are also available in the **Anatomy Visualizer**.

1 In the **Segmentation Tools** area, click the **FineTune** icon.

The **FineTune Controls** are displayed:



2 Select a strength to define the detail size.

3 To remove small particles from the segmentation object, click the **Remove Fragments** icon.

If some small areas have been missed out by the segmentation algorithm, you can fill these areas.

4 To add small areas that have been ignored by the segmentation, click the **Fill Holes** icon.

Dilate or erode your segmentation object:

5 To enlarge the segmentation object, click the **Expand** icon.

– or –

Click the **Contract** icon to shrink the segmentation object.

17.10.4 Refining segmentation objects by adjusting thresholds

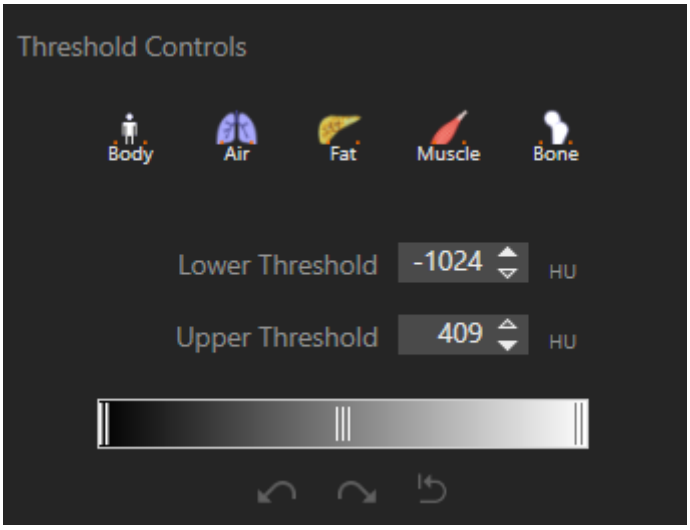
One way of refining your segmentation object is to use the threshold tool in the **Anatomy Visualizer**, for example, when you segment bone structures or specific organ tissue, such as the liver.

You can define an upper and lower threshold. Tissue that is already part of the segmentation object but falls outside this given range is removed from the segmentation object.

1 In the **Anatomy Visualizer**, select a segmentation object.

2 In the **Segmentation Tools** area, click the **Threshold** icon.

The **Threshold Controls** are displayed.



3 Click the tissue icons (for example, **Air** or **Muscle**) to obtain the standard threshold values for each tissue type.

– or –

If one of the given presets is not appropriate, enter a threshold value in the **Lower Threshold** and in the **Upper Threshold** fields.

– or –

Use the double-sided slider to define the lower and the upper threshold value.

The values for lower and upper threshold are automatically adapted.

If the results are not satisfactory, click the **Undo last** or **Redo last** icons to restore the previous settings step by step.

To restore the initial state, click the **Reset all** icon.

17.11 Performing dynamic evaluations

Dynamic evaluations are performed, for example, to measure signal intensity changes over time in postcontrast dynamic images.

TimeCurve allows you to perform such evaluations in CT, MR and PET images.

You start by using the default **TimeCurve** measurement tools, for example, **TC-Circle**. The area within the drawn ROI is considered for **TimeCurve** evaluation.

The **TimeCurve** tools are only available when you load dynamic series into segments with display type **2D**.

If the displayed images contain motion artifacts, the **TimeCurve** / **TC-Circle** functionality will not work properly and the results will not be reliable.

Therefore, check the images for motion artifacts before you start an evaluation with **TimeCurve** / **TC-Circle**.

1 After you have loaded a dynamic CT data set into the image area, you select the segment containing the data that you want to evaluate.

2 In the **Tool Gallery**, click the **TC-Circle** icon and draw a time ROI in the image you selected.

The layout switches to the time curve layout.

The drawn ROI is automatically propagated to the corresponding images of the other phases. The result curve is displayed in the result segment.

– or –

In the **Tool Gallery**, click the **TimeCurve** icon.

The layout switches to time curve layout and **TC-Circle** is automatically activated and ready to be used.

The drawn ROI is automatically propagated to the corresponding images of the other phases. The result curve is displayed in the result segment.

3 If necessary, scroll through the phases and adjust the size and position of the ROI.

To scroll through the phases, right-click and move the mouse left or right, or you use the left/right arrow keys of your keyboard.

The result segment displays a graph that depicts the signal changes of the selected area throughout the different phases.

If you modify the ROI, the graph is updated accordingly.

4 To save the results of the **TimeCurve** evaluation, choose **TC-Snapshot** from the upper-right corner menu.

With this tool, you can create a series of snapshots that shows the resulting curve and the measurements in each phase.

If required, you can draw further ROIs. Each ROI is displayed with a different color and line type. The corresponding result curve is displayed with the same color and line type.

In each result curve, you can check the mean values of a certain phase. Just click a specific point on the curve and the values for this phase will be displayed in the upper area of the result segment. The image segment is also updated and displays the corresponding time ROI.

Besides drawing time ROIs, you can choose further **TimeCurve** tools from the upper-right corner menu or in the **Tool Gallery**:

- **TC-Pixel Lens** to highlight specific voxels within the image
- **TC-Freehand ROI** to draw freehand ROIs

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

18 Checking the job status

With the **DICOM Job Status View**, you can view the progress, percentage completion, and job status of the last 10 DICOM jobs of the current working session.

The **Job Status** column displays the current status:

- **In Queue**
- **In Progress**
- **Successful**
- **Failed**

◆ To open the view, click the icon in the access bar.

The **DICOM Job Status View** dialog box opens.

The oldest job is displayed at the top and processed first.

If the list is already full, newly triggered jobs are not displayed immediately but are placed in a queue.

19 Completing the evaluation

When you have finished your evaluation, you can proceed with the results in various ways:

- You can send the images for printing. (➔ Page 158 *Printing images*)
- You can export the images to different DICOM nodes or locations, for example, PACS. (➔ Page 160 *Exporting images*)
- You can close *syngo*.via View&GO and save the results to your local system. (➔ Page 162 *Saving the evaluation*)

Training material available

https://pep.siemens-info.com/en-us/syngo-via-view-go

19.1 Printing images

Images that you send for printing are initially collected in the **Printing** window.

To open the window, click the **Printing** tab on the side of the application window. Once the window is open, you can move it to any position on the screen.

1 To send your images for printing, select the segment that you want to print out and select a print option from the **Tool Gallery**: **Print Image** or **Print Stack**.

To select multiple segments for printing, keep the **Ctrl** key pressed and select the required segments, or select all segments with **Ctrl** + **A**. After selecting the segments, send them for printing by selecting the required print option.

2 Click the **Printing** tab to open the **Printing** window.

The images are organized in film sheets. You can click one of the film sheets to display the images.

If the **Printing** window is already open, you can also drag the required series directly from the **Series** panel into the **Printing** window.

3 If required, click this icon to open the **Printing Properties** dialog box to change further print settings, for example, the orientation of the printout, if a header or footer text should be displayed, or if the image text should be displayed in the printout.

4 If required, adjust the image display on the film sheet with the given tools and then start printing.

As soon as you start printing, a print job icon is displayed in the status bar of *syngo*.via View&GO.

Double-clicking this icon will open the **Print Job Status** dialog box, which gives you an overview of started, completed, and failed print jobs.

19.1.1 Print Layout Editor

The **Print Layout Editor** is an additional tool that allows you to extend the set of default print layouts.

The tool must be started with a command line.

- From the Windows **Start** menu, choose **Print Layout Editor**.

  The **Print Layout Editor** window opens.

  Here, you can create new print layouts, or modify and delete custom print layouts.

  You can only modify or delete the layouts that you created yourself. The default *syngo*.via View&GO layouts cannot be adapted.

If you want to get more detailed information about how to use the **Print Layout Editor**, visit the *syngo*.via View&GO user forum.

19.2 Exporting images

After you have completed the evaluation, it is highly recommended to send the study and the related results to a PACS for archiving.

For this, you use the **Export** function in the Viewer or in the **Patient Browser** to send the images to a dedicated location.

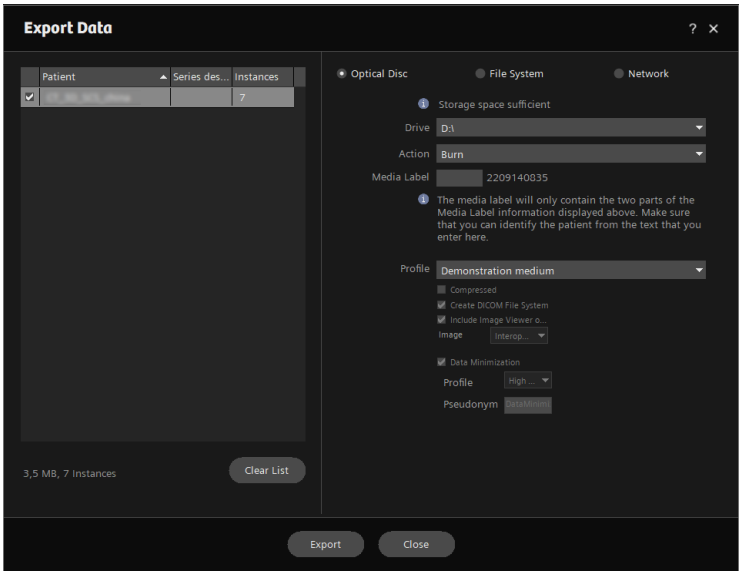
- To start the data export from the Viewer, select the data to be exported and click one of the Export icons in the **Favorite Tools** area:

  Export Image

  Export Stack

  The **Export** dialog box opens in which you make the required settings for the export.

  Here, you can specify the target location for the exported data (**Optical Disc**, **File System**, or **Network**).



When you select the **Network** export option, the **Target** list will show the configured DICOM nodes, such as available archives.

You can also select a segment, click **Ctrl**+**C** to take a screenshot of the segment, and send it to the clipboard. Then you can paste this clipboard content to any application that is compatible with Microsoft Windows.

Exporting data in non-DICOM format

Additionally, you can export images and movies in non-DICOM image formats to display them in common viewers and media players.

Supported file formats are:

- jpg, bmp, png, tiff
- avi, wmv

These images and movies are only intended for presentation purposes.

Remember to keep codecs and your Windows Media Player up to date at all times.

Otherwise you may find that the movie quality is insufficient and the displayed images blurred.

19.3 Saving the evaluation

When you complete the evaluation, the study is closed and all results are saved.

The result series are saved as DICOM series. When you open the study again, the result series will be displayed in the **Series** panel.

◆ To close a study, click the **Close** icon in the patient tab.

The study with all its results is saved. If required, you can export the study from the **Patient Browser** to another DICOM node, such as a PACS.

20 Appendix: Helpful hints

In the following chapter, you will find some information on shortcuts, which you can use to quickly access tools important for your daily work.

Navigation keys in 2D

Arrow keys up/ down	Scrolls through the images
Arrow keys up/ down	Scrolls through the images in stripe of stacks layouts
Ctrl + **Arrow key**	Jumps to the next segment
Home/**End**	Jumps to the first/last image in a stack

Navigation keys in 3D

Arrow key	• Rotates a 3D volume • Scrolls through a slice or slab
Ctrl + **Arrow key**	Jumps to the next segment

Shortcut keys to access tools and functions

A	Sends all images of a stack from the image area to the film sheet.
Alt (press and hold)	Allows you to move measurement objects even if a tool is currently active.
Ctrl + **A**	Selects all segments
Ctrl + **E**	Opens the **Export** dialog box
C	Activates the **ROI Circle** tool
D	Activates the **Distance Line** tool
E	Sends the currently selected image from the image area to the film sheet.
G	Hides or shows graphical objects

H	Hides or shows reference lines
Ctrl + **G**	Selects all graphical objects
I	Activates scrolling
L	Activates the **Pixel Lens** tool
M	Activates the **Marker** tool
O	Activates the **Rotate** tool
P	Activates the **Punch** function to draw and punch only one contour (quick punch mode)
Ctrl + **P**	Starts the print job
Q	Removes the **Clip box** and **Clip Plane** in the selected segments
R	Activates the **3D Reference Point** tool
S	Creates a snapshot finding out of the selected segments and adds it to the **Series** panel.
T	Hides or shows the image text
U	Enables or disables scrolling without skipping when using the right mouse button. If you scroll with skipping enabled, an indicator is displayed in the segment.
V	Activates the **VOI Sphere** tool
W	Activates the **Windowing** tool
Y	Enables or disables **Synchronization** functions
Z	Activates the **Zoom/Pan** tool
Spacebar	Activates the **Movie** tool Starts and stops a movie
Ctrl + **Shift** + **A**	Activates fast correction of alignment
Page Down	Rotates the aligned object clockwise in **Visual Alignment** mode

Standard shortcut keys

Esc	Deactivates the current tool For volume restriction with planes: • Hides the handles of the planes • Hides the planes
Del	Removes the selected object
Ctrl + **C**	Copies the selected object to the clipboard
Ctrl + **X**	Cuts the selected objects
Ctrl + **V**	Pastes an object from the clipboard
Alt + **Tab**	Lets you select another primary window or application
Ctrl + 	Selects multiple objects
Ctrl + **Z**	Lets you undo the last actions stepwise.
Ctrl + **Y**	Restores your recently undone actions stepwise.

V

W

X

Z

CE
0123

MD

CONFIG

Siemens Healthineers reserves the right to modify the design and specifications contained herein without prior notice. Some of the specifications described herein may not be currently available in all countries. Please contact your local Siemens Healthineers Sales representative for the most current information.

Caution: US federal law restricts the herein described devices to sale by or on the order of a physician.

The original language of this document is English.

Made in Germany

2024-05

Manufacturer
Siemens Healthcare GmbH
Henkestr. 127
91052 Erlangen
Germany

Siemens Healthineers Headquarters
Siemens Healthineers AG
Siemensstr. 3
91301 Forchheim
Germany
Phone: +49 9191 18-0
siemens-healthineers.com

Published by Siemens Healthineers AG / Print No. P03-010-CPQ.621.14.01.02 / © Siemens Healthineers AG, 2018 - 2024
Date of first issue: 2024-05