SICAT**ENDO**

SICAT ENDO   VERSION 2.0.40

Instructions for use | English | Standalone

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1 INTENDED PURPOSE

INTENDED PURPOSE

SICAT Endo is a software for visualization of imaging information of the oral-maxillofacial region. The imaging data originates from medical scanners such as CT or CBCT scanners. It is also used as a software system to aid dentists with the planning, the evaluation and the comparison of treatment options and the access planning for an endodontic treatment. The dentists' planning data may be exported from SICAT Endo and used for the realization of the planned therapy.

INDICATIONS

SICAT Endo is a software application for:

- Aiding diagnosis in the oral-maxillofacial region
- Aiding comparisons of different treatment options
- Aiding endodontic treatment planning
- Aiding treatment planning using endodontic surgical guides

CONTRAINDICATIONS

There are no contraindications.

However, SICAT Endo is used within a treatment workflow, that requires the use of different medical devices. For those devices, the contraindications according to the corresponding manufacturer's Instructions for Use must be observed.

PATIENT TARGET GROUP

For the patient target group there are no exclusion criteria.

However, SICAT Endo is used within a treatment workflow, that requires the use of different medical devices. For those devices, the indications including patient target group according to the corresponding manufacturer's Instructions for Use must be observed.

INTENDED USERS

The intended users are qualified professionals. For SICAT Endo, these are dentists.

2 CLINICAL BENEFIT

The use of SICAT Endo allows to aid the diagnosis/therapy in the oral-maxillofacial region based on fused CT data and optical impression data. Diagnosis-/therapy-related parameters like drill canals can be planned and endodontic entry points, with respect to occlusal surfaces in situ, can be visualized and exported for treatment.

Using SICAT Endo in accordance with the intended purpose allows providing a treatment for the patient that is planned based on 3D X-ray scans with state-of-the-art accuracy.

3 VERSION HISTORY

VERSION 2.0.40

- SICAT Suite can be used with local or server-based patient data management (stand-alone version).

VERSION 2.0.20

- Start via parameters with automatic data import (stand-alone version)

VERSION 2.0

- The Hub is available as an additional option for importing and registering optical impressions.

- STL files that have been imported into Sidexis 4 can be used to import and register optical impressions.

- Optical impressions can be displayed in color if they have been downloaded from the Hub or imported from an SIXD file.

- The volume orientation correction and panoramic curve adjustment can be configured separately for each application.

- In the Panorama view, the inspection window can be maximized.

- The transversal and longitudinal view in the Panorama workspace can be tilted.

- SICAT applications can be used either with workstation licenses or with network licenses.

- SICAT Suite can be used with Sidexis 4 or as a stand-alone version.

VERSION 1.4

- Initial release

4 SYSTEM REQUIREMENTS

⚠ CAUTION	**If your system does not fulfill the system requirements, this may mean that the software will not start or will not function as intended.** Check whether your system meets the minimum software and hardware requirements before installing the software.

Processor	Quad Core 2.3 Ghz (x64) or higher
RAM	8 GB
Graphics card	Dedicated* DirectX 11 or higher 2 GB graphics memory Current driver supporting at least WDDM 1.0
Screen	Resolution at least 1920x1080 pixels for 100 to 125 percent scale** Maximum resolution 3840x2160 pixels for 100 to 200 percent scale
Free disk space on hard disk	40 GB
Storage media	Access to external storage media containing installation files.
Input devices	Keyboard, mouse
Network	Ethernet, 1 Gbit/s
Printer for patient information	At least 300 dpi Paper format DIN A4 or US letter
Operating system	Windows 10 (64 Bit, Desktop) This operating system will be supported to the extent to and for the duration of which it is supported by Microsoft.
Web browser	Microsoft Edge Mozilla Firefox Google Chrome JavaScript must be activated. A standard browser must be set.
PDF viewer	Adobe Reader DC or higher, for example
Hub	Version 2.X from version 2.1
Database server	SQL Server Express 2019

Free disk space on hard disk (server-based patient data management)	1 TB, SSD recommended
Free disk space on hard disk (local patient data management)	100 GB

> **i**
>
> *SICAT Suite supports only dedicated graphics cards from the NVIDIA GeForce 960 GTX level of performance. Integrated graphics cards are not supported.
>
> ** The combination of a low monitor resolution and a high level of scaling may mean that the software displays certain parts of the user interface incompletely.
>
> The monitor must be configured so that it displays the SMPTE test image correctly. Information on this can be found in the section *Monitor calibration with the SMPTE test image [▶Page 251]*

SOFTWARE PREREQUISITES

SICAT Suite requires the following software components and installs them if they are not already available:

- CodeMeter license management software 7.21a
- SQL Server Compact Edition 4.0
- SICAT WebConnector

The SICAT WebConnector requires specific ports for communication with the SICAT server. The ports must be unblocked in your firewall:

PROTOCOL	DIRECTION OF TRANSMISSION	PORT
HTTP	Outgoing	80
HTTPS	Outgoing	443
FTPS - Management	Outgoing	21
FTPS - Data transmission	Outgoing	49152 -65534

> **i**
>
> You can also place orders without SICAT WebConnector. Information on this can be found in the section *Ordering process [▶Page 235]*.

5 SAFETY INFORMATION

It is important that you read the following safety-related chapters:

- *Definition of the danger levels [▶Page 13]*

- *Qualifications of operating personnel [▶Page 14]*

- *Safety instructions [▶Page 269]*

If serious incidents (such as severe injuries) occur in connection with the product, these must be reported to the manufacturer and the competent authority.

5.1 DEFINITION OF THE DANGER LEVELS

These instructions for use use the following safety labels to prevent injuries to operating personnel or patients, as well as material damages:

⚠️ **CAUTION**	**Labels a dangerous situation, which could result in smaller injuries if not prevented.**
NOTICE	**Labels information deemed important, but not relevant to safety.**

5.2 QUALIFICATIONS OF OPERATING PERSONNEL

> ⚠️
> **CAUTION**
>
> **The use of this software by unqualified personnel may result in an incorrect diagnosis and treatment.**
>
> The use of the software is restricted to qualified professionals.

The following requirements must be met to use the software:

- You have read the instructions for use.

- You are familiar with the basic structure and functions of the software.

6 USED ICONS AND HIGHLIGHTING

ICONS

The following icons are used in these instructions for use:

> **ℹ** The note icon labels additional information, such as alternative methods.

HIGHLIGHTING

Text and labels of elements shown by SICAT Suite are highlighted in **bold**. This includes the following objects in the user interface:

- Area labels
- Button labels
- Icon labels
- Text in notes and messages on the screen

HANDLING INSTRUCTIONS

Handling instructions are written as numbered lists:

☑ Prerequisites are marked with this icon.

1. Steps are labeled with numbers.

   ► Interim results are marked with this icon and indented.

2. Further steps will follow after the interim results.

3. **Optional or conditional step:** Optional or conditional steps are preceded by the aim of the step or the condition and a colon.

► Final results are marked with this icon.

- Instructions consisting of just one step are marked with this icon.

PATIENT DATA

All example patient names shown in this document are fictitious. Any similarities to real persons are therefore purely coincidental. In particular, there is no connection between the example patient names and the patient data shown.

7 OVERVIEW OF THE INSTRUCTIONS FOR USE

SICAT Endo is part of SICAT Suite in addition to other applications. SICAT Suite forms the framework, in which the SICAT applications run. The applications are therefore installed along with SICAT Suite. Information on this can be found in the section *Installing SICAT Suite [*▶*Page 37]*.

After installation, SICAT Suite can be used in two versions:

- Stand-alone version

- SIDEXIS 4 module

When installing SICAT Suite, both versions are always installed, even if you only use one version.

Since some operating steps vary depending on the version, there are separate instructions for use for the two versions. Make sure to consult the right instructions for use for the SICAT Suite version you are using.

The applications are also uninstalled along with SICAT Suite. Information on this can be found in the section *Uninstalling SICAT Suite [*▶*Page 266]*.

8 OVERVIEW OF SICAT SUITE

SICAT Suite comprises the following applications:

- SICAT Implant – The intended purpose of SICAT Implant is indicated in the SICAT Implant instructions for use.

- SICAT Function – The intended purpose of SICAT Function is indicated in the SICAT Function instructions for use.

- SICAT Air – The intended purpose of SICAT Air is indicated in the SICAT Air instructions for use.

- SICAT Endo – The intended purpose of SICAT Endo is indicated in the SICAT Endo instructions for use.

LANGUAGES:

SICAT Suite supports the following languages in the user interface:

- English

- German

- French

- Japanese

- Spanish

- Italian

- Dutch

- Portuguese

- Russian

- Danish

- Swedish

LICENSING

The following steps are required to acquire a license for SICAT applications or individual functions:

- You contact your local sales partner.

- You receive a voucher code.

- Using the voucher code, you generate a license key on the SICAT portal (which can be accessed via SICAT home page).

- SICAT adds the license key to your activation key.

- You use your activation key to activate SICAT applications or individual functions in SICAT Suite. Workstation licenses are activated in SICAT Suite and network licenses are activated on the license server in the local practice network.

> **i** If subscriptions to the Suite products are available in your country, you can obtain separate information on how to set them up and use them.

FULL VERSION AND VIEWER MODE

SICAT Suite can start in one of two modes:

- If you have activated the full version license of at least one SICAT application, SICAT Suite will start as full version.

- If you have neither activated a license nor the Viewer license of a SICAT application, SICAT Suite will start in Viewer mode.

In general, the following is true:

- You do not need to choose a mode when you install SICAT Suite.

- Applications with an activated full version license will start in the full version.

- Applications without a license and with activated Viewer license will start in Viewer mode.

9 OVERVIEW OF THE INSTALLATION

Depending on the requirements and infrastructure available on site, SICAT Suite can be used in different application scenarios at a single workstation or in a network environment with multiple workstations and shared patient data management.

During SICAT Suite set-up, SICAT Suite is installed with all software components needed according to the selected installation type either on a single workstation computer or, in a network environment, on a server and on the respective workstation computers in the network.

The SICAT Suite set-up automatically opens the installers required for the respective software components one after the other:

- SICAT Suite Patient Database

- SICAT Suite with all applications (SICAT Implant, SICAT Function, SICAT Air, SICAT Endo)

- SICAT Implant Database

Depending on the selected installation type, the patient data is stored in the SICAT Suite Patient Database on the local computer or on a separate server.

> **i** Starting with version 2.0.40 of SICAT Suite, the former Patient Record Depot must be relocated to the SICAT Suite Patient Database if you want to continue using the existing data. Information on this can be found in the section *Patient database [▶Page 67]*.

APPLICATION SCENARIO: LOCAL PATIENT DATA MANAGEMENT

If SICAT Suite is used on a single workstation computer, all components are installed on the workstation computer. The patient data is managed locally in the SICAT Suite Patient Database on the workstation computer. The workstation computer can be used by one or more users, each having their own settings.

APPLICATION SCENARIO: SERVER-BASED PATIENT DATA MANAGEMENT

If SICAT Suite is used on several workstation computers in a network, the server component with the SICAT Suite Patient Database must be installed on the server and SICAT Suite must be installed on the respective workstation computers. The patient data is managed in the SICAT Suite Patient Database on the server and the workstation computers each have access to the centrally managed patient data via the network. The common patient data management can be used by several users at the same time. Depending on the available license (full version or Viewer) the workstation computers can either be used to edit patient data or to view patient data. Information on this can be found in the section *Licenses [▶Page 56]*.

> **i** In a server environment, the SICAT Implant Database is installed locally on each workstation computer as well.

10 STARTING SICAT SUITE SET-UP

⚠️ **CAUTION**	**Changes to the software may mean that the software will not start or will not function as intended.** 1. Do not make any changes to the software installation. 2. Do not delete or change any of the components in the software installation directory.

⚠️ **CAUTION**	**If your system does not fulfill the system requirements, this may mean that the software will not start or will not function as intended.** Check whether your system meets the minimum software and hardware requirements before installing the software.

⚠️ **CAUTION**	**Insufficient authorizations may mean that the software installation or software update fails.** Make sure you have sufficient privileges on your system if you install or update the software.

The SICAT Suite set-up installs all required software components one after the other.

☑ Your computer fulfills the system requirements. Information on this can be found in the section *System requirements [▶Page 10]*.

☑ SICAT Suite can be downloaded from the SICAT website.

1. Download the ZIP file from the SICAT website.

2. Unzip the ZIP file on the computer on which you want to install SICAT Suite.

3. Once unzipped, open the **SICAT Suite** folder in the Windows Explorer.

4. Start the file **Setup.exe**.

► The SICAT Suite set-up starts and the **INTRODUCTION** window opens:
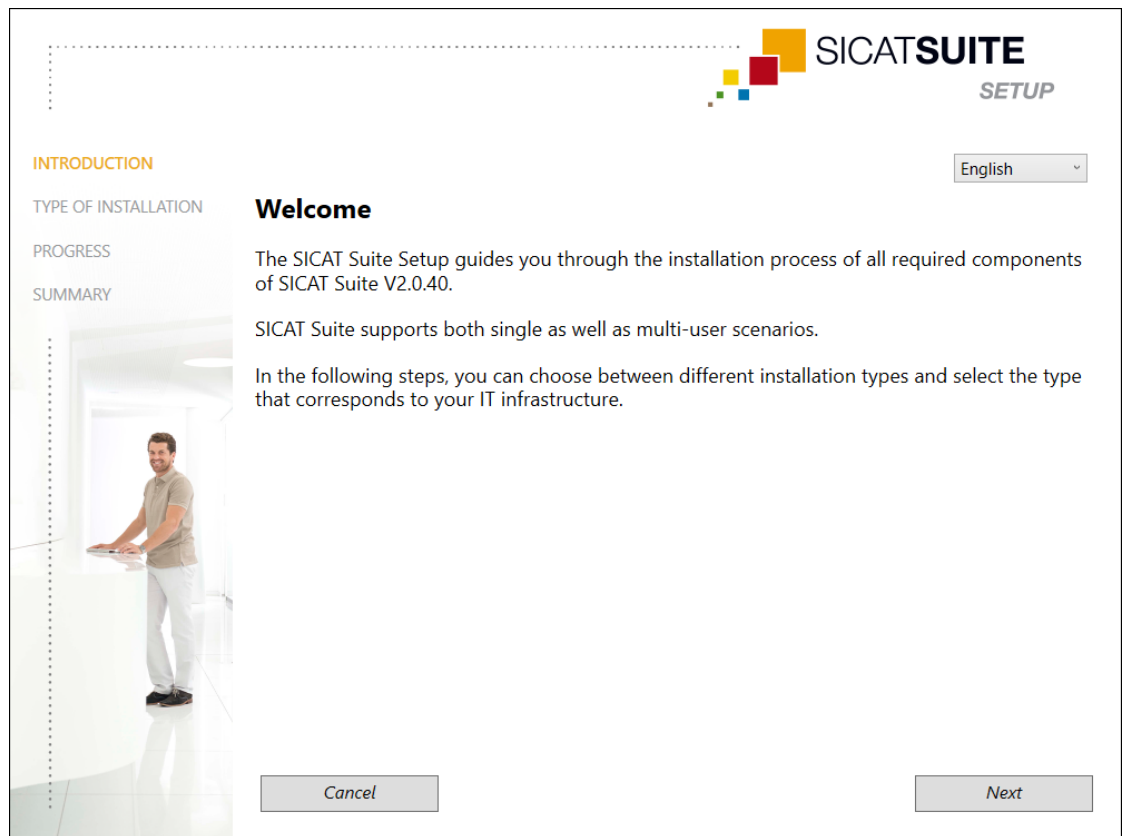
5. Select the desired language for the SICAT Suite set-up in the top right-hand corner of the **INTRO-DUCTION** window and click on **Next**.

► The selected language will be used for the entire installation. The **TYPE OF INSTALLATION** window opens.
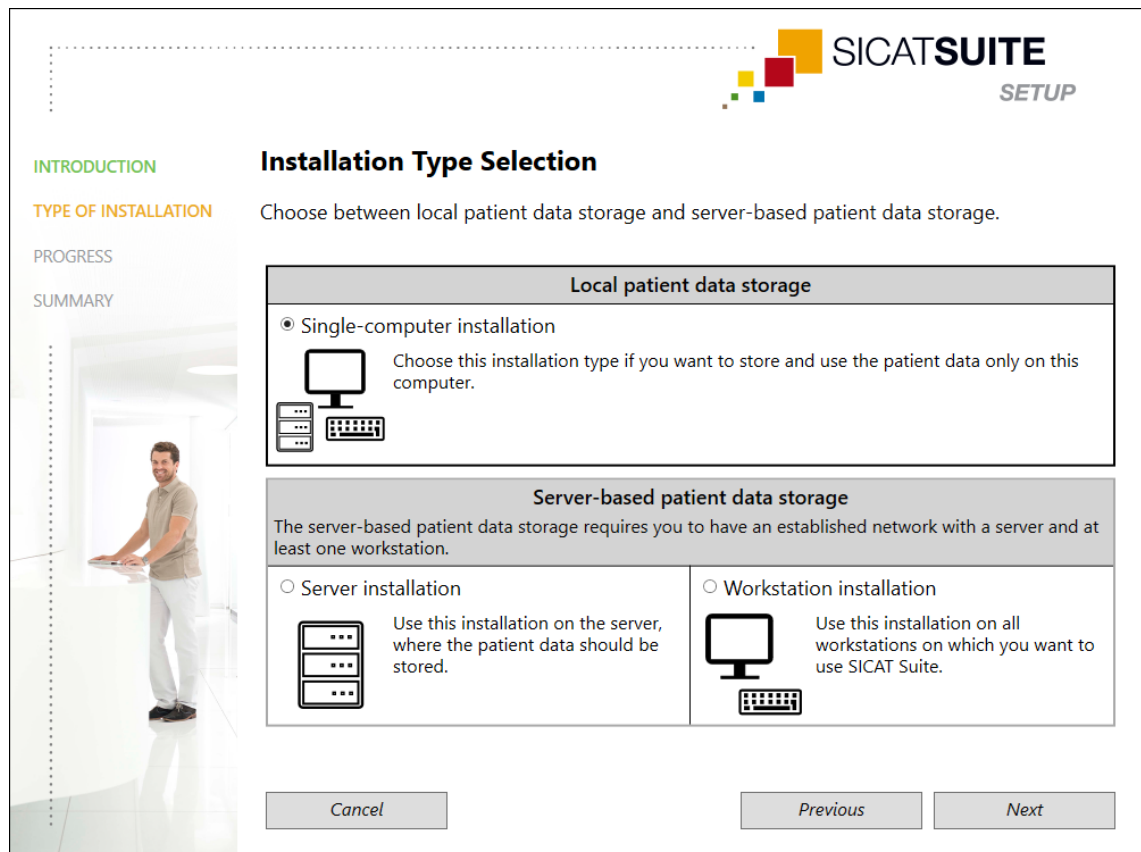
The set-up offers the following options for the further SICAT Suite installation:

■ *Installation with local patient data management as a single-user installation [▶Page 22]*

■ *Installation with server-based patient data management as server and workstation computer installation [▶Page 24]*

10.1 INSTALLATION WITH LOCAL PATIENT DATA MANAGEMENT AS A SINGLE-USER INSTALLATION

Select single-user installation to install SICAT Suite with local patient data management as single-user installation.

☑ SICAT Suite is to be installed on a single workstation computer.

☑ The SICAT Suite set-up has been started. Information on this can be found in the section *Starting SICAT Suite set-up [▶Page 20]*.

1. In the **TYPE OF INSTALLATION** window, select the check box **Single-computer installation** in the section **Local patient data storage** and click on **Next**.

▶ The **PROGRESS** window opens:
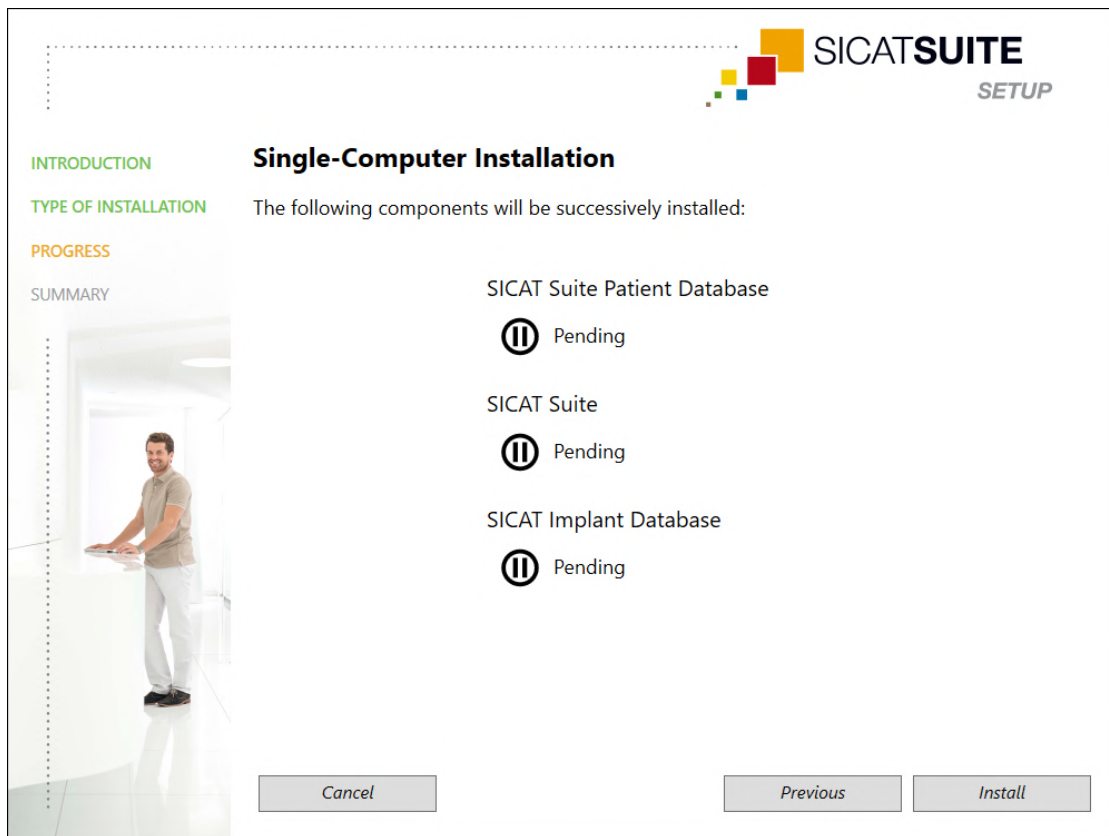
▶ The software components that need to be installed will be displayed.

2. Click on the **Install** button.

▶ The installation process starts. The icon ▶ appears for the duration of the installation.

▶ The respective installers for the required software components for a single-user installation are opened one after the other:
Installing the SICAT Suite Patient Database [▶Page 28]
Installing SICAT Suite [▶Page 37]
Installing SICAT Implant Database

▶ When the installation has been completed, the **SUMMARY** window opens:

▶ If the software components have been successfully installed, the icon ✓ appears.

3. Click on the **Finish** button.

▶ The SICAT Suite set-up closes. When SICAT Suite is started for the first time, the connection to the local patient database is established automatically.

10.2 INSTALLATION WITH SERVER-BASED PATIENT DATA MANAGEMENT AS SERVER AND WORKSTATION COMPUTER INSTALLATION

To install SICAT Suite in a network environment with several workstation computers, the SICAT Suite set-up must be started on the server and on each workstation computer and the appropriate installation must be selected.

- The server installation for installing the SICAT Suite Patient Database must be performed on the server.

- The workstation computer installation must be performed on all workstation computers on which SICAT Suite is to be used.

SERVER INSTALLATION

☑ SICAT Suite is to be installed in a server environment.

☑ The SICAT Suite Patient Database is to be installed on a server computer.

☑ The SICAT Suite set-up has been started. Information on this can be found in the section *Starting SICAT Suite set-up [*▶*Page 20]*.

1. In the **TYPE OF INSTALLATION** window, select the check box **Server installation** in the **Server-based patient data storage** section and click on **Next**.

▶ The **PROGRESS** window opens:
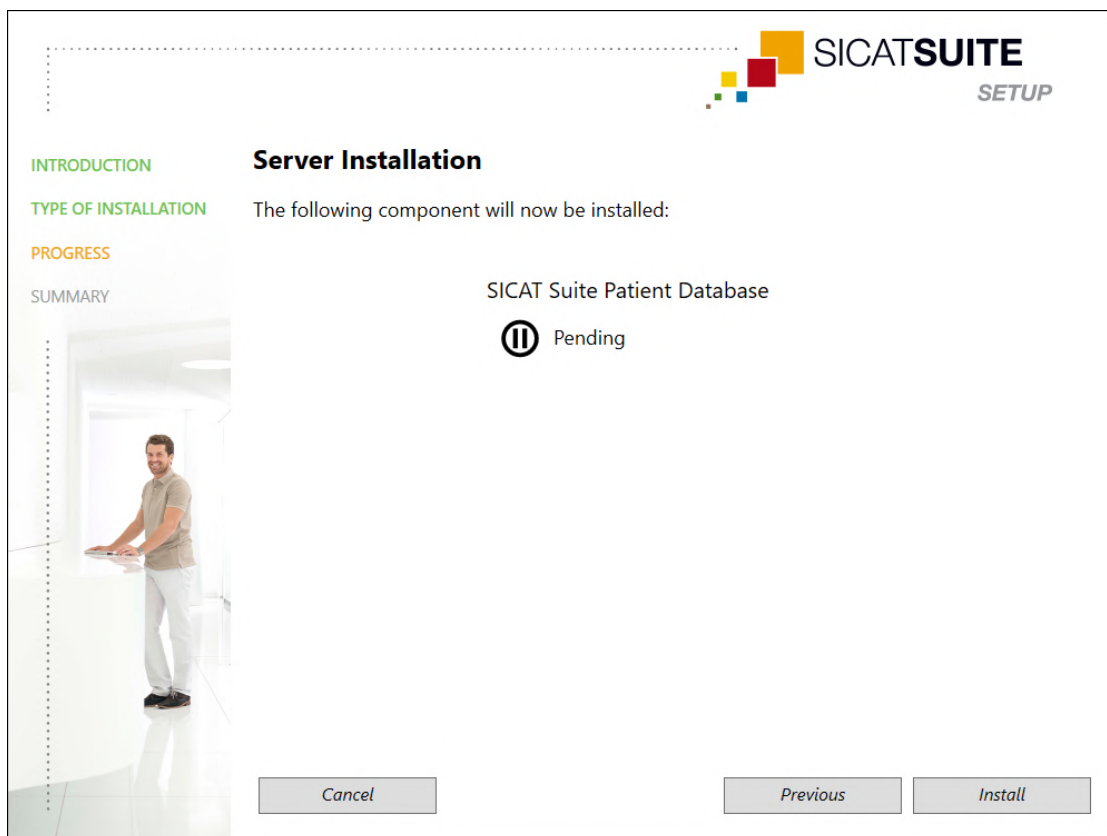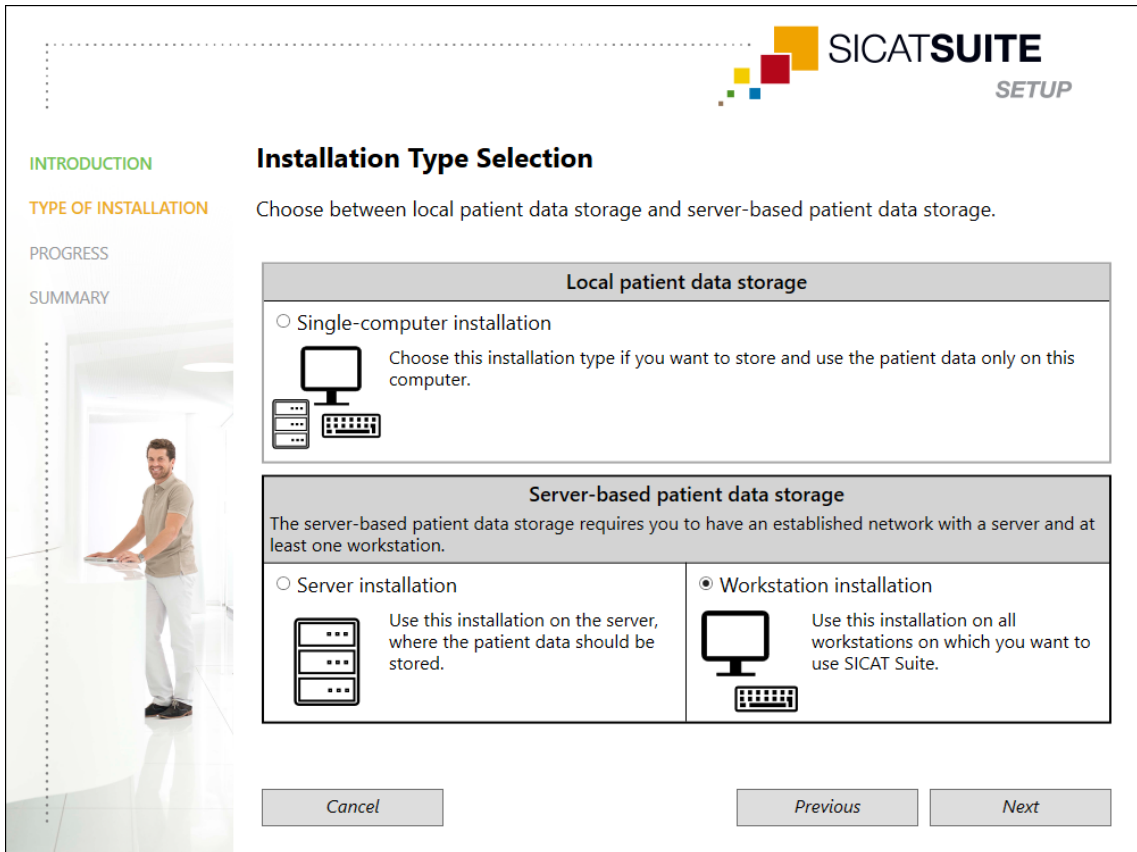
▶ The software component that needs to be installed will be displayed.

2. Click on the **Install** button.

▶ The installation process starts. The ⊙ icon appears for the duration of the installation.

▶ The installer for the server installation opens:
Installing the SICAT Suite Patient Database [▶*Page 28]*

▶ When the installation has been completed, the **SUMMARY** window opens.

▶ If the installation has been successful the icon ✔ appears.

3. Click on the **Finish** button.

▶ The SICAT Suite set-up closes.

WORKSTATION COMPUTER INSTALLATION

☑ SICAT Suite is to be installed in a server environment.

☑ SICAT Suite is to be installed on a workstation computer.

☑ The SICAT Suite set-up has been started. Information on this can be found in the section *Starting SICAT Suite set-up [▶Page 20]*.

1. In the **TYPE OF INSTALLATION** window, select the check box **Workstation installation** in the **Server-based patient data storage** section and click on **Next**.

▶ The **PROGRESS** window opens:

▶ The software components that need to be installed will be displayed.

2. Click on the **Install** button.

▶ The installation process starts. The icon ⊙ appears for the duration of the installation.

▶ The respective installers for the required software components for a workstation computer installation are opened one after the other:
Installing SICAT Suite [▶Page 37]
Installing SICAT Implant Database

▶ When the installation has been completed, the **SUMMARY** window opens.

▶ If the software components have been successfully installed, the icon ✓ appears.

3. Click on the **Finish** button.

▶ The SICAT Suite set-up closes.

10.3 INSTALLING THE SICAT SUITE PATIENT DATABASE

The installation of the SICAT Suite Patient Database is started automatically during the SICAT Suite set-up.

Depending on the type of installation that you have selected during the SICAT Suite set-up, the SICAT Suite Patient Database is installed as follows:

- *Installation with local patient data management as a single-user installation [▶Page 29]*

- *Installation with server-based patient data management as server installation [▶Page 32]*

10.3.1 INSTALLATION WITH LOCAL PATIENT DATA MANAGEMENT AS A SINGLE-USER INSTALLATION

☑ The SICAT Suite Patient Database is not installed.

☑ The SICAT Suite Patient Database installer was started by the SICAT Suite set-up as a single-user installation.

NOTICE	**Any modification of the default installation paths may mean that the SICAT Suite Patient Database will not function as intended.** Only modify the installation paths if you are familiar with the installation of SQL databases. Consult our customer support for details regarding the modification of installation paths.

1. Select the desired language for the SICAT Suite Patient Database installer in the top right-hand corner of the **INTRODUCTION** window and click on **Next**.

► The **OPTIONS** window opens:

► In the **Data root directory** field, the path is shown under which the database with the patient data is created.

2. Click on the button next to the **Data root directory** field if you want to select another storage location. Make sure that there is sufficient space available at the selected storage location. Information on this can be found in the section *System requirements [*▶*Page 10]*.

    ► The **Select folder** window opens.

3. Browse to the desired folder in which the SICAT Suite Patient Database installer is to create the "Microsoft SQL Server" directory and click on **OK**.

    ► The SICAT Suite Database installer adds the path to the selected folder in the **Data root directory** field.

4. If you want to select individual paths for the installation of the SICAT Suite Patient Database, click on the **Show extended options for SQL Server** button to display the advanced options and select the desired directories for the corresponding SQL data.

▶ The advanced options with the individual paths and the database properties are then displayed:

5. Make a note of the contents of the **Instance** and **Database** input fields, if you modify the database properties.

6. Click on the **Install** button.

    ▶ If the available storage space on the installation drive is insufficient, a window containing information about the actual and recommended storage space opens. In this case you can continue the installation by clicking on **Install anyway** or cancel the installation by clicking on **Cancel**.

    ▶ The **PROGRESS** window opens.

    ▶ The SICAT Suite Patient Database is installed.

    ▶ When the installation has been completed, the **SUMMARY** window opens.

7. Click on the **Finish** button.

    ▶ The SICAT Suite Patient Database installer closes.

10.3.2 INSTALLATION WITH SERVER-BASED PATIENT DATA MANAGEMENT AS SERVER INSTALLATION

☑ The SICAT Suite Patient Database is not installed.

☑ The SICAT Suite Patient Database installer was started by the SICAT Suite set-up as a server installation.

NOTICE	**Any modification of the default installation paths may mean that the SICAT Suite Patient Database will not function as intended.** Only modify the installation paths if you are familiar with the installation of SQL databases. Consult our customer support for details regarding the modification of installation paths.

NOTICE	**The patient database must be protected with an individually chosen password. If you forget your password, you will no longer be able to connect to the patient database and access patient records.** Keep your password for connecting to the patient database in a secure place so that you can find it at all times.

1. Select the desired language for the SICAT Suite Patient Database installer in the top right-hand corner of the **INTRODUCTION** window and click on **Next**.

▶ The **OPTIONS** window opens:

▶ In the **Data root directory** field, the path is shown under which the database with the patient data is created.

2. Click on the button next to the **Data root directory** field if you want to select another storage location. Make sure that there is sufficient space available at the selected storage location. Information on this can be found in the section *System requirements [▶Page 10]*.

   ▶ The **Select folder** window opens.

3. Browse to the desired folder in which the SICAT Suite Patient Database installer is to create the "Microsoft SQL Server" directory and click on **OK**.

   ▶ The SICAT Suite Database installer adds the path to the selected folder in the **Data root directory** field.

4. If you want to select individual paths for the installation of the SICAT Suite Patient Database, click on the **Show extended options for SQL Server** button to display the advanced options and select the desired directories for the corresponding SQL data.

► The advanced options with the individual paths and the database properties are then displayed:

5. Make a note of the contents of the **Instance**, **Port** und **Database** input fields if you modify the database properties.

6. Click on the **Next** button.

▶ The **Connection Setup** window opens:

▶ If you have modified database properties, the changed database properties are listed.

7. Type a secure password that you want to use for connecting to the SICAT Suite Patient Database in the **Password** input field.

8. Re-type your selected password in the **Repeat password** input field. Enable the **Show plain text** check box to show the assigned password.

9. Remember your password. You need it to connect to the SICAT Suite Patient Database on the workstation computers. You cannot access the patient database without your password.

10. Click on the **Install** button.

▶ If the available storage space on the installation drive is insufficient, a window containing information about the actual and recommended storage space opens. In this case you can continue the installation by clicking on **Install anyway** or cancel the installation by clicking on **Cancel**.

▶ The **PROGRESS** window opens.

▶ The SICAT Suite Patient Database is installed.

► When the installation has been completed, the **SUMMARY** window opens:
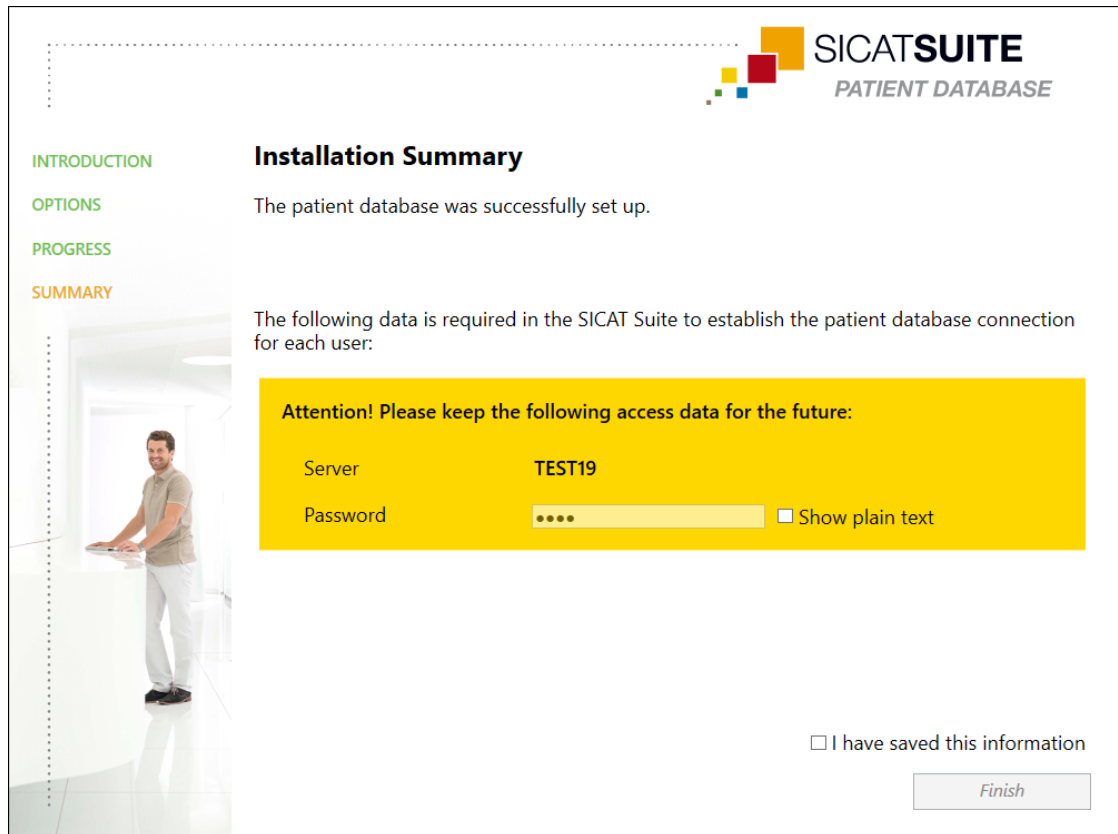
► Your credentials for the SICAT Suite Patient Database are shown in the lower part of the window.

11. Enable the **Show plain text** check box.

   ► Your password is shown.

12. Make a note of the name of the server after the **Server** entry and the password after the **Password** entry and keep them both in a safe place that is inaccessible to unauthorized persons.

13. Enable the check box **I have saved this information** to confirm that you have written down the credentials.

14. Click on the **Finish** button.

   ► The SICAT Suite Patient Database installer closes.

10.4 INSTALLING SICAT SUITE

The installation of SICAT Suite is started automatically during the SICAT Suite set-up.

☑ SICAT Suite is not installed.

☑ The SICAT Suite installer was started by the SICAT Suite set-up.
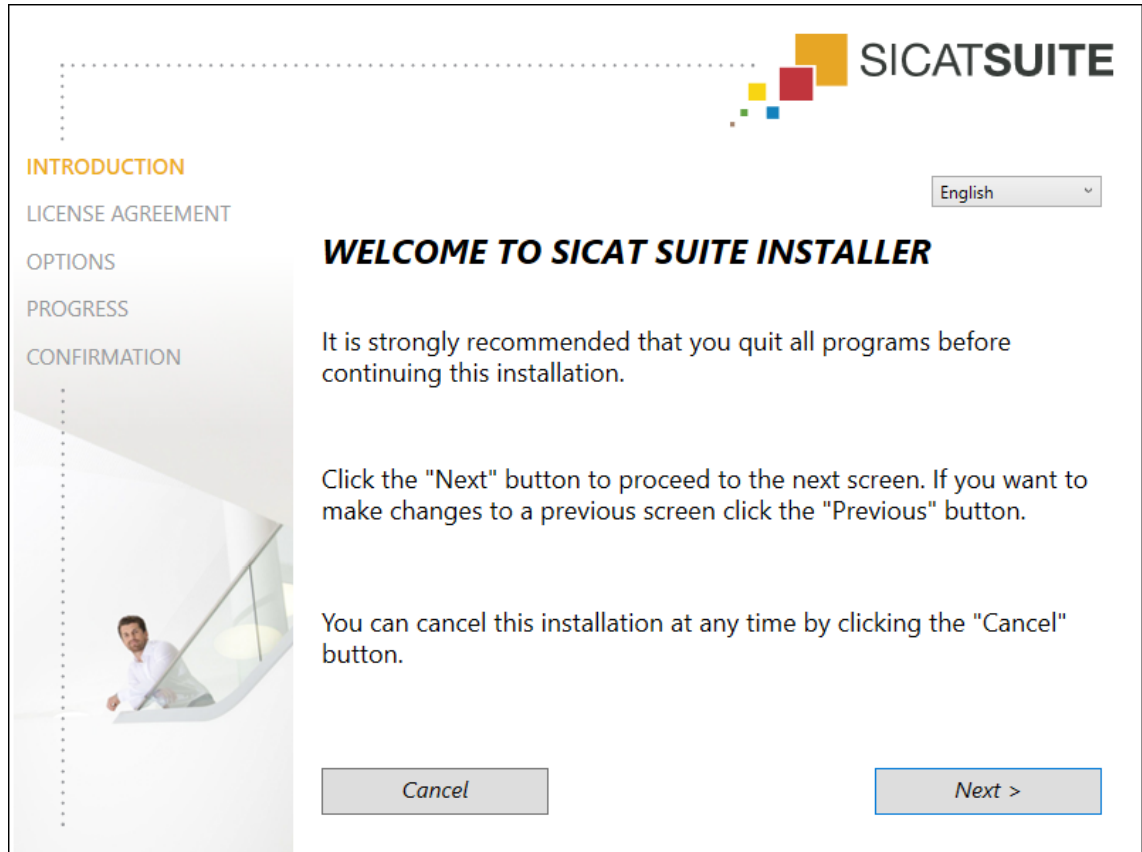
1. Select the desired language for the SICAT Suite installer in the top right-hand corner of the **INTRO-DUCTION** window and click on **Next**.

▶ The **LICENSE AGREEMENT** window opens:

2. Read the end-user licensing agreement in full, select the check box **I accept the terms of the Li-cense Agreement** and click on **Next**.

▶ The **OPTIONS** window opens:
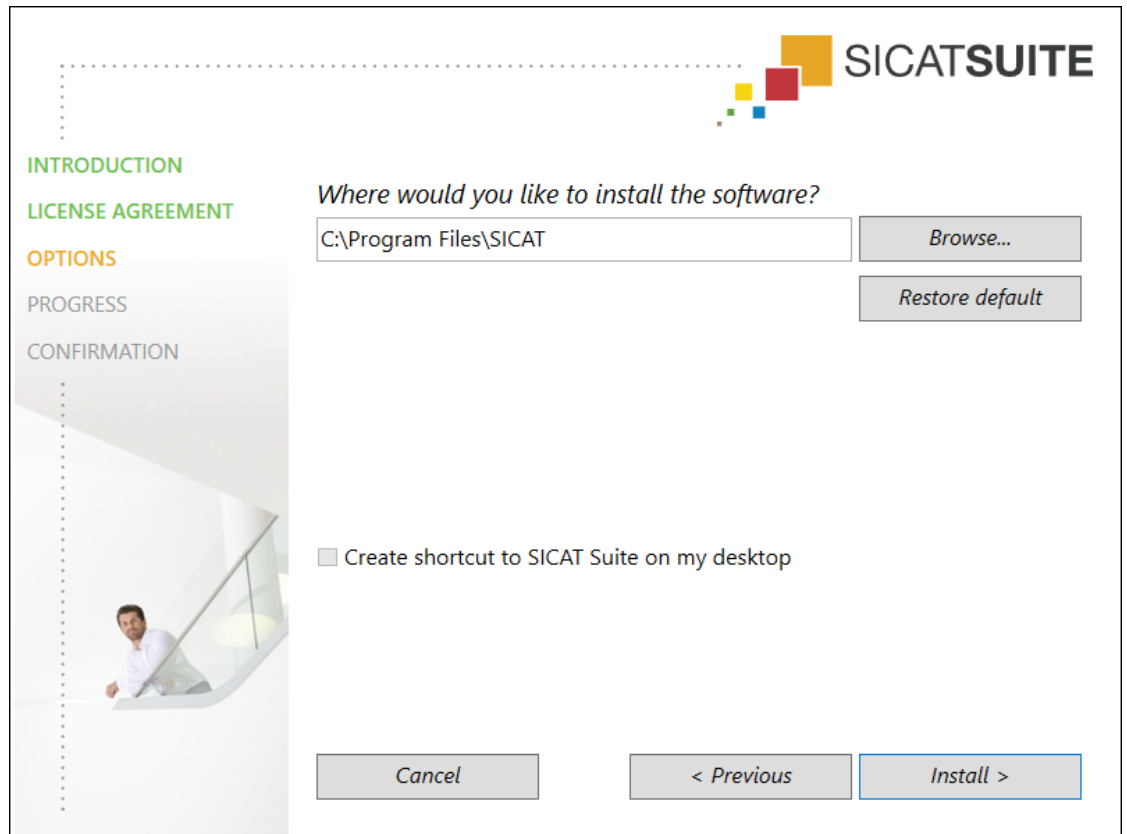
3. To change the folder in which the SICAT Suite installer will install SICAT Suite on the hard disk, click on the **Browse** button.

    ▶ The **Select folder** window opens.

4. Browse to the desired folder and click on **OK**.

    ▶ The SICAT Suite installer adds the path to the selected folder in the **Where would you like to install the software** field.

5. If available, enable or disable the **Create shortcut to SICAT Suite on my desktop** check box.

6. Click on the **Install** button.

    ▶ The **PROGRESS** window opens.

    ▶ SICAT Suite and the remaining required software are installed.

    ▶ When the installation has been completed, the **CONFIRMATION** window opens.

7. Click on the **Finish** button.

    ▶ The SICAT Suite installer closes.

11 PERFORMING TEST STEPS AFTER OPERATING SYSTEM UPDATE

⚠️ **CAUTION**	**Changes to the operating system may mean that the SICAT applications will not start or will not function as intended.**
	1. Prior to starting the SICAT applications, always check whether the operating system of your computer has installed updates or security updates since you last used the SICAT applications.
	2. If the operating system of your computer has installed updates or security updates, perform the steps required for testing the SICAT applications as described in the instructions for use.
	3. If the behavior of the SICAT applications differs from the behavior described in the instructions for use, stop using of the software and contact SICAT support immediately.

If the operating system of your computer has installed updates, you must ensure that SICAT Endo operates without any errors. Perform the corresponding test steps. If you notice deviations during a test step, prevent further use of SICAT Endo on the computer in question and contact SICAT support.

PREPARATIONS

☑ The SICAT Suite Patient Database is installed.

☑ A connection to a patient database has been added and is active. Information on this can be found in the section *Adding a connection to a patient database [▶Page 70]*.

1. Start SICAT Suite as a stand-alone version by pressing the **Windows** key, entering **SICAT Suite** and clicking on the **SICAT Suite** icon.

2. Import the reference data record from the "SICATSuite_ReferenceDataset_2.0.40.zip" file. You can find the data record in the SICAT Suite ZIP file that you have used for the installation. Information on this can be found in the section *Data import [▶Page 79]*.

3. Open the "Patient Axx" patient record in SICAT Endo.

ENDOLINE

1. Make sure that the **FDI** tooth scheme is active. Information on this can be found in the section *Using general settings [▶Page 249]*.

2. Make sure that the **Panorama** workspace is active.

3. Reset the views to their default values.

4. In the **Object browser**, expand the "**Tooth 45**" group.

5. In the **Object browser**, select the "**15,24 mm Tooth No. 45**" element and focus on it.

6. Compare the **Tangential** view with the following screenshot:
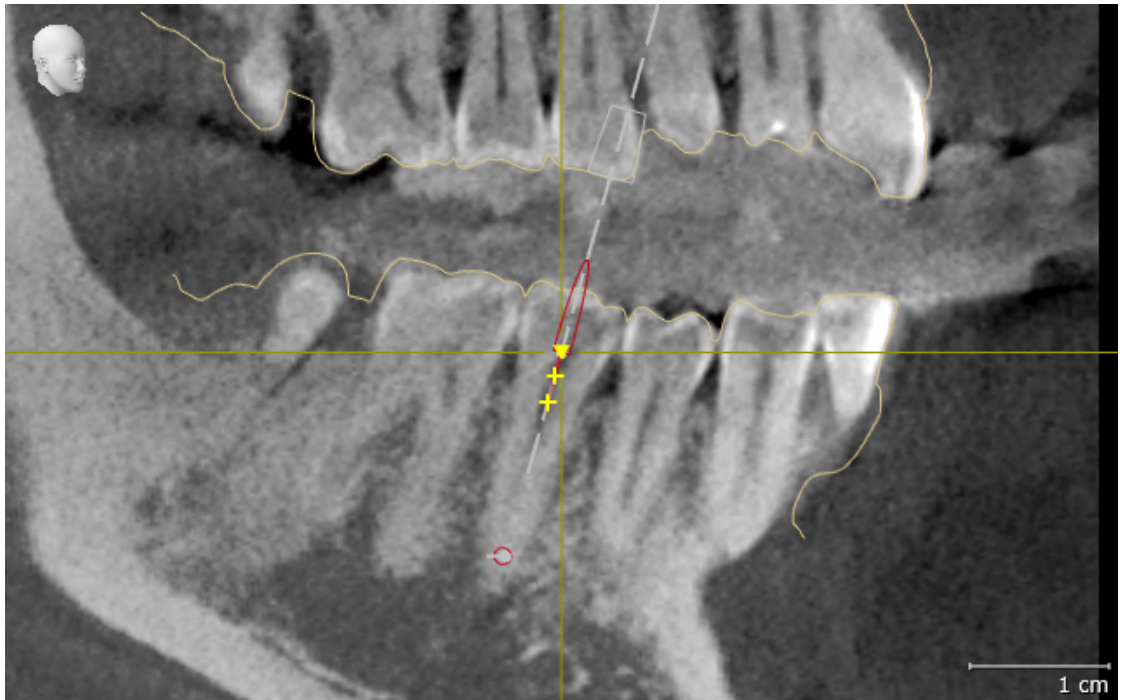
7. In the **Object browser**, expand the "**Tooth** 25" group.

8. In the **Object browser**, select the "13.63 mm Tooth No. 25" element and focus on it.

9. Compare the **Cross-Sectional** view with the following screenshot:
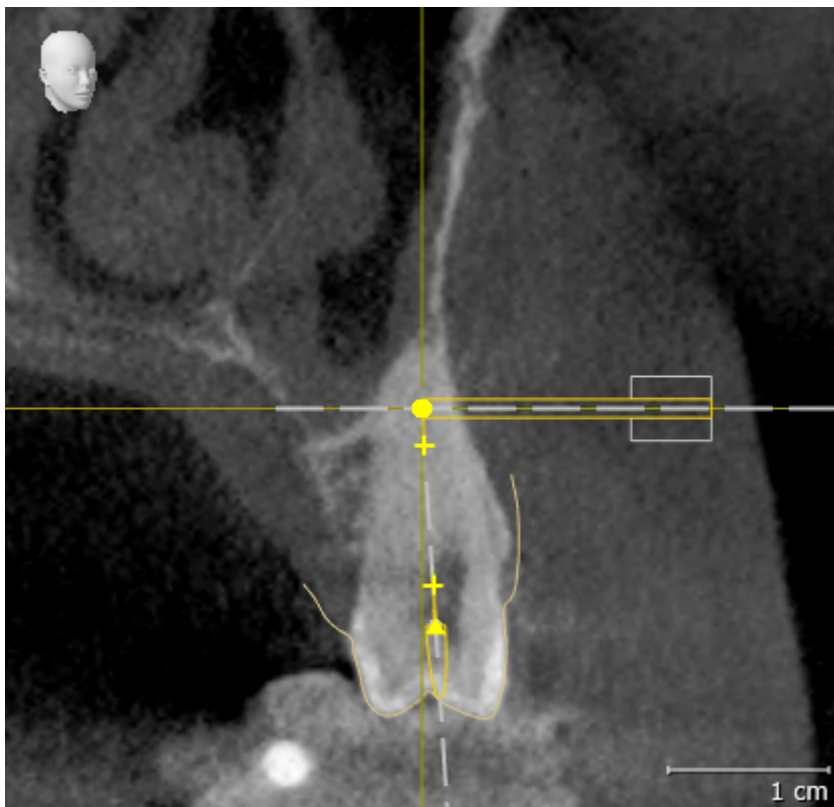
12 UPDATING OR REPAIRING SICAT SUITE

UPGRADING SICAT SUITE

⚠ **CAUTION**	**Insufficient authorizations may mean that the software installation or software update fails.** Make sure you have sufficient privileges on your system if you install or update the software.

You can upgrade SICAT Suite by starting the SICAT Suite installer and clicking on **Upgrade**. The installer will first uninstall the old version of SICAT Suite. All data and settings will be maintained.

i	Starting with version 2.0.40 of SICAT Suite, the former Patient Record Depot must be relocated to the SICAT Suite Patient Database if you want to continue using the existing data. You can relocate the data of a Patient Record Depot to a patient database when you set up the connection to a patient database. You can find information on how to relocate a Patient Record Depot to the SICAT Suite Patient Database in the corresponding separate quick guide.

REPAIRING SICAT SUITE

You can repair SICAT Suite. All data and settings will be maintained.

☑ SICAT Suite has already been installed.

☑ SICAT Suite has not been started.

1. Click on **Programs and features** in the Windows **Control panel**.

    ▶ The **Programs and features** window opens.

2. Click on the **SICAT Suite** item.

3. Click on the **Change** button.

    ▶ The SICAT Suite installer starts.

    ▶ The **OPTIONS** window opens.

4. Click on the **Repair** button.

    ▶ When the repair has been completed, the **CONFIRMATION** window opens.

5. Click on the **Finish** button.

    ▶ The SICAT Suite installer closes.

13 SPECIAL FEATURES IN THIS VERSION

Depending on whether you use SICAT Endo as stand-alone version or connected to other software, there are differences in certain areas.

PATIENT DATA AND VOLUME DATA

The stand-alone version of SICAT Suite includes its own central administration of patient records and volume data. The concept of patient records in the stand-alone version of SICAT Suite can be compared to classic patient records:

- Patient records are stored in patient databases which can be compared to filing cabinets.

- Selecting a patient record can be compared to removing a patient record from a filing cabinet and placing it on your desk.

- Opening patient data from a patient record in SICAT applications can be compared to taking out pages from the patient record.

- Adding 3D X-ray scans to a patient file can be compared to adding 2D X-ray scans to a classical patient file.

- A 3D X-ray scan may form the basis of several planning projects. Planning objects are also part of a patient record.

- A 3D X-ray scan together with the corresponding planning projects is known as a study.

Information on managing connections to patient databases can be found in the section *Patient database [▶Page 67]*. Information on managing patient records can be found in the section *Patient records [▶Page 89]*.

> ℹ️ You should also back up the user settings of the SICAT applications in addition to the patient data. You can find the user settings for each user in two directories separately. You can open the directories by entering **%appdata%\SICAT GmbH & Co. KG** and **%localappdata%\SICAT GmbH & Co. KG** into the address bar of Windows Explorer.

SETTINGS

In the stand-alone version, SICAT Suite manages all settings itself. Information on this can be found in the section *Settings [▶Page 248]*.

LICENSES

The stand-alone version and versions of SICAT Suite connected to other software use the same licenses. You do not need to choose a version when you install SICAT Suite.

OPENING STUDIES WITH OR WITHOUT WRITE PERMISSIONS

The following conditions must be met in order to make changes to SICAT Endo studies and save these changes:

- A SICAT Endo full version license must be activated.

- A patient record depot must be active.

Otherwise, you cannot make or save any changes to SICAT Endo studies. If you have activated a SICAT Endo Viewer license, you can view 3D X-ray scans and SICAT Endo studies.

The following table shows which functions are available depending on the license if a connection to a patient database is activated:

FUNCTION	APPLICATION FULL VERSION LICENSE	APPLICATION VIEWER LICENSE	NO APPLICATION LICENSE
Support area	Yes	Yes	Yes
General settings	Yes	Yes	Yes
Data export	Yes	No	No
Managing connections to patient databases	Yes	No	No
Managing patient records	Yes	No	No
Data import	Yes	No	No
Help	Yes	Yes	Yes

The following table shows which functions are available depending on the SICAT Endo license if a connection to a patient database is activated:

FUNCTION	SICAT ENDO FULL VERSION LICENSE	SICAT ENDO VIEWER LICENSE	NO SICAT ENDO LICENSE
Making changes to SICAT Endo studies	Yes	No	No
Opening data in Viewer mode	Yes, if the patient record is locked	Yes	Yes, for SICAT data

Under certain circumstances you cannot make or save changes to SICAT Endo studies even if the application license is activated. An ongoing ordering process may, for example, be one cause for this.

In the stand-alone version, the license status also influences the available functions in the **SICAT Suite Home** window. Information on this can be found in the section *Overview of the "SICAT Suite Home" window.* [▶*Page 52*].

Further information is available in the section *Opening read-only data* [▶*Page 262*].

14 THE STANDARD WORKFLOW OF SICAT ENDO

⚠ **CAUTION**	**The shared use of SICAT Suite and the SICAT applications contained therein with other devices within a computer network or a storage area network could result in previously unknown risks for patients, users and other persons.** Ensure that rules are compiled within your organization to determine, analyze and assess risks in relation to your network.
⚠ **CAUTION**	**Saving SICAT application data in an unreliable or incompatible network file system could result in data loss** Together with your network administrator, make that SICAT application data can be safely stored in the desired network file system.
⚠ **CAUTION**	**Changes to your network environment may result in new risks for your network environment. Examples include changes to your network configuration, the connection of additional devices or components to your network, the disconnection of devices or components from your network and the updating or upgrading of network devices or components.** Perform a network risk analysis after any changes to the network.

📖 Before starting work with SICAT Suite, it is important that you have read these instructions for use and in particular all safety information in full. Keep these instructions for use at hand for use when information is needed in future.

INSTALLATION

Information on how to install SICAT Suite can be found in the section *Installing SICAT Suite [▶Page 37]*.

ACTIVATING FULL VERSION

1. If you have purchased a license for SICAT Endo, activate the license to unlock the full version. Information on this can be found in the section *Licenses [▶Page 56]*.

2. In order to save your data, create at least one connection to a patient database and activate it. Information on this can be found in the section *Patient database [▶Page 67]*.

ℹ	If you have not purchased a license for SICAT Endo, open a 3D X-ray scan in Viewer mode. Information on this is available in the section *Opening read-only data [▶Page 262]*.

START

Information on how to start SICAT Suite can be found in the section *Starting SICAT Suite [▶Page 49]*.

SETTINGS

Change the desired settings in the **Settings** area. Information on this can be found in the section *Settings [▶Page 248]*.

DATA RECORDS

SICAT Endo combines three different data types:

- 3D X-ray scans, from Sirona GALILEOS, for example

- Intraoral scans, for example, from Sirona XIOS XG

- Digital optical impressions, from Sirona CEREC, for example

ACQUIRING DATA RECORDS

1. Create an intraoral scan of the patient where required. For more information, please refer to the instructions for use for the respective device.

2. Create a 3D X-ray scan of the patient. For more information, please refer to the instructions for use for the respective device.

3. Create digital optical impressions of the maxilla or mandible. For more information, please refer to the instructions for use for the respective device.

OPENING A DATA RECORD

1. Import the 3D X-ray scan into the patient database. Information on this can be found in the section *Data import [▶Page 79].*

2. To search for patient records and manage imported data, follow the instructions provided under *Patient records [▶Page 89].*

3. To work with data from patient records, open a patient record in SICAT Endo. Information on this can be found in the section *Opening 3D X-ray scans or planning projects from the patient record summary [▶Page 96].*

TYPICAL DIGITAL ENDODONTIC WORKFLOW

CREATING 3D X-RAY SCAN

IMPORTING AND REGISTERING EXISTING INTRAORAL SCANS

CREATING OPTICAL IMPRESSIONS

OPEN 3D X-RAY SCAN

IMPORTING AND REGISTERING OPTICAL IMPRESSIONS

SETTING ENDOLINES AND PLANNING DRILL CHANNELS

PERFORMING PATIENT INFORMATION AND TREATMENT PLANNING

ORDERING SICAT GUIDE (ENDO)
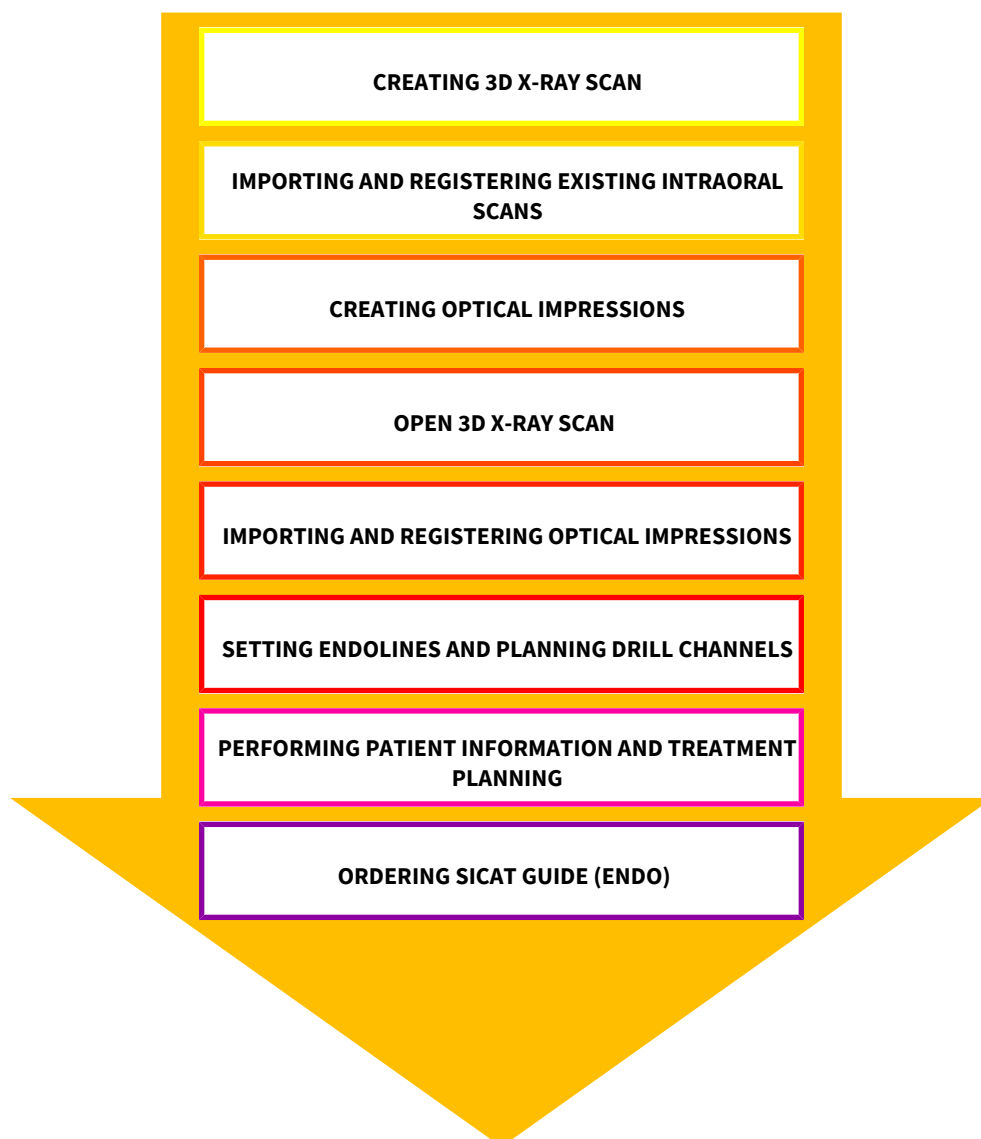
WORK STEPS IN SICAT ENDO

1. If necessary, adjust the volume orientation and panoramic region. Information on this can be found in the section *Adjusting volume orientation and panoramic region [▶Page 150]*.

2. Import and register existing intraoral scans in SICAT Endo. For further information see section *Importing intraoral scans and allocating them to teeth [▶Page 176]* and section *Registering intraoral scan [▶Page 182]*.

3. Import and register the optical impressions with the 3D X-ray data. Information on this can be found in the section *Optical impressions [▶Page 160]*.

4. Set EndoLines and plan drill channels. For further information see *Pre-aligning a tooth region [▶Page 199]*, *Setting EndoLines [▶Page 201]* and *Planning drill channels [▶Page 211]*.

5. Examine the Endo planning objects in the **Radiograph** workspace. Information on this can be found in the section *Overview of the intraoral scan workspace [▶Page 121]*.

6. Inform the patient and create a handout for the patient based on this. Information on this can be found in the section Patient information.

7. Order a SICAT GUIDE (ENDO) surgical guide. Information on this can be found in the section *Ordering process [▶Page 235]*.

8. Export data, for example to obtain a second opinion. Information on this can be found in the section *Data export [▶Page 232]*.

ENDING OR PAUSING WORK ON THE DATA RECORD

- To end or interrupt your work, save it by closing the active patient record. Information on this can be found in the section *Closing SICAT Suite [▶Page 264]*.

INSTRUCTIONS FOR USE AND SUPPORT

The instructions for use can be found in the **SICAT Suite Help** window. Information on this can be found in the section *Opening the instructions for use [▶Page 55]*.

Further support is available in the **Support** area. Information on this can be found in the section *Support [▶Page 258]*.

15 STARTING SICAT SUITE

To start SICAT Suite, proceed as follows:

☑ SICAT Suite has already been successfully installed. Information on this can be found in the section *Installing SICAT Suite [▶Page 37]*.

■ If a desktop shortcut was created during installation, click on the **SICAT Suite** icon on the Windows desktop.

▶ SICAT Suite starts and the **SICAT Suite Home** window opens. Information on this can be found in the section *Overview of the "SICAT Suite Home" window. [▶Page 52]*.

You can also start SICAT Suite by pressing the **Windows** key, entering **SICAT Suite** and clicking on the **SICAT Suite** icon.
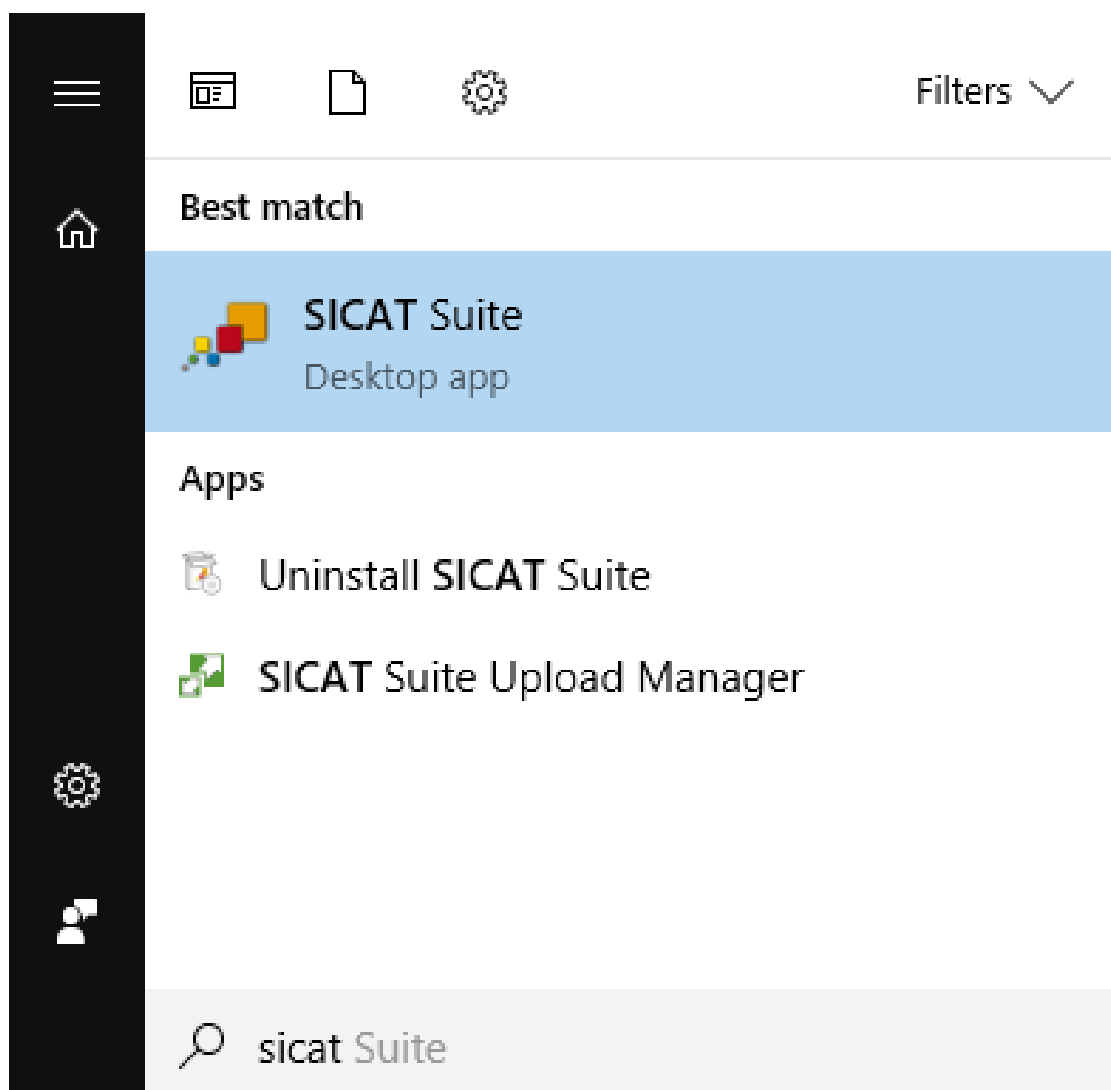
16 THE USER INTERFACE OF SICAT SUITE

The SICAT Suite user interface comprises the following parts:
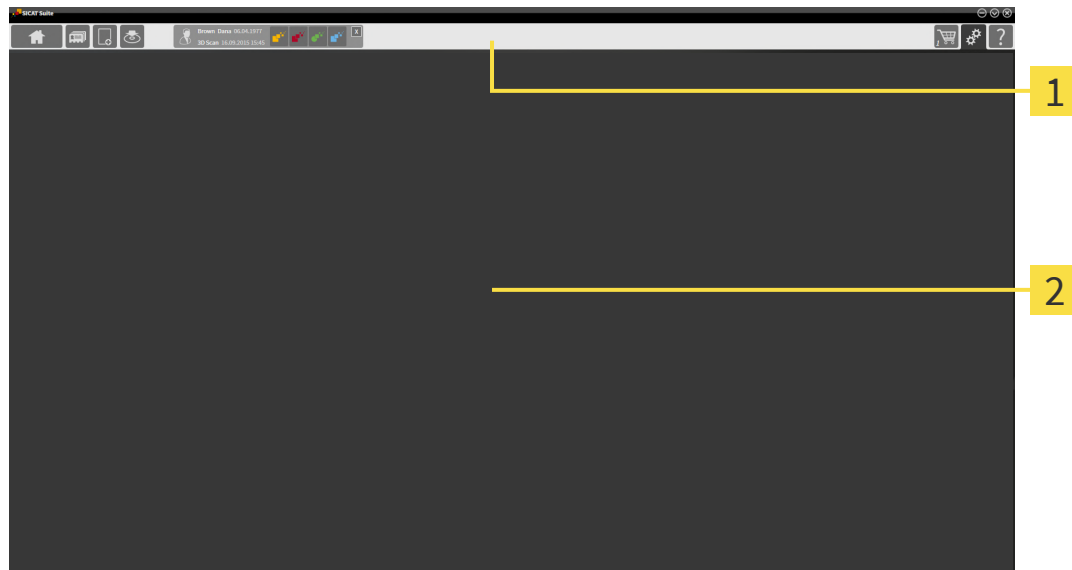
1 Navigation bar

2 Application area

- The navigation bar at the upper end of SICAT Suite shows tabs to switch between different windows and applications.

- The **Application area**, which is located in the remaining part of SICAT Suite, shows the user interface of the active SICAT application.

The **Navigation bar** is comprised of three different sections. The section on the left side and the section on the right side are always visible. SICAT Suite shows the section in the center only if a patient record is activated.

The section on the left side contains the following tabs:

- **SICAT Suite Home** - Information on this can be found in the section *Overview of the "SICAT Suite Home" window.* [▶Page 52].

- **Patient records** - Information on this can be found in the section *Patient records* [▶Page 89].

- **Add new data** - Information on this can be found in the section *Data import* [▶Page 79].

- **Export data** - Information on this can be found in the section *Data export* [▶Page 232].

The section in the middle contains the following tabs:

■ **Manage patient records** - Information on this can be found in the section *Working with patient records [▶Page 93]*.

■ **Applications** - Information on this can be found in the section *Switching between SICAT applications [▶Page 54]*.

The section on the right side contains the following tabs:

■ **Shopping Cart** - Information on this can be found in the section *Ordering process [▶Page 235]*.

■ **Settings** - Information on this can be found in the section *Settings [▶Page 248]*.

■ **Support** - Information on this can be found in the section *Support [▶Page 258]*.

16.1 OVERVIEW OF THE "SICAT SUITE HOME" WINDOW.

The **SICAT Suite Home** window will greet you when you start the stand-alone version of SICAT Suite:
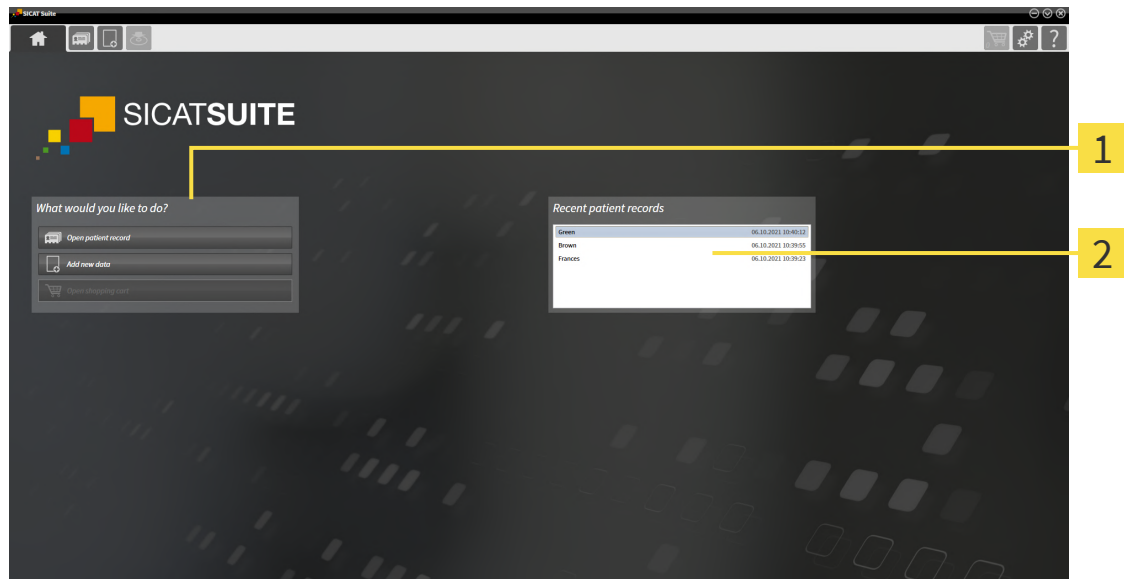
1 **What would you like to do** area

2 **Recent patient records** area

You can return to this window at any time by clicking the **SICAT Suite Home** icon. The content of the **SICAT Suite Home** window depends on the following parameters:

- Activation status and type of licenses

- Connection to the patient database

To be able to work with SICAT Suite, you have to set up a connection to a patient database. Information on this can be found in the section *Patient database [*▶*Page 67]*.

If no license is activated, the **SICAT Suite Home** window will only show a message and the **Activate license** button.

If the Viewer license of at least one SICAT application is activated, but no full version license of a SICAT application is activated, SICAT Suite will run in Viewer mode. In this mode, the functions for editing and saving patient data are not available.

If a full version license is activated and a connection to a patient database has been created and activated in SICAT Suite, the following buttons are available in the **SICAT Suite Home** window in the section **What would you like to do**:

- **Open** - Information on this can be found in the section *Patient records [▶Page 89]*.

- **Add new data** - Information on this can be found in the section *Data import [▶Page 79]*.

- **Shopping Cart** - Information on this can be found in the section *Ordering process [▶Page 235]*.

- In addition, the **Recent patient records** section will display a list of the most recently opened patient records. You can double-click on these patient records to switch to the **Patient record browser** window and show the patient record.

> If the **Display patient information anonymously** setting is active, the **SICAT Suite Home** window will hide the **Recent patient records** area.

See also

▶ Data export [▶ 232]

17 SWITCHING BETWEEN SICAT APPLICATIONS

To switch between SICAT applications, proceed as follows:

- ■ Click on the button with the label matching the desired SICAT application in the **Navigation bar**.

▶ SICAT Suite will switch to the selected application.

18 OPENING THE INSTRUCTIONS FOR USE

The instructions for use for SICAT applications are available in the **SICAT Suite Help** window in the form of PDF files.

?

You can open the **SICAT Suite Help** window by clicking on the **Support** icon in the **Navigation bar** or pressing the F1 key.

The **SICAT Suite Help** window looks as follows:
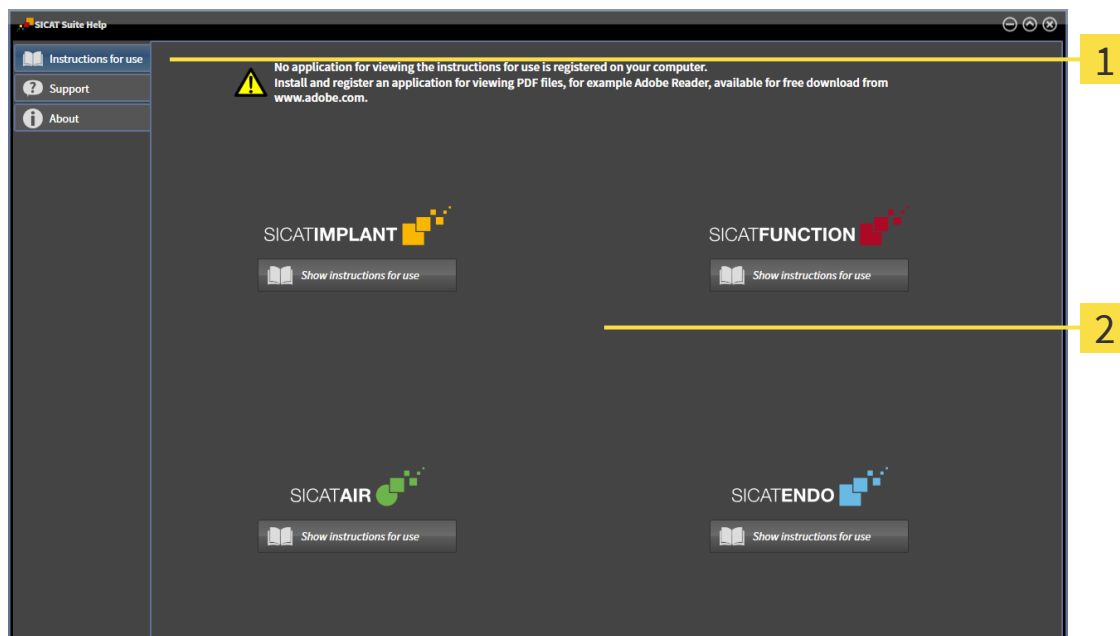
1 **Instructions for use** tab

2 **Instructions for use** window

You can open the instructions for use by clicking on the **Instructions for use** tab and then clicking on the desired **Show instructions for use** button.

19 LICENSES

SICAT Suite shows only SICAT applications for which you have activated a license.

i	If the **Add new data** or **View new data** functions are available in SICAT Suite based on activated licenses, you can view previously exported data records even without an activated SICAT Endo license.

i	To be able to use network licenses, you must first set up a license server in the local practice network and connect SICAT Suite with the license server.

i	For information on how to set up a license server in a practice network, please refer to the instructions for use of the CodeMeter license management software by WIBU-SYSTEMS AG and the quick guide *Installing the SICAT Suite version 2.0 license server.*

The following license types exist:

- A Viewer license, through which you can use an application in Viewer mode for an unlimited period of time.

- A demo license, through which you will receive temporary access to the full version of one or more SICAT applications.

- A full version license, through which you will receive access to the full version of one or more SICAT applications for an unlimited period of time.

These licenses can be obtained both as workstation licenses and as network licenses:

- With a workstation license, you can use the SICAT applications on a specific computer.

- With a network license, you can use the SICAT applications on several computers within a local practice network.

ACQUIRING LICENSES

The following steps are required to acquire a license for SICAT applications or individual functions:

- You contact your local sales partner.

- You receive a voucher code.

- Using the voucher code, you generate a license key on the SICAT portal (which can be accessed via SICAT home page).

- SICAT adds the license key to your activation key.

- You use your activation key to activate SICAT applications or individual functions in SICAT Suite. Workstation licenses are activated in SICAT Suite and network licenses are activated on the license server in the local practice network.

i	If subscriptions to the Suite products are available in your country, you can obtain separate information on how to set them up and use them.

ACTIVATING AND DEACTIVATING LICENSES

The following applies to workstation licenses and network licenses:

- You will only receive license keys for SICAT applications that are approved in your country.

- If you activate a full version license, you will automatically receive Viewer licenses for all applications that are approved in your country.

- If you return a full version license for a SICAT application, you will automatically receive a Viewer license provided the application is approved in your country.

The following applies to workstation licenses only:

- When you activate an activation key for a workstation license on a computer, an included license will be tied to the computer and is no longer available for activation on another computer. An activation key can contain several licenses for SICAT applications or functions.

- You may deactivate workstation licenses for each SICAT application or individual function separately. Returned workstation licenses are available for renewed activation on the same or another computer.

The following applies to network licenses only:

- If you use network licenses, a network license for included SICAT applications or functions will be available to a user on a computer while using SICAT Suite. The network license will be locked for use by other users during this time.

- If you are using a network license, the network license will be automatically returned to the license server in the practice network when you exit SICAT Suite.

- If you switch from a network license to a workstation license, the network license will be automatically returned to the license server in the practice network.

- If you fail to properly exit SICAT Suite and this causes the connection to the license server in the practice network to be terminated, use of the network license by other users will automatically be enabled after a set period of time.

FURTHER ACTIONS

The **Licenses** window gives an overview of the licenses which are activated on your computer. If you are using a demo license, SICAT Suite will display the expiry date of the licenses. Information on this can be found in the section *Opening the "Licenses" window [▶Page 59]*.

You can activate workstation licenses in two ways:

- If the computer on which SICAT Suite is running has an active Internet connection, the license can be activated automatically. Information on this can be found in the section *Activating workstation licenses using an active Internet connection [▶Page 60]*.

- Upon request or if the computer on which SICAT Suite is running has no active Internet connection, the license can be activated manually using the license request files. You have to upload such license request files on the SICAT website. In return, you will receive a license activation file, which you have to activate in SICAT Suite. Information on this can be found in the section *Activating workstation licenses manually or without an active Internet connection [▶Page 62]*.

You can deactivate workstation licenses for each application or function individually. After you have deactivated a workstation license, you can enter the same or another activation key. Returned workstation licenses are available for activation on the same or another computer. Information on this can be found in the section *Returning workstation licenses to the license pool [▶Page 64]*.

For information on how to activate network licenses, see *Activating network licenses [▶Page 65]*.

19.1 OPENING THE "LICENSES" WINDOW

1. Click on the **Settings** icon in the **Navigation bar**.

   ► The **Settings** window opens.

2. Click the **Licenses** tab.

   ► The **Licenses** window opens:
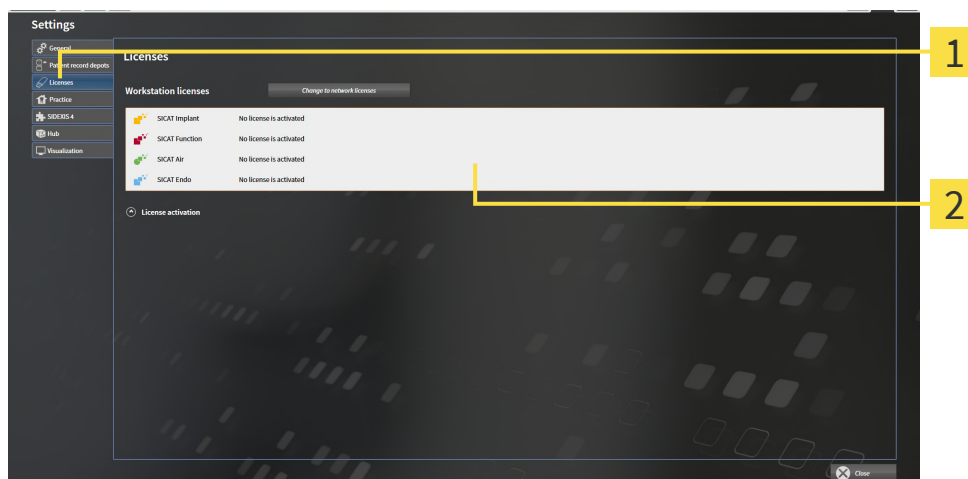
1 **Licenses** tab

2 **Licenses** window

Continue with one of the following actions:

- *Activating workstation licenses using an active Internet connection [►Page 60]*

- *Activating workstation licenses manually or without an active Internet connection [►Page 62]*

- *Activating network licenses [►Page 65]*

- *Returning workstation licenses to the license pool [►Page 64]*

19.2 ACTIVATING WORKSTATION LICENSES USING AN ACTIVE INTERNET CONNECTION

NOTICE	**Patient record must be closed**
	You must close the active patient record before making changes to the licenses.

NOTICE	**Shopping cart must be empty**
	The shopping cart must be empty before you can make any changes to the licenses.

To start the activation process, proceed as follows:

☑ At least one SICAT application or one individual function is missing an active workstation license.

☑ The computer on which SICAT Suite is running has an active Internet connection.

☑ The **Licenses** window is already open. Information on this can be found in the section *Opening the "Licenses" window [*▶*Page 59]*.

1. Click the **License activation** button in the **Licenses** window.

   ▶ The **License activation** area expands:
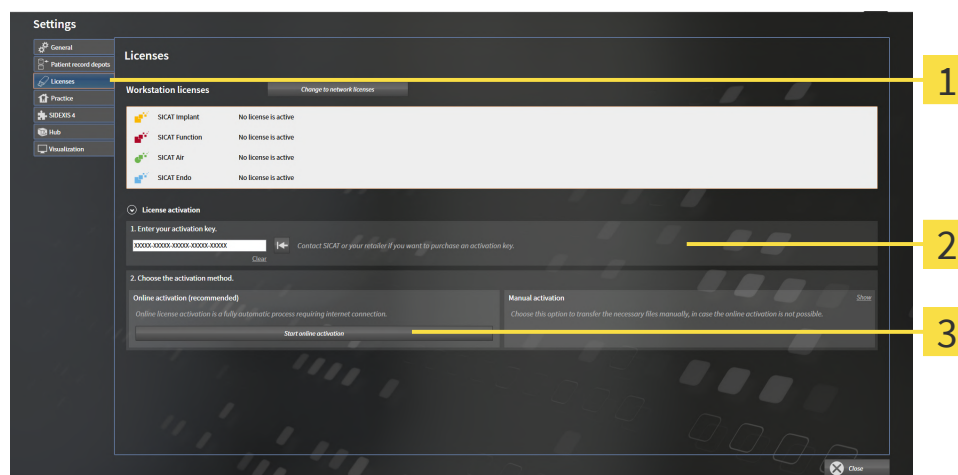
1	**License activation** button

2	**Enter your activation key** area

3	**Start online activation** button

2. Enter your activation key in the **Enter your activation key** field.

3. Click on the **Start online activation** button.

4. If a **Windows Firewall** window opens, allow SICAT Suite to access the Internet.

▶ Licenses acquired for installed applications or individual functions are removed from your license pool and activated in SICAT Suite on the current computer.

▶ The message window opens and shows the following message: **License was successfully activated**.

> ℹ️ To activate a SICAT application again, you can use your customer activation key by clicking on the **Use my customer activation key** button in the **Enter your activation key** area. To clear the field with the current license key, you can click on the **Clear** button.

19.3 ACTIVATING WORKSTATION LICENSES MANUALLY OR WITHOUT AN ACTIVE INTERNET CONNECTION

NOTICE	**Patient record must be closed**
	You must close the active patient record before making changes to the licenses.

NOTICE	**Shopping cart must be empty**
	The shopping cart must be empty before you can make any changes to the licenses.

To activate licenses manually or without an active Internet connection, proceed as follows:

☑ At least one SICAT application or one individual function is missing an active workstation license.

☑ The **Licenses** window is already open. Information on this can be found in the section *Opening the "Licenses" window [▶Page 59]*.

1. Click on **License activation** in the **Licenses** window.

   ▶ The **License activation** area expands.

2. Click on **Show** in the **Manual activation** area.

   ▶ The **Manual activation** area expands:
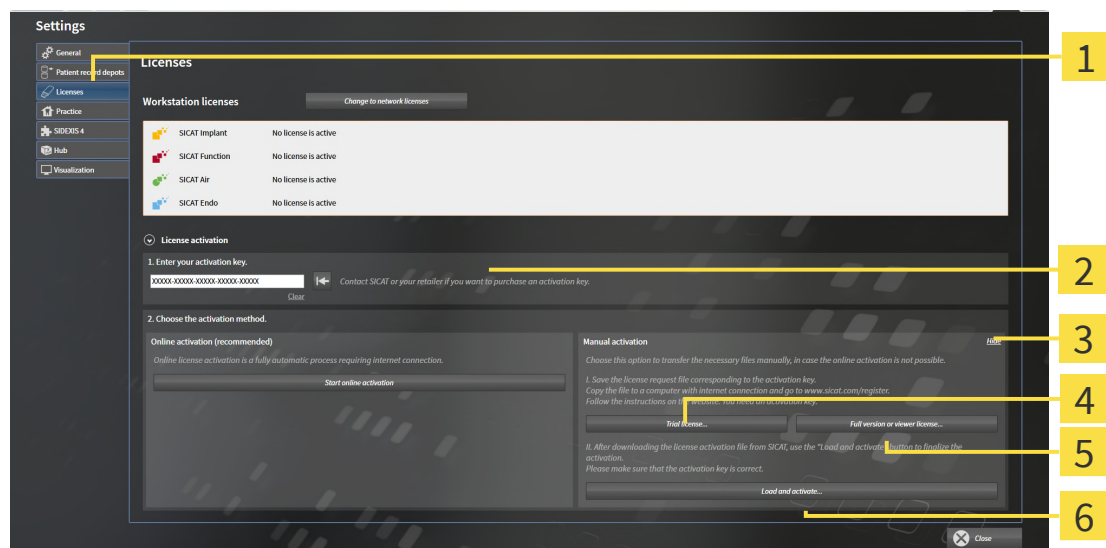
1	**License activation**	**4**	**Trial license** button
2	**Enter your activation key** area	**5**	**Full version or viewer license** button
3	**Show**	**6**	**Load and activate** button

3. If you wish to activate a full version license, click on the **Full version or viewer license** button.

4. If you wish to activate a demo license, click on the **Trial license** button.

   ▶ A Windows Explorer window opens.

5. Select the desired folder for the license request file and click **OK**.

▶ A license request file with the **WibuCmRaC** file extension is generated and saved in the selected folder.

6. Copy the license request file on a computer with an active Internet connection, for example using a USB stick.

7. Open a web browser on the computer with the active Internet connection and open the http://www.sicat.com/register web page.

8. Follow the instructions on the activation page.

▶ Licenses acquired for installed applications or individual functions are removed from your license pool.

▶ The SICAT license server generates a license activation file with the **WibuCmRaU** file extension which you need to download onto your computer.

9. Copy the downloaded license activation file onto the computer on which SICAT Suite is running.

10. Check that the correct key is in the **Enter your activation key** field.

11. Click the **Load and activate** button in the **Licenses** window.

▶ A Windows Explorer window opens.

12. Browse to find the license activation file, select it and click **OK**.

▶ The license in the license activation file is installed on the current computer.

▶ The message window opens and shows the following message: **License was successfully activated**.

19.4 RETURNING WORKSTATION LICENSES TO THE LICENSE POOL

NOTICE	**Patient record must be closed**
	You must close the active patient record before making changes to the licenses.

NOTICE	**Shopping cart must be empty**
	The shopping cart must be empty before you can make any changes to the licenses.

To deactivate a full version license and return it to the license pool, proceed as follows:

☑ You have already activated the full version license of a SICAT application.

☑ The computer on which SICAT Suite is running has an active Internet connection.

☑ The **Licenses** window is already open. Information on this can be found in the section *Opening the "Licenses" window [*▶*Page 59]*.
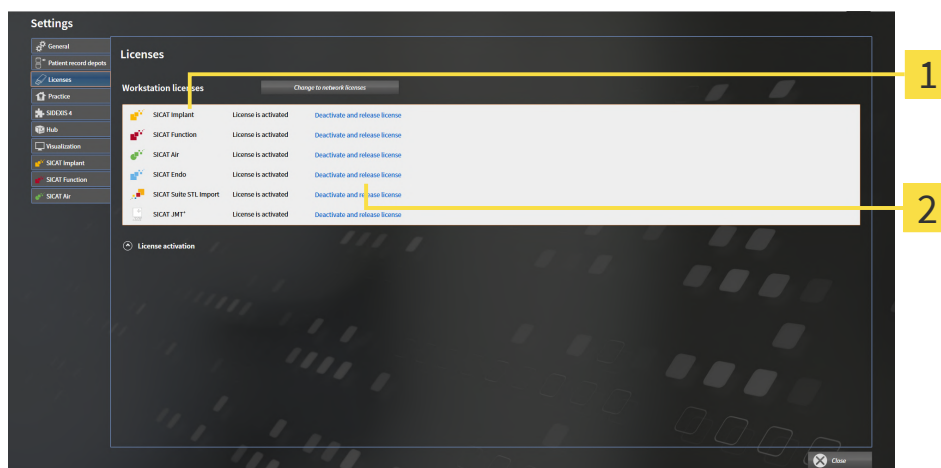
1 License status of SICAT applications and individual functions

2 **Deactivate and release license** button

- In the **Licenses** window, click on the **Deactivate and release license** button in the row of the desired SICAT application or individual function.

▶ The selected license is returned to your license pool and will be ready for activation again.

▶ The message window opens and shows the following message: **License was successfully returned to the license pool**.

▶ Without a license, an application will only be available in Viewer mode. If the licenses for all SICAT applications have been returned to your license pool, SICAT Suite will switch entirely to Viewer mode.

	If you wish to deactivate a license on a computer without an active Internet connection, please contact SICAT support.

19.5 ACTIVATING NETWORK LICENSES

NOTICE	**Patient record must be closed**
	You must close the active patient record before making changes to the licenses.

NOTICE	**Shopping cart must be empty**
	The shopping cart must be empty before you can make any changes to the licenses.

To start the activation process, proceed as follows:

☑ At least one SICAT application or one individual function is missing an active network license.

☑ You have set up a license server.

☑ The computer on which SICAT Suite is running has an active network connection to the network in which the license server is located.

☑ The **Licenses** window is already open. Information on this can be found in the section *Opening the "Licenses" window [*▶*Page 59]*.

1. Click the **Change to network licenses** button in the **Licenses** window.

   ▶ SICAT Endo shows information about the network licenses and the **License Server** area opens:
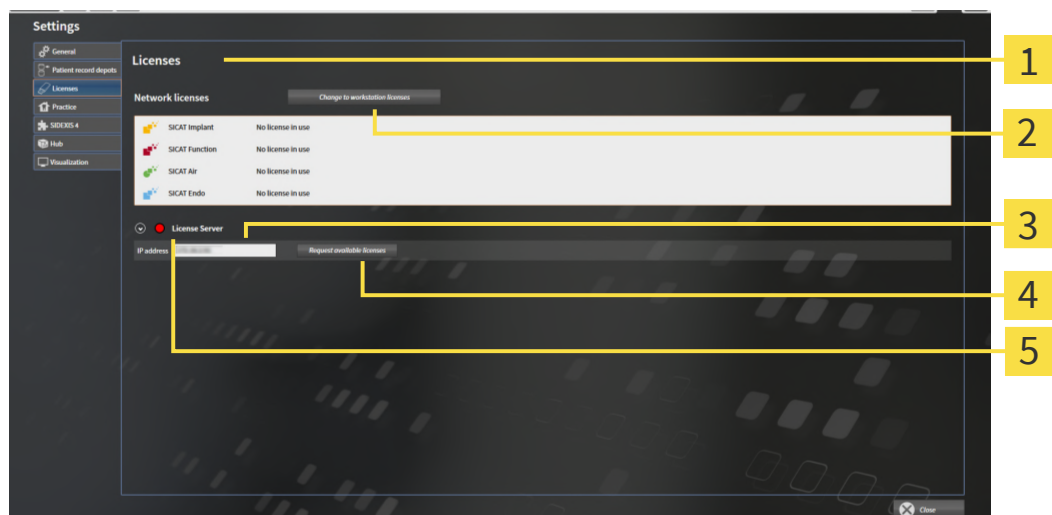
1	**Licenses** window	4	**Request available licenses** button
2	**Change to workstation licenses** button	5	Status indicator
3	**IP address** area		

2. In the **IP address** area, enter the IP address of the license server in the practice network.

3. Click on the **Request available licenses** button.

▶ SICAT Suite connects to the license server.

▶ Licenses acquired for installed applications or individual functions will be removed from your license pool and used in SICAT Suite on the current computer.

▶ The status indicator changes from red to green.

▶ The **License Server** area is collapsed.

▶ SICAT Suite connects to the license server.

20 PATIENT DATABASE

BACKUP

> ⚠️
> **CAUTION**
>
> **The absence of a backup mechanism for the Patient Record Depots could result in patient data being irreversibly lost.**
>
> Make sure that a regular data backup is created of all Patient Record Depots.

Depending on the selected installation type, the patient data is stored locally or server-based in the SICAT Suite Patient Database. You yourself are responsible for backing up the patient data.

> ℹ️
>
> You should also back up the user settings of the SICAT applications in addition to the patient data. You can find the user settings for each user in two directories separately. You can open the directories by entering **%appdata%\SICAT GmbH & Co. KG** and **%localappdata%\SICAT GmbH & Co. KG** into the address bar of Windows Explorer.

DATA SECURITY

> ⚠️
> **CAUTION**
>
> **Saving SICAT application data in an unreliable or incompatible network file system could result in data loss**
>
> Together with your network administrator, make that SICAT application data can be safely stored in the desired network file system.

> ⚠️
> **CAUTION**
>
> **The shared use of SICAT Suite and the SICAT applications contained therein with other devices within a computer network or a storage area network could result in previously unknown risks for patients, users and other persons.**
>
> Ensure that rules are compiled within your organization to determine, analyze and assess risks in relation to your network.

> ⚠️
> **CAUTION**
>
> **Changes to your network environment may result in new risks for your network environment. Examples include changes to your network configuration, the connection of additional devices or components to your network, the disconnection of devices or components from your network and the updating or upgrading of network devices or components.**
>
> Perform a network risk analysis after any changes to the network.

GENERAL INFORMATION

> ℹ️
>
> The full range of management functions for patient databases is only available if an application license is activated in SICAT Suite.

> **i** Starting with version 2.0.40 of SICAT Suite, the former Patient Record Depot must be relocated to the SICAT Suite Patient Database if you want to continue using the existing data. You can relocate the data of a Patient Record Depot to a patient database when you set up the connection to a patient database. You can find information on how to relocate a Patient Record Depot to the SICAT Suite Patient Database in the corresponding separate quick guide.

SICAT Suite manages patient data as follows:

- All 3D scans for a patient and all corresponding planning projects are organized in patient records.

- Patient records are stored locally or on a server in the SICAT Suite Patient Database.

SICAT Suite requires at least a connection to one patient database to run in the full version. Several connections to patient databases can be managed. However, only one patient database can be active at one time.

Performing certain actions will lock the patient records and, while locked, they are only available for viewing by other users in a network environment with server-based patient data management. Information on this can be found in the section *Patient records [▶Page 89]*.

> **i** In case of server-based patient data management a network connection with a certain minimum bandwidth is required. Information on this can be found in the section *System requirements [▶Page 10]*.

The following actions are available for setting up connections to a patient database:

- *Opening the "Patient database" window [▶Page 69]*

- *Adding a connection to a patient database [▶Page 70]*

- *Activating another patient database [▶Page 75]*

- *Removing a connection to a patient database [▶Page 76]*

20.1 OPENING THE "PATIENT DATABASE" WINDOW

To open the **Patient Database** window, proceed as follows:

1. Click on the **Navigation bar** icon in the **Settings**.

   ► The **Settings** window opens.

2. Click on the **Patient Database** tab.

   ► The **Patient Database** window opens:
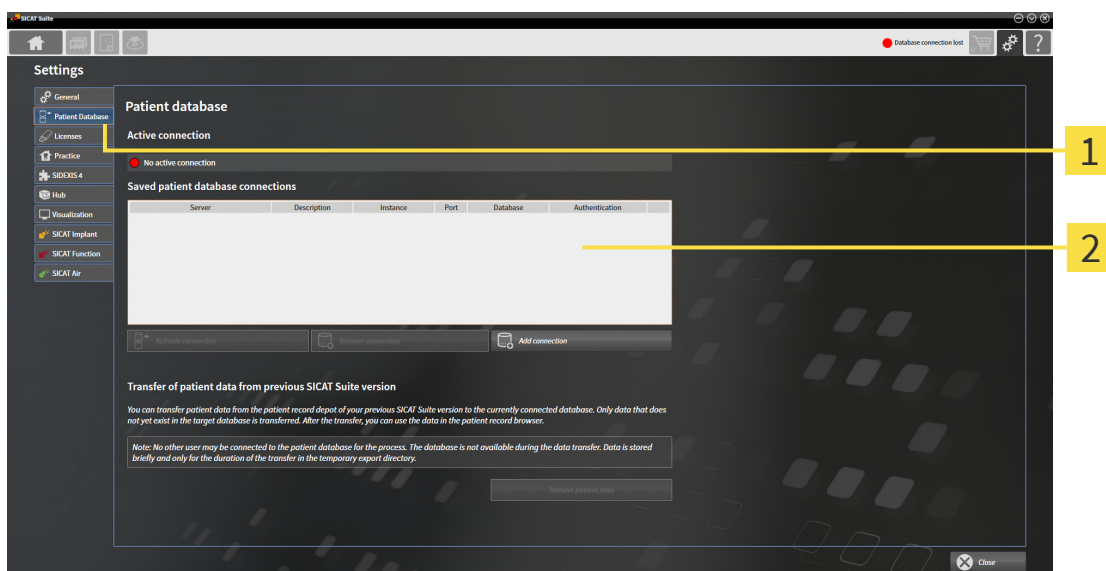
1 **Patient Database** tab

2 **Saved patient database connections** list

Continue with one of the following actions:

20.2 ADDING A CONNECTION TO A PATIENT DATABASE

To be able to use the patient database, you have to establish a connection to the SICAT Suite Patient Database. A local connection for a single workstation or a connection to a server for a workstation computer in a network can be added.

If SICAT Suite with local patient data management has been installed, the connection to the local patient database is already set up and activated.

To add the connection to a patient database, proceed as follows:

☑ The SICAT Suite Patient Database is installed locally or on a server. Information on this can be found in the section *Installing the SICAT Suite Patient Database [▶Page 28]*.

☑ The **Patient Database** window is already open.
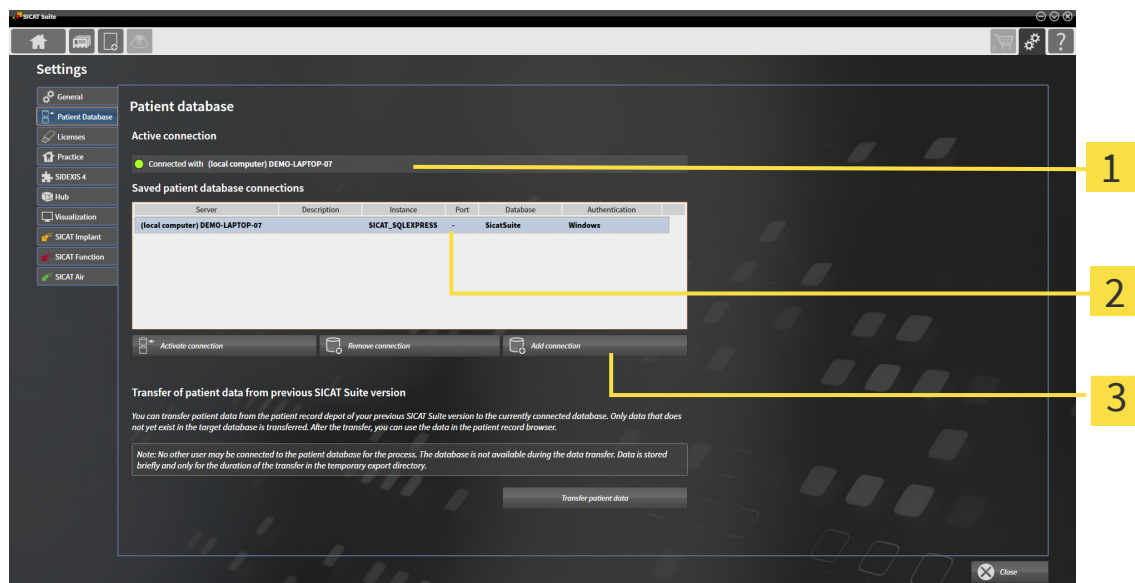
1 Active connection   **3** **Add connection** button

2 **Saved patient database connections** list

1. Click on the **Add connection** button in the **Patient Database** window.
   ► The **Add connection to patient database** window opens:
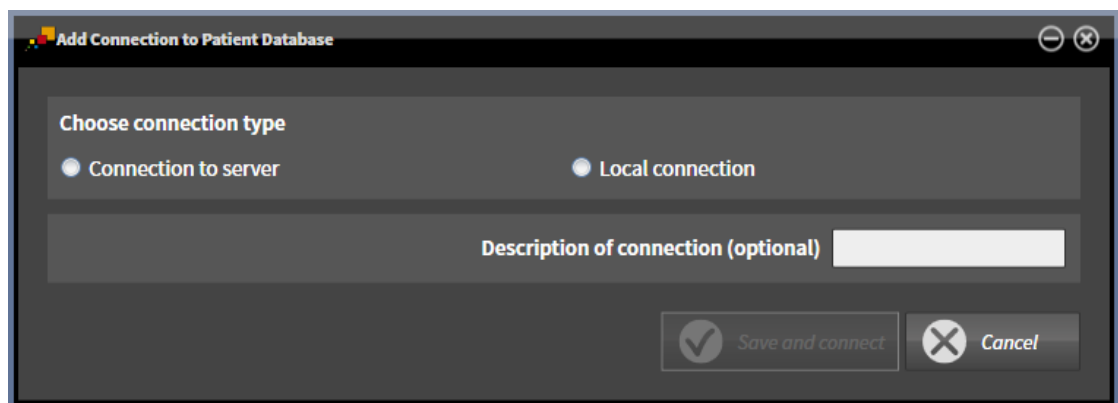
2. Select the type of connection according to the type of installation.

The following options are available for adding a connection:

- *Adding a local connection [▶Page 72]*

- *Adding a connection to a server [▶Page 73]*

20.2.1 ADDING A LOCAL CONNECTION

To establish a local connection to the SICAT Suite Patient Database for a single workstation, proceed as follows:

☑ The SICAT Suite Patient Database is installed locally on the single workstation *Installation with local patient data management as a single-user installation [▶Page 29]*.
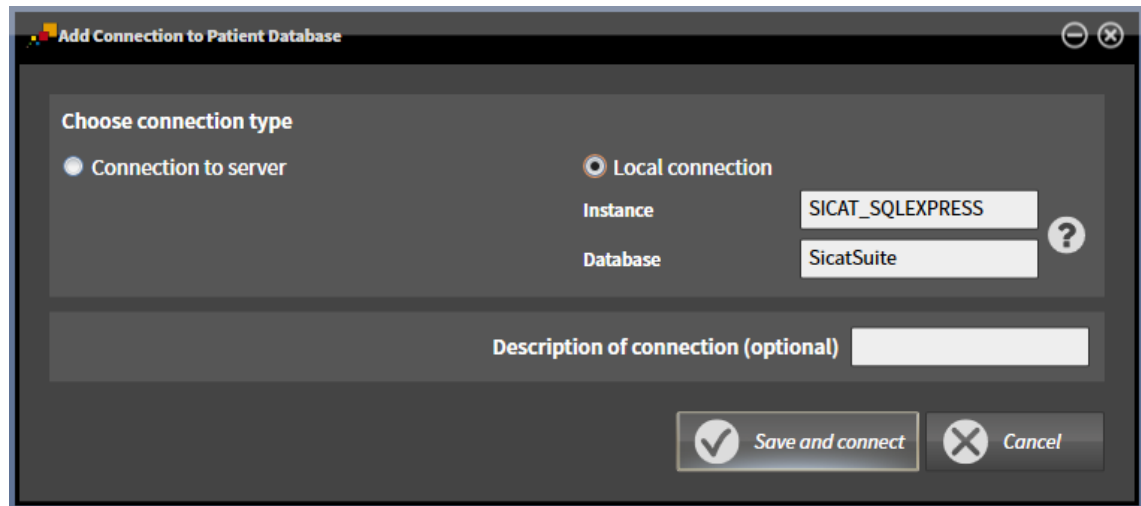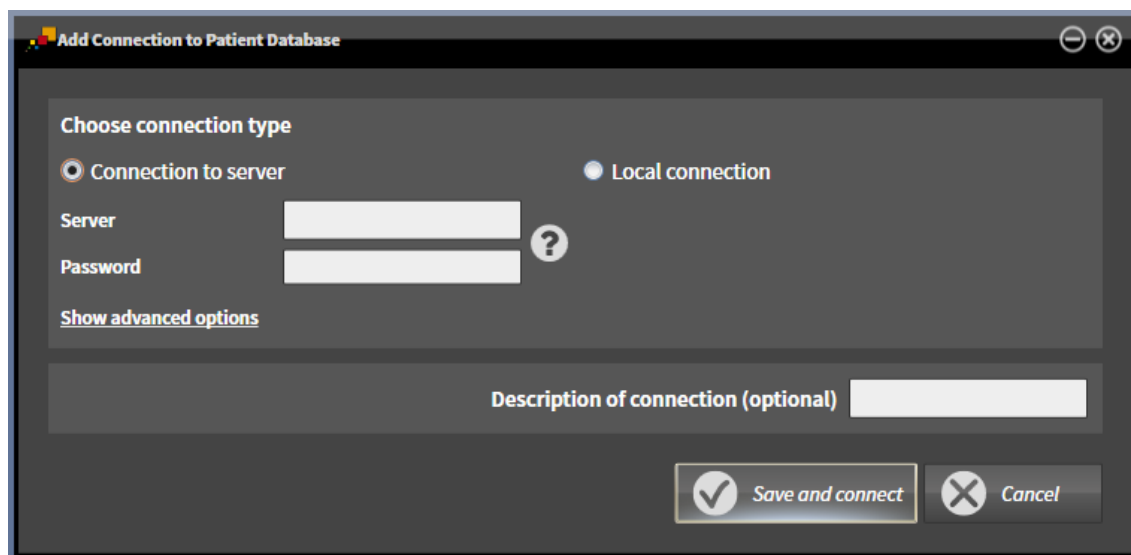
1. In the window **Add connection to patient database**, select the check box **Local connection**.

   ► The connection details are displayed.

   ► The input fields are pre-populated with default values that are used during installation.

2. If you have assigned different names when installing SICAT Suite Patient Database, type the assigned names in the **Instance** and **Database** input fields.

3. Choose a name for the connection and type the name in the input field **Description of connection (optional)** so that you can uniquely identify the connection in case you later use several patient databases and switch back and forth between them.

4. Click on the **Save and connect** button.

   ► The connection is added.

   ► If another connection was previously activated, the confirmation message **Activate Connection to Patient Database** opens.

5. Click the **Activate connection** button in the confirmation message.

   ► The new connection is activated.

   ► In the **Patient Database** window, the added connection is shown in bold in the **Saved patient database connections** section.

► SICAT Suite is connected to a local patient database. The active connection is shown in the section **Active connection**.

20.2.2 ADDING A CONNECTION TO A SERVER
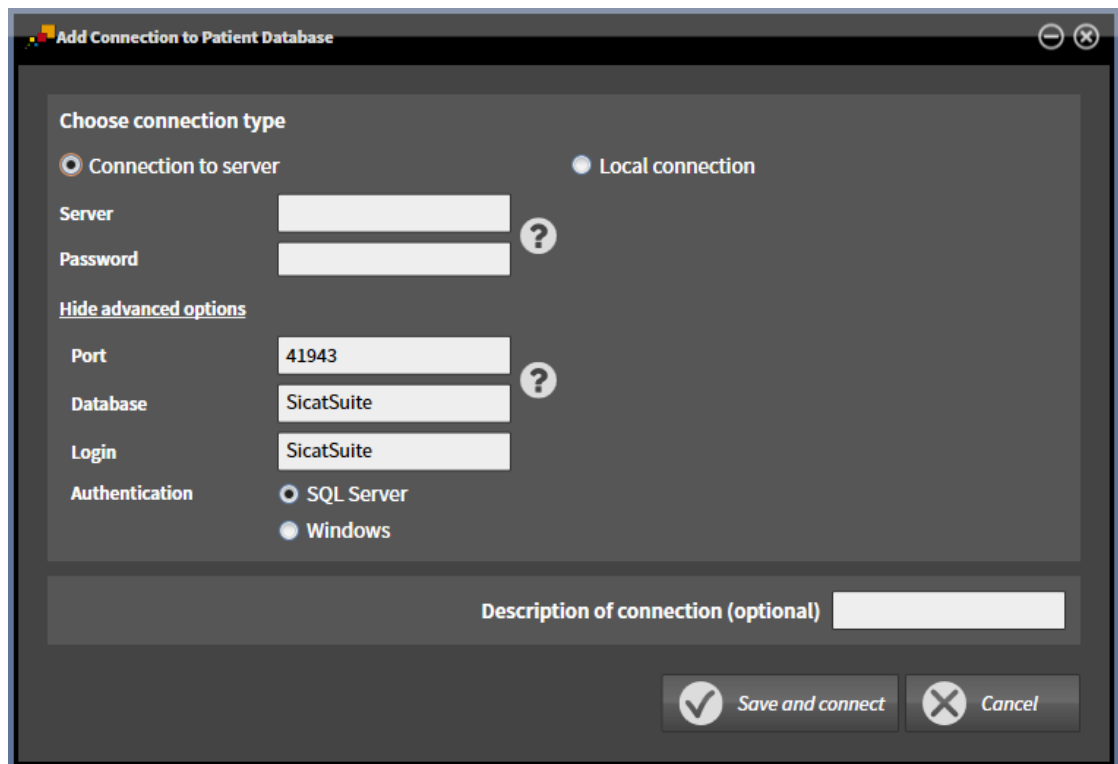
To establish a connection to the SICAT Suite Patient Database on a server for a workstation computer, proceed as follows:

☑ The SICAT Suite Patient Database is installed on a server in the network *Installation with server-based patient data management as server installation [*▶*Page 32]*.

☑ There is network connectivity for the workstation computer and the server.

1. In the window **Add connection to patient database**, select the check box **Connection to server**.

   ▶ The server connection details are displayed.

2. Type the name of the server shown during installation and your chosen password in the **Server** and **Password** input fields.

3. If you have changed default values during installation, click on the **Show advanced options** button.

► The advanced options are displayed:

4. Type the parameters you used during installation in the input fields.

5. Click on the **Save and connect** button.

   ► The connection is added.

   ► If another connection was previously activated, the confirmation message **Activate Connection to Patient Database** opens.

6. Click the **Activate connection** button in the confirmation message.

   ► The new connection is activated.

   ► In the **Patient Database** window, the added connection is shown in bold in the **Saved patient database connections** section. For other connections, the font style changes to normal.

► SICAT Suite is connected to a patient database on a server. The active connection is shown in the section **Active connection**.

20.3 ACTIVATING ANOTHER PATIENT DATABASE

> **i**
>
> It may be helpful to change the active connection to a patient database, such as in the following cases:
>
> - You want to switch between a patient database in your practice's network and a local patient database on your notebook.
>
> - You want to display patient data in public, which has been stored anonymously in another patient database, for example for training purposes.

To activate another patient database, proceed as follows:

☑ The SICAT Suite Patient Database is installed locally or on a server.

☑ The desired connection has already been added to a patient database. Information on this can be found in the section *Adding a connection to a patient database [▶Page 70]*.

☑ The **Patient Database** window is already open.
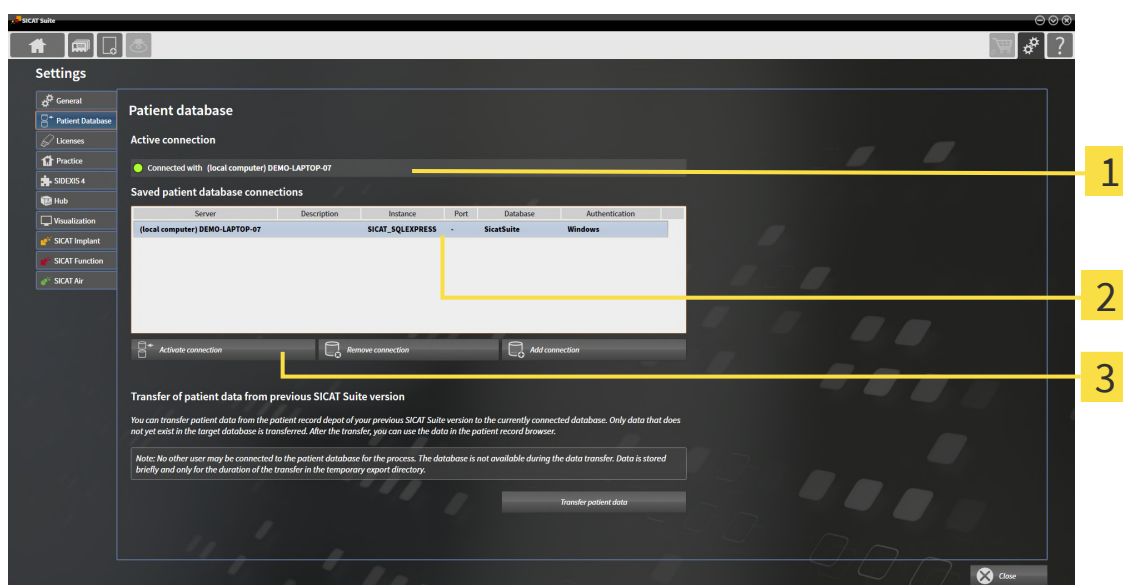
1 Active connection   **3** **Activate connection** button

2 **Saved patient database connections** list

1. In the section **Saved patient database connections** of the **Patient Database** window, click on the row with the desired patient database in the list.

2. Click on the **Activate connection** button.

   ► If another connection was previously activated, the confirmation message **Activate Connection to Patient Database** opens.

3. Click the **Activate connection** button in the confirmation message.

   ► The selected connection is activated.

   ► In the **Patient Database** window, the added connection is shown in bold in the **Saved patient database connections** section. For other connections, the font style changes to normal.

► SICAT Suite activates the selected patient database. The active connection is shown in the section **Active connection**.

20.4 REMOVING A CONNECTION TO A PATIENT DATABASE

> **i** SICAT Suite only removes a patient database from the connection list **Saved patient database connections**. It does not delete any patient databases. You can add a connection to a patient database again. Information on this can be found in the section *Adding a connection to a patient database [▶Page 70]*.

To remove a patient database from the connection list **Saved patient database connections**, proceed as follows:

☑ The SICAT Suite Patient Database is installed locally or on a server.

☑ At least one connection to a patient database is shown in the section **Saved patient database connections**.

☑ The **Patient Database** window is already open.

1 Active connection

2 **Saved patient database connections** list

3 **Remove connection** button

1. In the section **Saved patient database connections** of the **Patient Database** window, click on the row with the desired patient database in the list.

2. Click on the **Remove connection** button.

▶ SICAT Suite removes the selected patient database in the section **Saved patient database connections** from the list.

20.5 TRANSFERRING PATIENT RECORDS FROM SICAT SUITE, VERSION 2.0.20 OR OLDER

In earlier versions of SICAT Suite, the patient records are stored in the file system of the workstation computer or on the network. If you want to continue using patient data of older versions, you have to relocate them to the SICAT Suite Patient Database. During the relocation, only those patient data are transferred that do not already exist in the patient database.

To transfer the patient data from a previous SICAT Suite version to a patient database, proceed as follows:

☑ The SICAT Suite Patient Database is installed locally or on a server.

☑ A connection to a patient database has been added and is active. Information on this can be found in the section *Adding a connection to a patient database [▶Page 70]*.

☑ No other user is connected to the active patient database.

☑ The **Patient Database** window is already open.
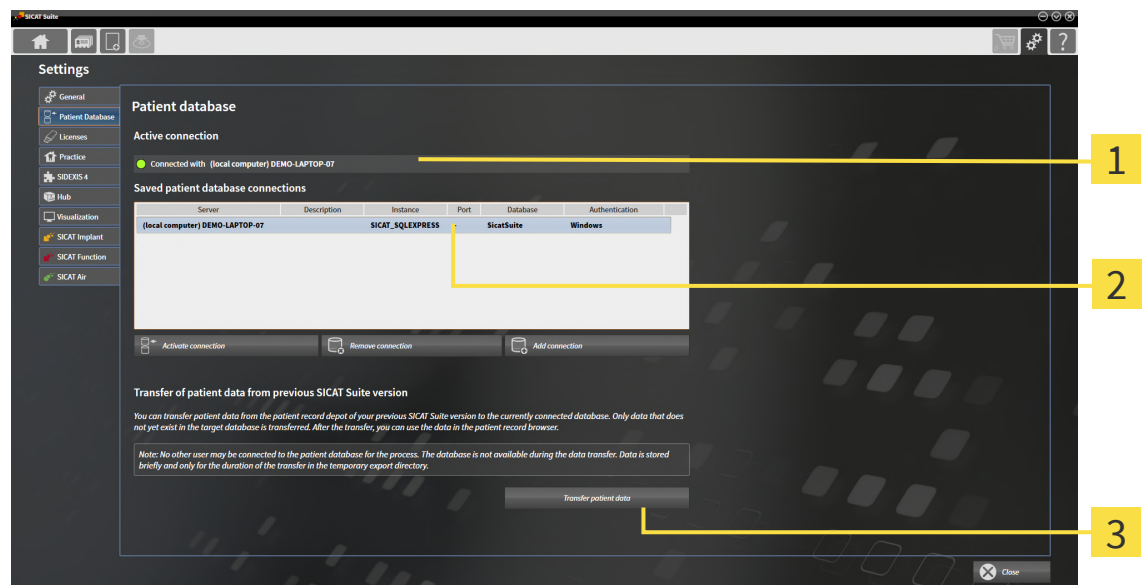
1	Active connection	**3**	**Transfer patient data** button
2	**Saved patient database connections** list		

1. If you are using several patient databases, activate the desired patient database to which you want to transfer the Patient Record Depot of a previous SICAT Suite version. Information on this can be found in the section *Activating another patient database [▶Page 75]*.

2. Click the **Transfer patient data** button in the **Patient Database** window.

▶ The **Transfer Patient Data** window opens:
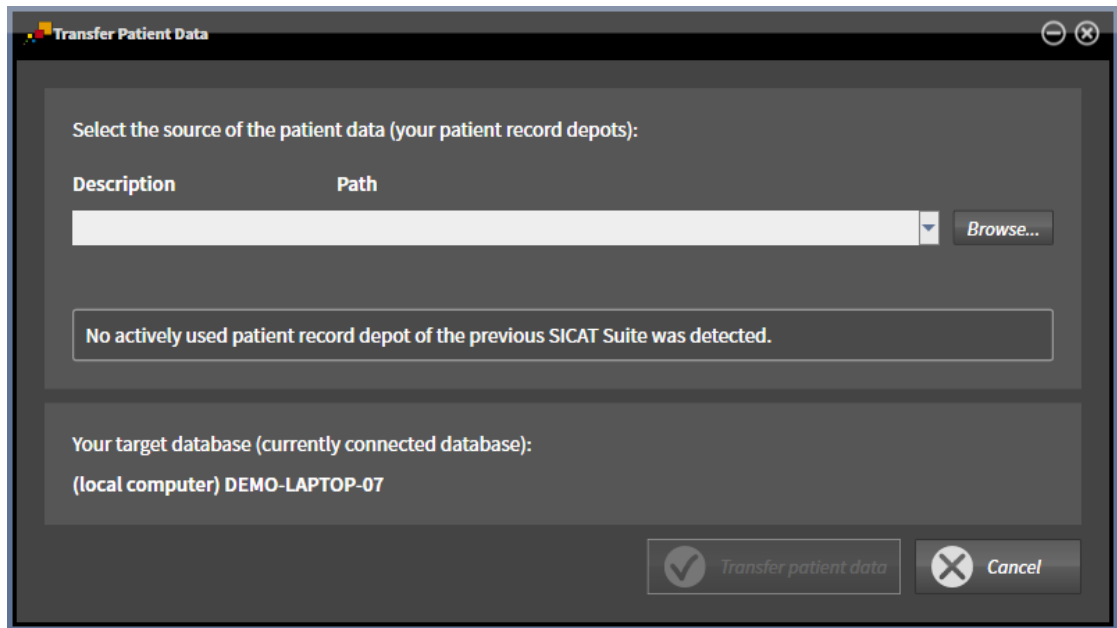
3. Click on the **Browse** button.

   ▶ The **Select folder** window opens.

4. Browse to the desired folder in which your Patient Record Depot is located.

5. Select the desired file an click on **Open**.

   ▶ The path to the selected file is displayed in the **Description** field.

6. Click on the **Transfer patient data** button.

   ▶ A progress window opens.

   ▶ The Patient Record Depot is transferred to the active patient database.

   ▶ During the relocation process, the patient database is not available for other users.

▶ After the patient records have been successfully transferred, the confirmation message **The data transfer was successful** appears. The data transfer is complete.

21 DATA IMPORT

⚠ CAUTION	**Unsuitable 3D X-ray scans may result in an incorrect diagnosis and treatment.**
	Always verify the quality, integrity, and correct orientation of the displayed 3D data.

⚠ CAUTION	**Deleting original data may result in data being lost.**
	Do not delete the original data following the import.

SICAT Suite can import 3D X-ray scans from the following data formats:

- SICAT Suite DICOM data

- 3D X-ray scans (DICOM, information on this can be found in the section *Supported DICOM format* [▶*Page 81]*)

- SICAT Implant data

- SICAT surgical guide order data

- GALILEOS Wrap&Go data

Two settings determine the manner in which SICAT Suite imports 3D X-ray scans into the active patient database:

- The import settings determine whether SICAT Suite imports a 3D X-ray scan or not, overwrites an existing 3D X-ray scan or creates a duplicate.

- The allocation settings determine the patient record, to which SICAT Suite allocates an imported 3D X-ray scan.

If a data record contains studies from SICAT applications, SICAT Suite imports the studies together with the 3D X-ray scans.

IMPORT SETTINGS FOR 3D X-RAY SCANS

If the active patient database contains patient records, you can select different import settings for 3D X-ray scans. The available import settings depend on whether or not the ID of the data to be imported matches the ID of a patient record in the active patient database.

You can select import settings individually for each 3D X-ray scan:

DATA TYPE	THE ID MATCHES	THE ID DOES NOT MATCH	ALWAYS AVAILABLE
SICAT Suite DICOM data SICAT Implant data SICAT surgical guide order data	**Overwrite existing** – SICAT Suite imports the 3D X-ray scan and overwrites the existing data record with the same ID.	**Import** – SICAT Suite imports the 3D X-ray scan as a new data record.	**Do not import** – SICAT Suite does not import the 3D X-ray scan.

DATA TYPE	THE ID MATCHES	THE ID DOES NOT MATCH	ALWAYS AVAILABLE
DICOM data from third-party suppliers GALILEOS Wrap&Go data	**Import anyway** – SICAT Suite imports the 3D X-ray scan as a copy of an existing data record.	**Import** – SICAT Suite imports the 3D X-ray scan as a new data record.	**Do not import** – SICAT Suite does not import the 3D X-ray scan.

ATTRIBUTE COMPARISON FOR PATIENT RECORD ALLOCATION

SICAT Suite analyzes different attributes of the data to be imported. These attributes are:

- Last name

- First name

- Date of birth

- Patient ID, for example the social security number or an internal patient ID for your practice

SETTINGS FOR PATIENT RECORD ALLOCATION

The following list shows the import options, which SICAT Suite suggests, depending on the attribute comparison:

- All attributes of the data to be imported match the attributes of a patient record in the active patient database: SICAT Suite suggests the option **Assign to existing patient record** and matching patient record.

- Not all attributes of the data to be imported match the attributes of a patient record in the active patient database: SICAT Suite suggests the option **Create new patient record**.

In both cases, you can assign the data to another patient record manually.

Perform the following actions in the order stated to import data:

- *Selecting the data to be imported [▶Page 82]*

- *Selecting an import option [▶Page 84]*

- *Allocating data to an existing patient record [▶Page 86]*

or

- *Creating a new patient record through data import [▶Page 85]*

21.1 SUPPORTED DICOM FORMAT

When importing DICOM data records, SICAT Suite supports data records, which meet the following criteria:

- Data record present in DICOM 3.0 format.

- Data record contains only parallel slices.

- Data record is uncompressed, JPEG compressed or JPEG 2000 compressed.

- Data record matches a supported type from the following list.

The supported data record types are:

- CT Image

- Digital X-Ray Image

- Digital Intraoral X-Ray Image

- X-Ray 3D Craniofacial Image

- Secondary Capture Image (grayscale) (for CT modality only)

- Multiframe Grayscale Word Secondary Capture Image (for CT modality only)

Please see the DICOM conformance statement for further criteria. SICAT will be happy to send this to you upon request. The necessary contact details are found on the reverse.

21.2 SELECTING THE DATA TO BE IMPORTED

⚠ CAUTION	**Unsuitable X-ray devices may result in an incorrect diagnosis and treatment.**
	Only use 3D X-ray scans from X-ray devices that are cleared as medical equipment.

⚠ CAUTION	**X-ray devices without DICOM conformity could result in incorrect diagnosis and treatment.**
	Only use 3D volume data from X-ray devices with DICOM conformity declared.

To import data to the active patient database, proceed as follows:

1. Click on the **Navigation bar** icon in the **New data**.

    ► The **New data** window opens:
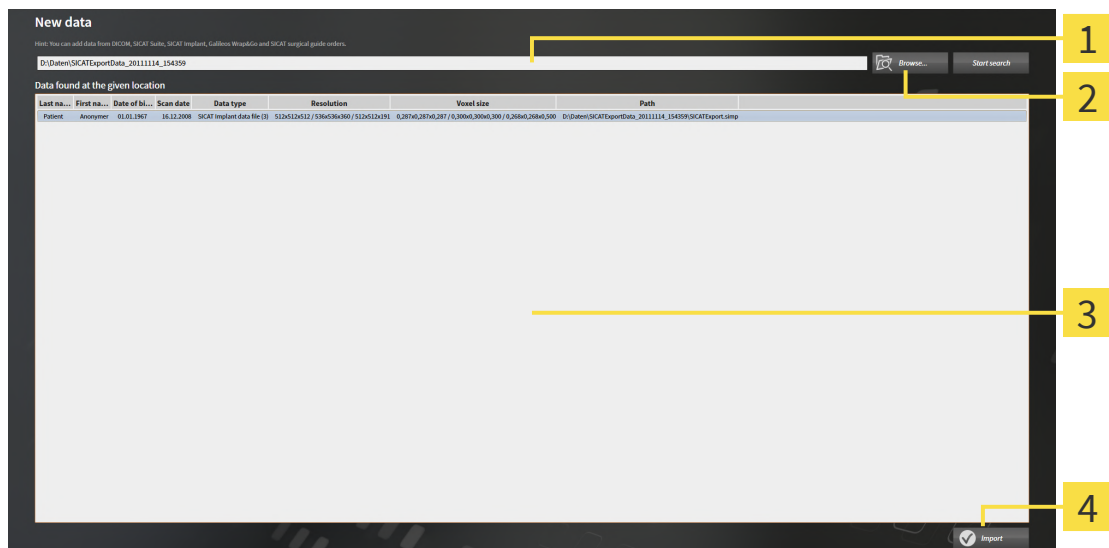
1	**Where is the data located** field	**3**	**Data found at the given location** list
2	**Browse** button	**4**	**Import** button

2. Click on the **Browse** button.

    ► The **Select a file or directory** window opens.

3. Select the desired file or the desired folder in the **Select a file or directory** window and click on **OK**.

► SICAT Suite closes the **Select a file or directory** window and transfers the path of the file you require or the selected folder into the **Where is the data located** field.

► If you have selected a compatible file, SICAT Suite will display the file contents in the **Data found at the given location** list.

► If you have selected a folder, SICAT Suite will search the folder and all sub-folders. SICAT Suite will display compatible files that are contained in one of the searched folders in the **Data found at the given location** list.

> **i**   You can also drag & drop to import data into SICAT Suite.

> **i**   If you use the described procedure, the search will start automatically. You can cancel the search by clicking the **Stop search** button. If you enter a path to a file or a folder manually into the **Where is the data located** field, you have to click on the **Start search** button. This may also be useful to start a new search if the contents of the folder have changed or if you have accidentally canceled the search.

> **i**   If SICAT Suite does not find certain files even if they are compatible, this may be down to the long path to the files. Copy the files to a higher level of the file system and start your search again.

Continue with the section *Selecting an import option [*▶*Page 84]*.

21.3 SELECTING AN IMPORT OPTION

To select an import option for each study, proceed as follows:

1. Select the desired study from the **Data found at the given location** list and click the **Import** button.

   ► The **Import** window opens:
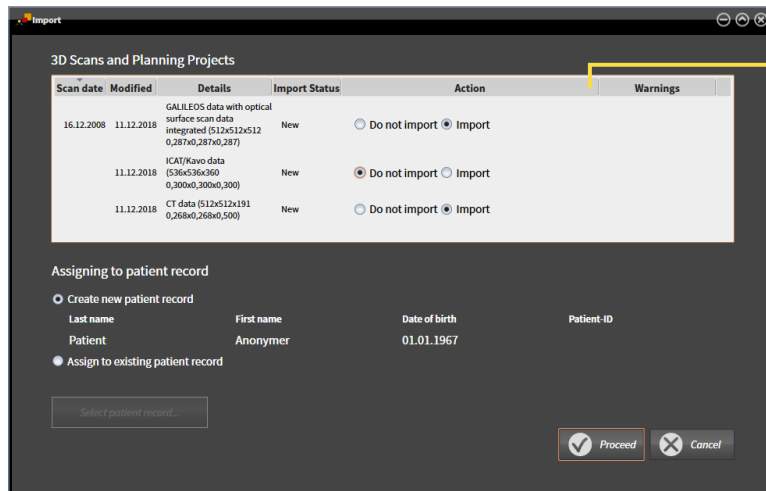
1 **Action** column

2. In the **Import** window, select one of the following entries from the **Action** column for each study: **Do not import**, **Import anyway**, **Import** or **Overwrite existing**. A detailed description of the options can be found in the section *Data import [▶Page 79]*t.

► It is defined for all studies individually whether you want to import them or not.

Continue with one of the following actions:

- ■ *Allocating data to an existing patient record [▶Page 86]*

- ■ *Creating a new patient record through data import [▶Page 85]*

21.4 CREATING A NEW PATIENT RECORD THROUGH DATA IMPORT

> **ℹ** You can create a new patient record via data import if there is not yet a patient record with the same attribute combination in the active patient database.
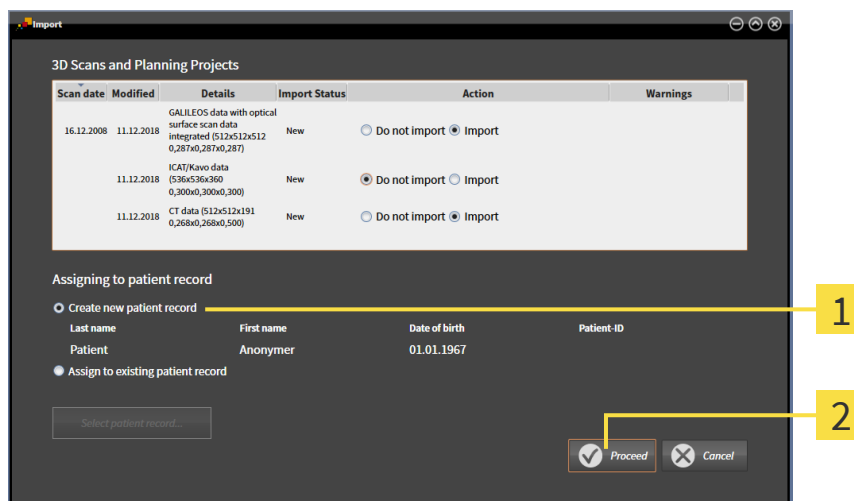
1 **Create new patient record** option

2 **Proceed** button

To allocate data you wish to import to a new patient record, proceed as follows:

■ Select the option **Create new patient record** in the **Assigning to patient record** area and click the **Proceed** button.

▶ SICAT Suite creates a new patient record with the attributes of the selected data.

▶ SICAT Suite imports the selected data and allocates it to the new patient record.

▶ The **Patient record browser** window opens and SICAT Suite highlights the imported patient records in the **Patient records** list. Information on this can be found in the section *Patient records* [▶ *Page 89*].

21.5 ALLOCATING DATA TO AN EXISTING PATIENT RECORD

⚠️ **CAUTION**	**Incorrect assignment of patient name or 3D scan could result in confusion of patient scans.** Verify that the 3D scan that is to be imported or already loaded in a SICAT Suite application is associated with the correct name of the patient and the correct scan information.

ℹ️	SICAT Suite automatically selects the option **Assign to existing patient record** with the corresponding patient record if the following condition applies: all attributes of the data to be imported match the attributes of a patient record in the active patient database.

1 Option **Assign to existing patient record**

2 **Select patient record** button

To manually allocate data you wish to import to an existing patient record, proceed as follows:

☑ The active patient database contains at least one Patient Record.

1. In the **Assigning to patient record** section, select the option **Assign to existing patient record** and click on the button **Select patient record**.

▶ The **Select patient record** window opens and displays a list of already existing Patient Records:
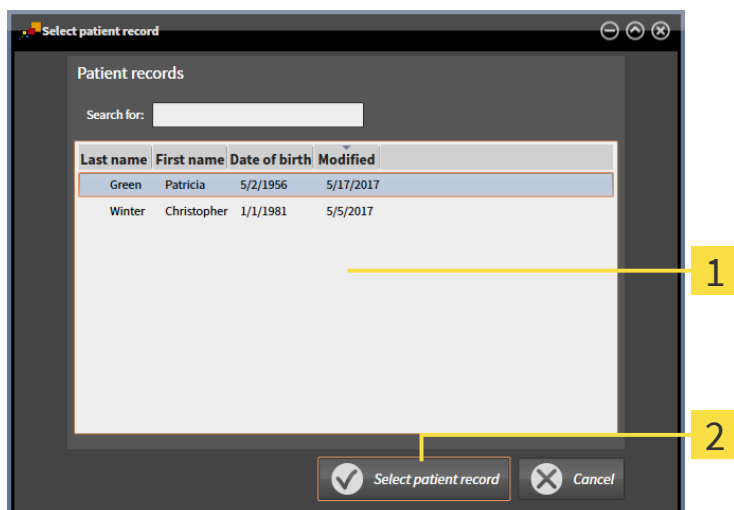
1 **Patient records** list

2 **Select patient record** button

2. Click on the desired Patient Record and click on the button **Select patient record**.

   ▶ The **Select patient record** window closes.

   ▶ The window **Import** displays the attributes of the selected Patient Record.
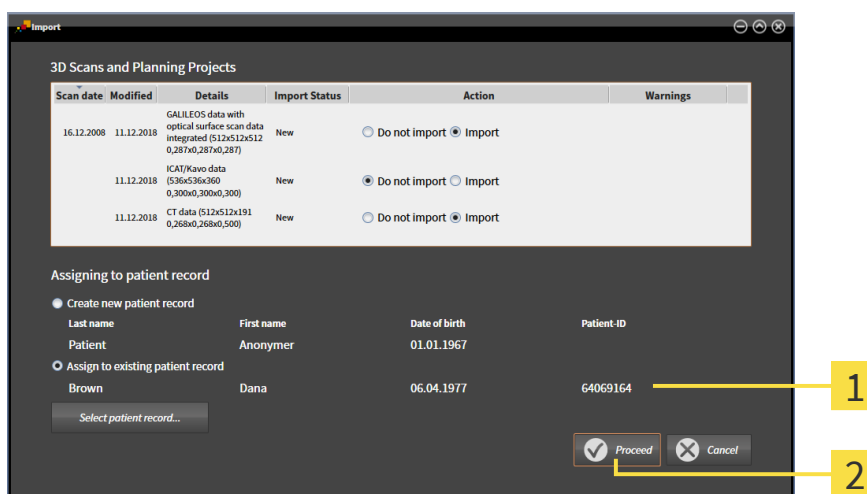
1 Attributes of the selected patient record

2 **Proceed** button

3. Click on the **Proceed** button in the **Import** window.

4. If the attributes of the data to be imported do not match the attributes of the selected patient re-cord, a warning message opens:
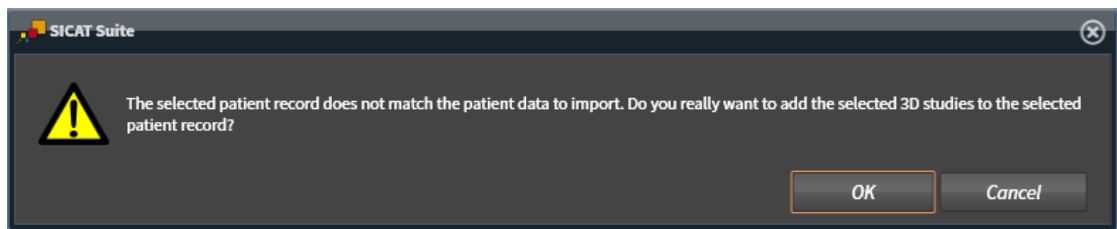
5. If you still want to import the data, click on **OK**.

▶ SICAT Suite imports the selected data and assigns it to an existing patient record.

▶ The **Patient record browser** window opens and SICAT Suite highlights the imported Patient Re-cords in the **Patient records** list. Information on this can be found in the section *Patient records [▶Page 89]*.

22 PATIENT RECORDS

Patient records may contain several 3D studies. A study consists of a 3D X-ray scan and the corresponding planning projects. In addition, it may also contain documents created during the planning phase.

ACCESS TO PATIENT RECORDS WITH MULTIPLE USERS IN THE NETWORK

The patient records are stored in the SICAT Suite Patient Database. When a user opens a patient record for editing this will lock the patient record. A locked patient record can only be opened for viewing by other users in a network environment with server-based patient data and cannot be modified or opened for planning.

The lock is active for the entire time during which the patient record is used by a user for the following purposes:

- Editing a planning project

- Modifying attributes of the patient record

- Adding new patient data to the patient record

- Editing the shopping cart

- Forwarding patient data (export)

- Deleting a patient record

As soon as the patient record is closed, the lock is de-activated and the patient record can again be edited by other users.

Locked patient records are marked with a lock symbol in the **Patient record browser** window. Buttons for editing a patient record are grayed out.

The following actions are available for managing patient records:

- *Opening the "Patient record browser" window [▶Page 90]*

- *Searching for and sorting patient records [▶Page 91]*

- *Opening 3D X-ray scans or planning projects from the patient record summary [▶Page 96]*

- *Working with patient records [▶Page 93]*

- *Changing the attributes of patient records [▶Page 95]*

- *Deleting patient records [▶Page 102]*

- *Deleting 3D X-ray scans or planning projects from patient records [▶Page 104]*

- *Unlocking patient records after lock has expired [▶Page 106]*

There are also actions to import data and to export data from patient records:

- *Data import [▶Page 79]*

- *Data export [▶Page 232]*

22.1 OPENING THE "PATIENT RECORD BROWSER" WINDOW

To open the **Patient record browser** window, proceed as follows:

■ Click on the **Navigation bar** icon in the **Patient records**.

▶ The **Patient record browser** window opens:
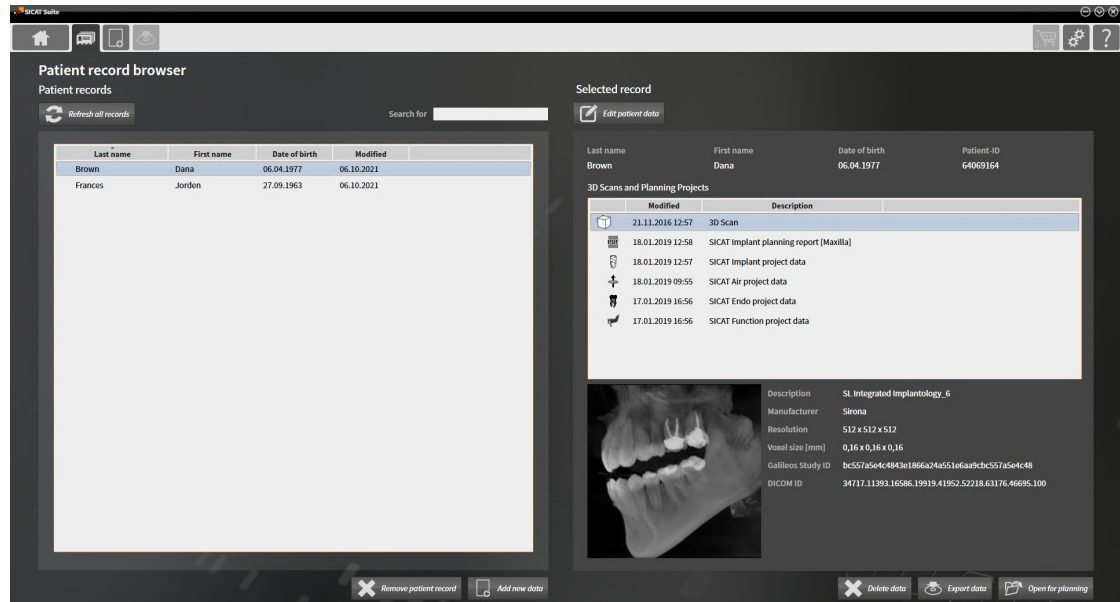
Continue with one of the following actions:

- *Searching for and sorting patient records [▶Page 91]*

- *Working with patient records [▶Page 93]*

- *Changing the attributes of patient records [▶Page 95]*

- *Opening 3D X-ray scans or planning projects from the patient record summary [▶Page 96]*

- *Deleting patient records [▶Page 102]*

- *Deleting 3D X-ray scans or planning projects from patient records [▶Page 104]*

- *Unlocking patient records after lock has expired [▶Page 106]*

22.2 SEARCHING FOR AND SORTING PATIENT RECORDS
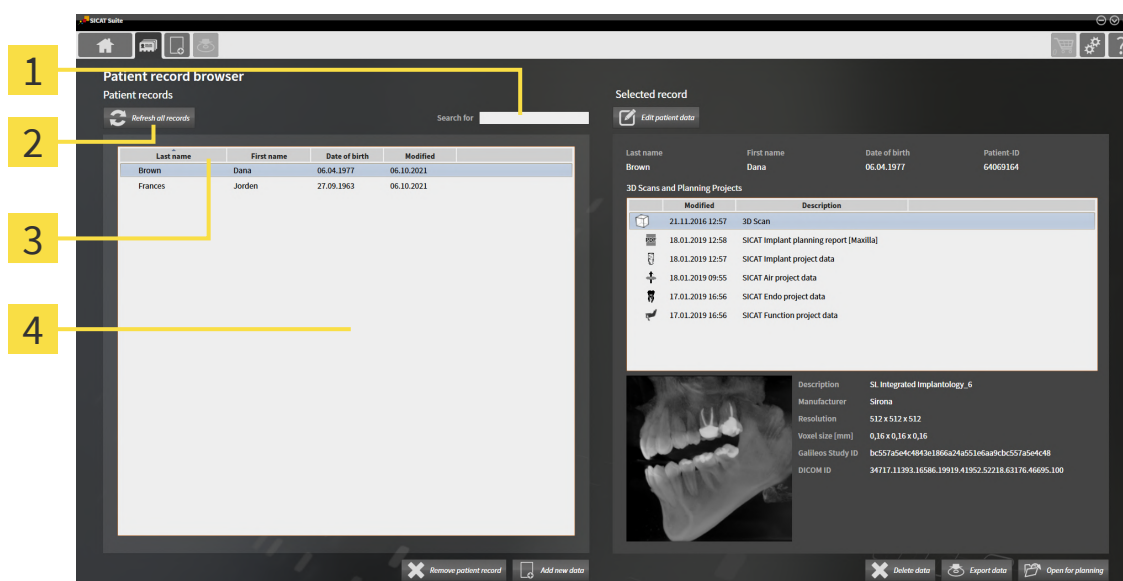
| **1** | **Search for** field | **3** | Column headers with attributes |
| **2** | **Refresh all records** button | **4** | **Patient records** list |

In the **Patient record browser** window, the patient records can be selected and managed.

The **Patient records** list shows all patient records stored in the patient database.

Patient records that are locked by another user are marked with a lock symbol. Further information is available in the section *Patient records [▶Page 89]*.

UPDATING PATIENT RECORDS

Since several users have access to the patient database, it is possible that patient records that have been newly created or modified by other users are not yet shown in the **Patient records** list.

To update the patient records, proceed as follows:

☑ The **Patient record browser** window is already open. Information on this can be found in the section *Opening the "Patient record browser" window [▶Page 90]*.

■ Click on the **Refresh all records** button.

▶ The **Patient records** list will be updated and shows all patient records that exist in the patient database.

> ℹ️ If access to patient records is restricted in a network environment with server-based patient data management due to network problems or if you want to update the locked status of patient records, you can re-establish proper communication between SICAT Suite and the patient database after the network problem has been resolved by updating the **Patient records** list.

SEARCHING FOR PATIENT RECORDS

SICAT Suite searches through the attributes of all patient records for the search text entered.

To search for a patient record, proceed as follows:

☑ The **Patient record browser** window is already open. Information on this can be found in the section *Opening the "Patient record browser" window [*▶*Page 90]*.

■ Type the desired search text in the **Search for** field.

► The **Patient records** list displays all patient records that contain the entered search text in an attribute.

SICAT Suite will start the search as soon as you start typing.

SORTING PATIENT RECORDS ACCORDING TO ATTRIBUTES

You can sort patient records according to the following attributes:

■ **Last name**

■ **First name**

■ **Date of birth**

■ **Modified**

To sort patient records by attributes, proceed as follows:

☑ The **Patient record browser** window is already open. Information on this can be found in the section *Opening the "Patient record browser" window [*▶*Page 90]*.

1. Click on the column header of the desired attribute in the **Patient records** list.

   ► SICAT Suite sorts the **Patient records** list in the order of the desired attribute.

2. Click again on the column header of the desired attribute in the **Patient records** list.

   ► SICAT Suite sorts the **Patient records** list in reverse order of the desired attribute.

> **i** By default, patient records are sorted in descending order of the date they were last changed.

22.3 WORKING WITH PATIENT RECORDS

> ⚠️ **CAUTION**
>
> **Deleted patient records, studies, 3D scans, and planning projects cannot be recovered.**
>
> Only delete patient records, studies, 3D scans, and planning projects if you are sure you will never need those data again.

> ⚠️ **CAUTION**
>
> **When deleting 3D scans, all dependent planning projects will be deleted as well.**
>
> Only delete 3D scans if you are sure you will never need any dependent planning project again.

To work with a patient record, proceed as follows:

☑ The **Patient record browser** window is already open. Information on this can be found in the section *Opening the "Patient record browser" window [▶Page 90]*.
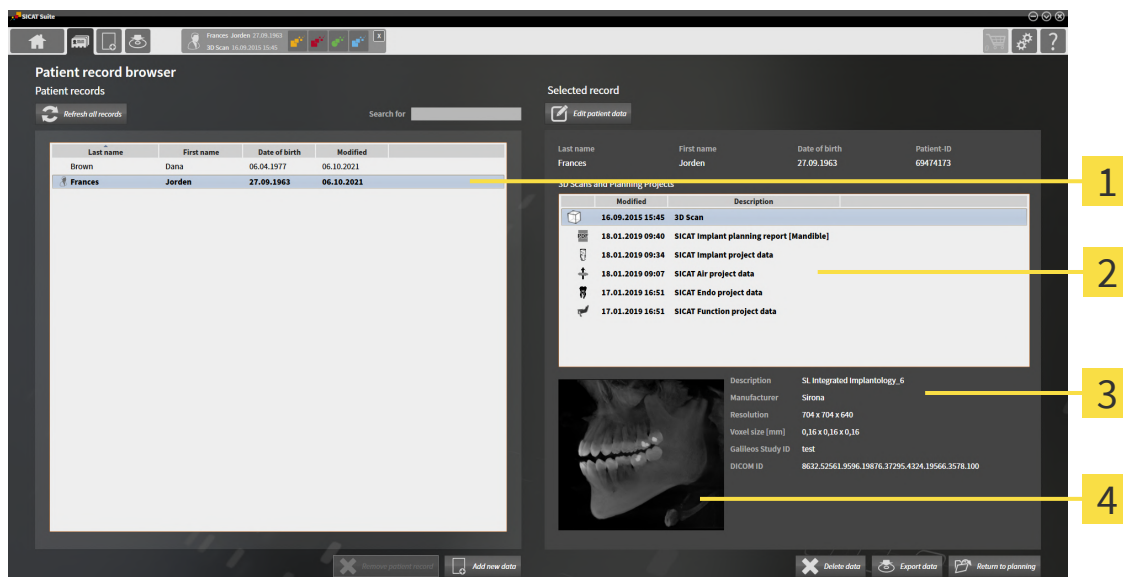
1 **Patient records** list   **3** **Details** area

2 **3D Scans and Planning Projects** list   **4** **Overview** area

1. Select the desired patient record from the **Patient records** list in the **Patient record browser** window.

   ▶ In the **Selected record** area, the **3D Scans and Planning Projects** list shows all 3D X-ray scans, planning projects and PDF files of the selected patient record.

2. Select the desired 3D X-ray scan or planning project from the **3D Scans and Planning Projects** list.

   ▶ The **Overview** section shows a preview of the selected 3D X-ray scan or planning project.

   ▶ The **Details** section shows details of the selected 3D X-ray scan or planning project, such as DICOM metadata or planning data details.

🔒 Patient records that are locked by another user are marked with a lock symbol. Information on this can be found in the section *Patient records [▶Page 89]*.

A patient record that you are currently editing yourself will be marked with a person icon.

You now have the following options for working with the patient record:

- *Changing the attributes of patient records [▶Page 95]*

- *Deleting 3D X-ray scans or planning projects from patient records [▶Page 104]*

- *Deleting patient records [▶Page 102]*

- *Data export [▶Page 232]*

- *Unlocking patient records after lock has expired [▶Page 106]*

22.4 CHANGING THE ATTRIBUTES OF PATIENT RECORDS

> **i** The combination of attributes in each patient record in the active patient database must be unique.

You can change the following attributes of a patient record:

- **Last name**
- **First name**
- **Date of birth**
- **Patient-ID**

To change the attributes of patient records, proceed as follows:

☑ The **Patient record browser** window is already open. Information on this can be found in the section *Opening the "Patient record browser" window* [▶Page 90]

☑ The patient record is not locked by another user.

1. Select the desired patient record from the **Patient records** list in the **Patient record browser** window.

2. Click on the **Edit patient data** button.

   ▶ The **Edit** window opens:

| 1 | Attribute fields |
| 2 | **Save Changes** button |

3. Type the desired values into the attribute fields in the **Edit** window.

4. Click on the **Save Changes** button.

▶ SICAT Suite saves your changes.

> **i** The patient ID remains visible even if patient data is anonymized and can be used to identify patients at any time.

> **i** The patient ID does not match the DICOM ID. You can enter any desired ID as the patient ID, for example the social security number or an internal patient ID for your practice.

22.5 OPENING 3D X-RAY SCANS OR PLANNING PROJECTS FROM THE PATIENT RECORD SUMMARY

⚠️

CAUTION

Incorrect assignment of patient name or 3D scan could result in confusion of patient scans.

Verify that the 3D scan that is to be imported or already loaded in a SICAT Suite application is associated with the correct name of the patient and the correct scan information.

⚠️

CAUTION

Unsuitable X-ray devices may result in an incorrect diagnosis and treatment.

Only use 3D X-ray scans from X-ray devices that are cleared as medical equipment.

⚠️

CAUTION

Unsuitable 3D X-ray scans may result in an incorrect diagnosis and treatment.

Always verify the quality, integrity, and correct orientation of the displayed 3D data.

Depending on the license used and the lock status of a patient record, 3D x-ray scans or planning projects can be opened for viewing or for planning.

ℹ️

Whether you can open a 3D X-ray scan or a planning project for planning or just for viewing depends on the license you are using and whether the patient record is locked by another user. For further information see section *Opening read-only data [▶Page 262]* and *Patient records [▶Page 89]* and *Working with patient records [▶Page 93]*.

To open a 3D X-ray scan or planning project, proceed as follows:

☑ The **Patient record browser** window is already open. Information on this can be found in the section *Opening the "Patient record browser" window [▶Page 90]*.
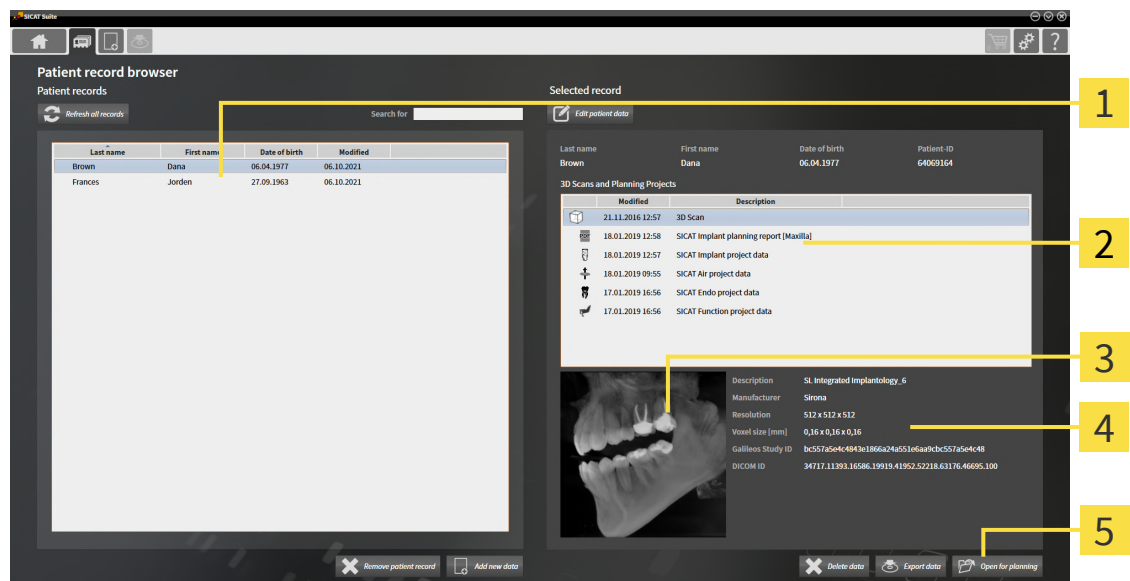
1	**Patient records** list	**4**	**Details** area
2	**3D Scans and Planning Projects** list	**5**	**Open for planning** or **Open to view** button
3	**Overview** area		

1. Select the desired patient record from the **Patient records** list in the **Patient record browser** window.

   ▶ In the **Selected record** area, the **3D Scans and Planning Projects** list shows all 3D X-ray scans, planning projects and PDF files of the selected patient record.

2. Select the desired data record or document from the **3D Scans and Planning Projects** list.

   ▶ The **Overview** and **Details** areas display information on the selected data record or document.

3. Click on the **Open for planning** button or **Open to view** button to open a selected data record.

   ▶ The selected data record is opened in a SICAT application for planning or viewing.

4. Click on the **Export data** button to save a selected PDF.

   ▶ A Windows file explorer window opens and you can save the document in any directory. You can then view the document in the standard PDF viewer.

> ℹ️ If you open a 3D X-ray scan without the corresponding study and have only activated the license of one SICAT application, that SICAT application will start. If you open a 3D X-ray scan with several corresponding studies and you have activated the licenses for multiple SICAT applications, the application with the most recently changed study will open.

22.6 SICAT ENDO STUDIES IN SICAT SUITE

⚠️ **CAUTION**	**X-ray devices without DICOM conformity could result in incorrect diagnosis and treatment.** Only use 3D volume data from X-ray devices with DICOM conformity declared.
⚠️ **CAUTION**	**Unsuitable 3D X-ray scans may result in an incorrect diagnosis and treatment.** Always verify the quality, integrity, and correct orientation of the displayed 3D data.
⚠️ **CAUTION**	**Unsuitable X-ray devices may result in an incorrect diagnosis and treatment.** Only use 3D X-ray scans from X-ray devices that are cleared as medical equipment.
⚠️ **CAUTION**	**Insufficient visualization quality could result in incorrect diagnosis and treatment.** Before using a SICAT application, for example with the SMPTE test image, check whether the display quality is sufficient.
⚠️ **CAUTION**	**Insufficient environmental visualization conditions could result in incorrect diagnosis and treatment.** 1. Only perform planning if the environmental conditions allow for sufficient visualization quality. For example, check for appropriate lighting. 2. Check whether the display quality is sufficient using the SMPTE test image.

The **Patient record browser** displays information on SICAT Endo studies if the following conditions have been met:

- You are using the stand-alone version of SICAT Suite.

- You have selected a SICAT Endo study in the **3D Scans and Planning Projects** area:
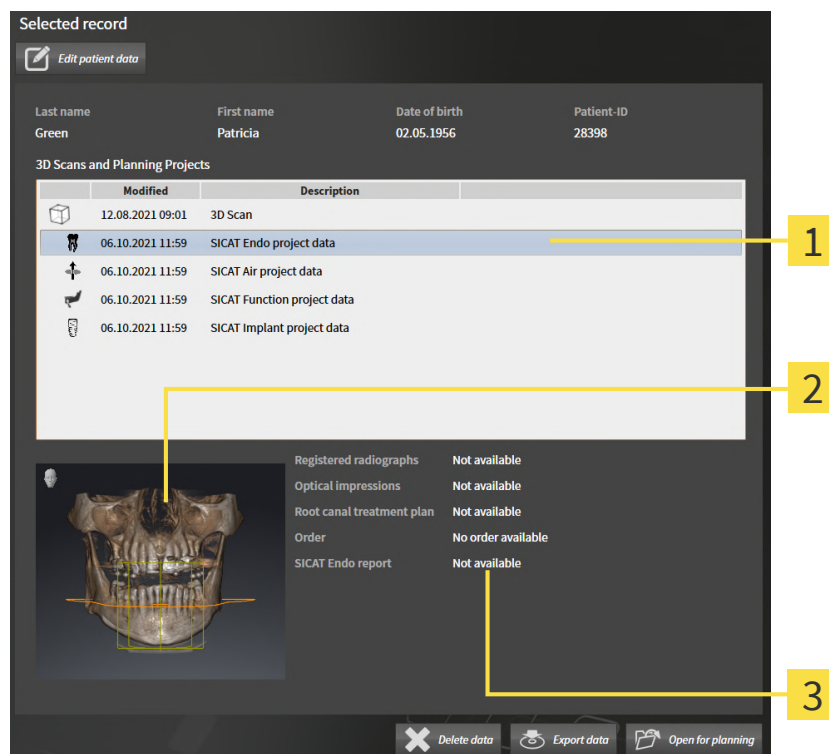
	Selected SICAT Endo study
2	**Overview** area
3	**Details** area

The **Overview** area shows the **3D** view:
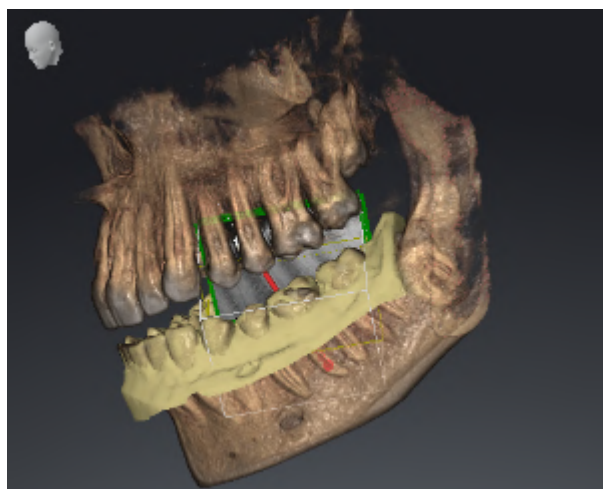
The **Details** area displays the following information:

- Availability of registered intraoral scans

- Availability of optical impressions

- Availability of a planning for root canal treatment

- Availability of an order with status and date

- Availability of a report

22.7 CLOSING PATIENT RECORDS AND SAVING THEIR PLANNING PROJECTS

To close a patient record that has been opened for editing and to save the planning projects it contains, proceed as follows:

■ Click on the **Close** button in the area of the open patient record.

▶ SICAT Suite closes the patient record and saves any changes made to planning projects. The patient record is then unlocked.

22.8 DELETING PATIENT RECORDS

> ⚠️
> **CAUTION**
>
> **When deleting patient records, all 3D scans, planning projects and PDF files contained in these patient records will be deleted as well.**
>
> Only delete patient records if you are sure you will never need any contained 3D scans, planning projects and PDF files again.

To delete a patient record and all 3D scans and planning projects it contains, proceed as follows:

☑ The **Patient record browser** window is already open. Information on this can be found in the section *Opening the "Patient record browser" window [▶Page 90]*.

☑ The patient record is not locked by another user.
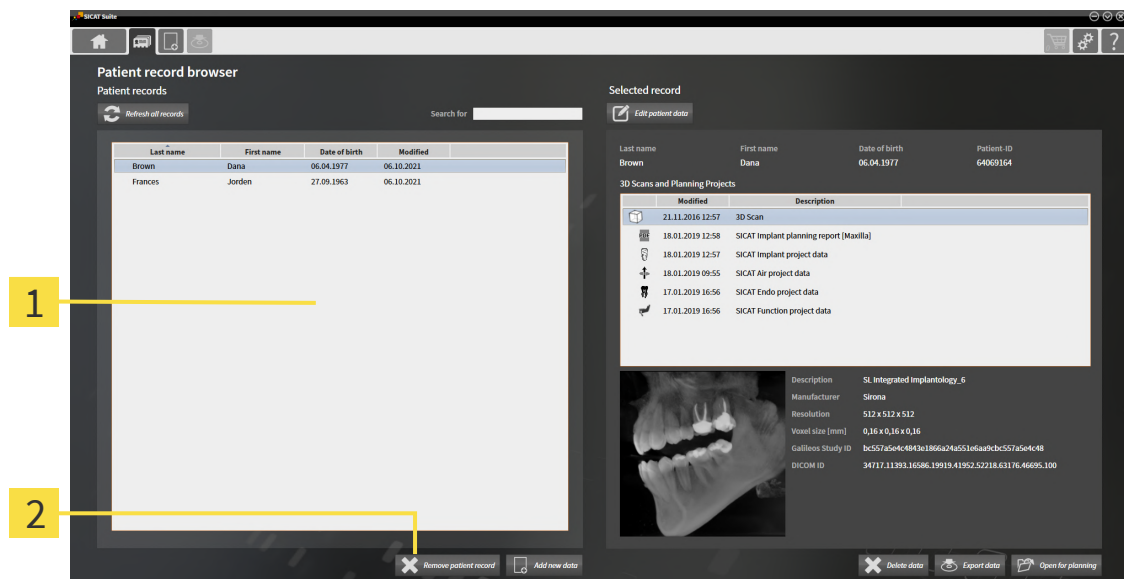
1 **Patient records** list

2 **Remove patient record** button

1. Select the desired patient record from the **Patient records** list in the **Patient record browser** window.

2. Click on the **Remove patient record** button.

   ▶ A confirmation message opens:
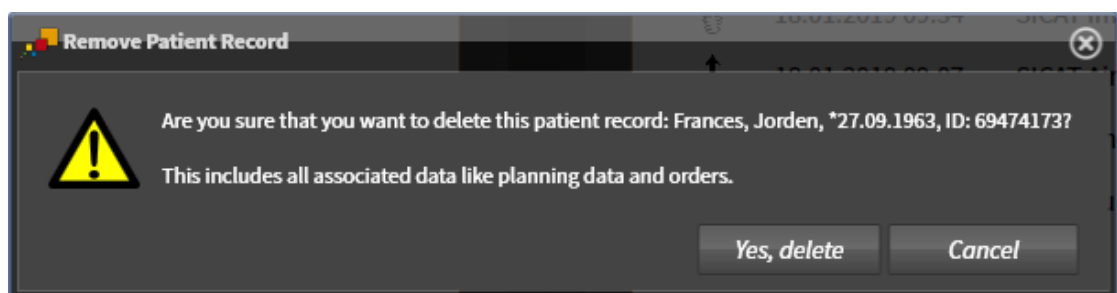
3. Click on **Yes, delete** in the confirmation message if you wish to delete the selected data.

▶ SICAT Suite deletes the selected patient record and all 3D scans and planning projects included therein from the active patient database and removes it from the **Patient records** list.

22.9 DELETING 3D X-RAY SCANS OR PLANNING PROJECTS FROM PATIENT RECORDS

⚠ CAUTION	**Deleted patient records, studies, 3D scans, and planning projects cannot be recovered.**
	Only delete patient records, studies, 3D scans, and planning projects if you are sure you will never need those data again.

⚠ CAUTION	**When deleting 3D scans, all dependent planning projects will be deleted as well.**
	Only delete 3D scans if you are sure you will never need any dependent planning project again.

To delete a 3D X-ray scan or planning project from a patient record, proceed as follows:

☑ The **Patient record browser** window is already open. Information on this can be found in the section *Opening the "Patient record browser" window [▶Page 90]*.

☑ The patient record is not locked by another user.
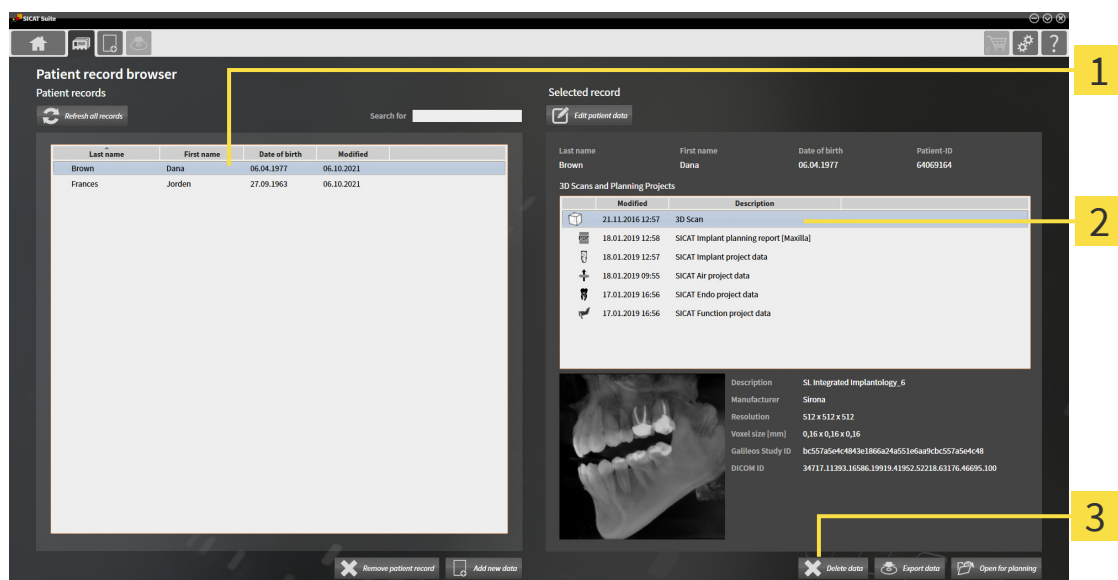
1	**Patient records** list

2	**3D Scans and Planning Projects** list

3	**Remove data** button

1. Select the desired patient record from the **Patient records** list in the **Patient record browser** window.

   ► In the **Selected record** area, the **3D Scans and Planning Projects** list shows all 3D X-ray scans, planning projects and PDF files of the selected patient record.

2. Select the desired data record or document from the **3D Scans and Planning Projects** list.

3. Click on the **Remove data** button.

▶ A confirmation message opens:
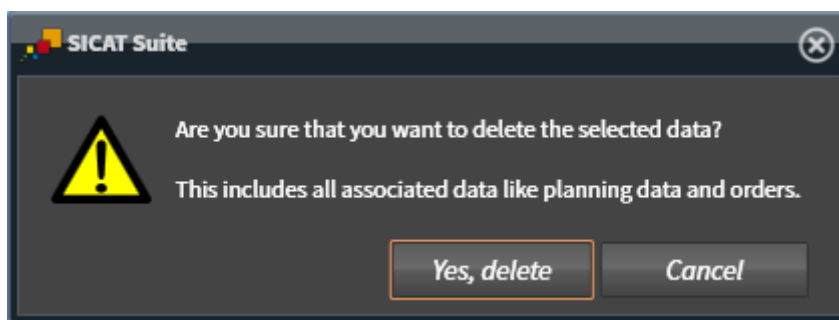
4. Click on **Yes, delete** in the confirmation message if you wish to delete the selected data.

▶ SICAT Suite deletes the selected 3D X-ray scan or planning project from the patient record and removes it from the **3D Scans and Planning Projects** list.

22.10 UNLOCKING PATIENT RECORDS AFTER LOCK HAS EXPIRED

Due to network problems, it can happen in rare cases that a patient record was not closed properly by a user in the network and is still locked, even though the patient record is no longer opened by the user.

A locked patient record that has not been updated for a long time is marked with the lock symbol and an exclamation mark in the **Selected record** area.

To unlock a patient record that is no longer opened, proceed as follows:

☑ The **Patient record browser** window is already open. Information on this can be found in the section *Opening the "Patient record browser" window [*▶*Page 90]*

☑ A patient record is marked as locked and can only be opened for viewing.

1. Select the locked patient record from the **Patient records** list in the **Patient record browser** window.

   ▶ In the **Selected record** area, the **3D Scans and Planning Projects** list shows all 3D X-ray scans, planning projects and PDF files of the selected patient record.

2. Place the mouse pointer on the lock symbol.

   ▶ An information window opens:
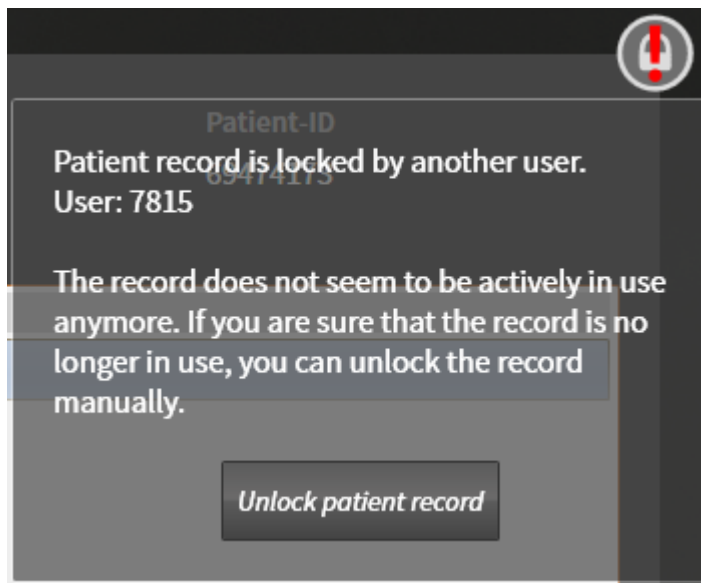
   ▶ It will indicate the name of the user who is currently causing the patient record to be locked.

3. Contact the user and ask them if they really still have the patient record open.

4. Once you have made sure that the respective user no longer has the patient record open, click on the **Unlock patient record** button.

   ▶ The patient record is then unlocked.

23 THE SICAT ENDO USER INTERFACE

The SICAT Endo user interface comprises the following parts:
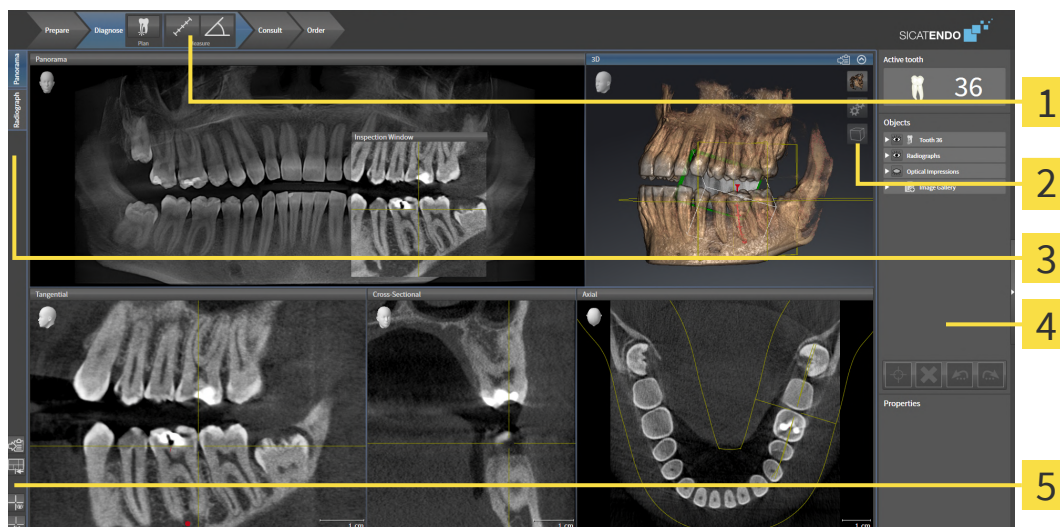
1	**Workflow toolbar**	**4**	**Object bar**
2	**View toolbar**	**5**	**Workspace toolbar**
3	Buttons for toggling between workspaces		

- The **Workflow toolbar** consists of various workflow steps, which include the main tools of the application workflow. This includes tools that you can use to add and import diagnosis objects and planning objects. Information on this can be found in the section *Workflow toolbar [▶Page 108]*.

- The **Workspace area** is the part of the user interface below the **Workflow toolbar**. It displays the active workspace of SICAT Endo. Each workspace contains a specific combination of views. Information on this can be found in the section *Workspaces [▶Page 118]*.

- Only the active view shows the **View toolbar**. It contains tools to adjust the display to the corresponding view. For further information about this see *Adjusting the views [▶Page 126]* and *Adjusting the 3D view [▶Page 139]*.

- The **Object bar** contains tools for the management of diagnosis objects and planning objects. For further information, see section *Object bar [▶Page 110]* and section *SICAT Endo objects [▶Page 114]*.

- The **Workspace toolbar** contains tools for changing the general settings of workspaces and all of the views they contain and for documenting the contents of workspaces. For further information about this, see *Moving, hiding and showing crosshairs and frames [▶Page 133]*, *Resetting views [▶Page 137]*, *Adjusting and resetting the layout of workspaces [▶Page 123]* and *Creating screenshots of workspaces [▶Page 124]*.

23.1 WORKFLOW TOOLBAR

The **Workflow toolbar** in SICAT Endo consists of four workflow steps:

1. **Prepare**
2. **Diagnose**
3. **Consult**
4. **Order**

EXPANDING AND COLLAPSING WORKFLOW STEPS

You can expand and collapse workflow steps by clicking on them.

1. "PREPARE" WORKFLOW STEP
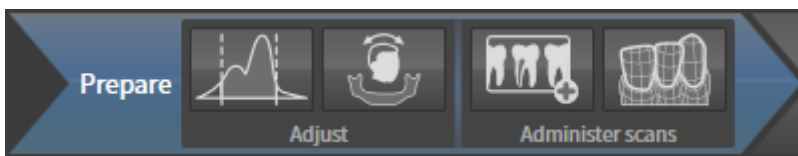
The following tools are available in the **Prepare** workflow step:

- **Adjust gray values** - Information on this can be found in the section *Adjusting gray scale values [▶Page 148]*. This tool is only available and required for volumes from non-Sirona devices.

- **Adjust volume orientation and panoramic region** - For further information see *Adjusting the volume orientation [▶Page 152]* and *Adjusting the panoramic region [▶Page 157]*.

- **Administer and register radiographs** - For further information see *Importing intraoral scans and allocating them to teeth [▶Page 176]*, *Pre-positioning intraoral scans [▶Page 180]* and *Registering intraoral scan [▶Page 182]*.

- **Import and register optical impressions** - Information on this can be found in the section *Optical impressions [▶Page 160]*.

2. "DIAGNOSE" WORKFLOW STEP
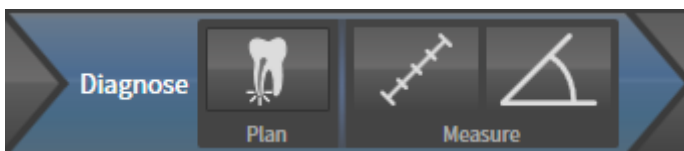
The following tools are available in the **Diagnose** workflow step:

■ **Plan root canal treatment using EndoLines and drill canals** - For further information see *Pre-aligning a tooth region [▶Page 199]*, *Setting EndoLines [▶Page 201]* and *Planning drill channels [▶Page 211]*.

■ **Add distance measurement (D)** - Information on this can be found in the section *Adding distance measurements [▶Page 217]*.

■ **Add angle measurement (A)** - Information on this can be found in the section *Adding angle measurements [▶Page 218]*.

3. "INFORM" WORKFLOW STEP
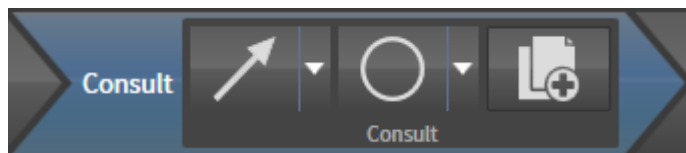
The following tools are available in the **Consult** workflow step:

■ **Draw Arrow** - Information on this can be found in the section *Creating images and screenshots [▶Page 223]*.

■ **Draw Circle** - Information on this can be found in the section *Creating images and screenshots [▶Page 223]*.

■ **Create report** - Information on this can be found in the section Preparing handouts.

4. "ORDER" WORKFLOW STEP
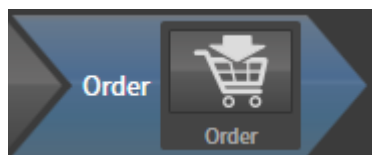
The following tools are available in the **Order** workflow step:

■ **Order SICAT ENDOGUIDE** - Information on this can be found in the section *Placing surgical guides in the shopping cart [▶Page 236]*.

23.2 OBJECT BAR
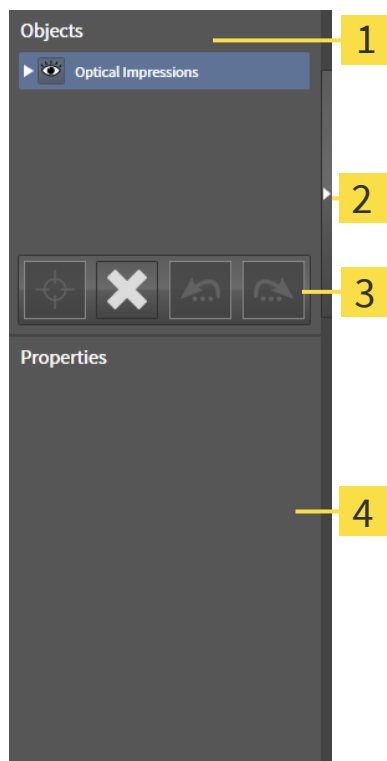
1	**Object browser**
2	**Hide object bar** button or **Show object bar** button
3	**Object toolbar**
4	**Properties** area

The **Object bar** contains the following elements:

- The **Object browser** shows a categorized list of all diagnosis objects and planning objects that you have added or imported to the current study. The **Object browser** groups objects automatically. For example, the **Measurements** group contains all measurement objects. You can expand or col-lapse object groups, activate objects and object groups and show or hide objects and object groups. Information on this can be found in the section *Managing objects with the object browser [*▶*Page 111]*.

- The **Object toolbar** contains tools for focusing objects, removing objects or object groups and un-doing or redoing object actions or object group actions. Information on this can be found in the sec-tion *Managing objects with the object toolbar [*▶*Page 113]*.

- The **Properties** area shows the details of the active object.

You can change the visibility of the **Object bar** using two buttons on the right side of the **Object bar**: **Hide object bar** and **Show object bar**

The objects available in SICAT Endo can be found in the section *SICAT Endo objects [*▶*Page 114]*.

23.3 MANAGING OBJECTS WITH THE OBJECT BROWSER

COLLAPSING AND EXPANDING OBJECT GROUPS

To collapse or expand an object group, proceed as follows:

☑ The desired object group is currently expanded.

1. Click on the **Collapse group** icon next to the desired object group.
   ▶ The object group collapses.

2. Click on the **Expand group** icon next to the desired object group.

▶ The object group expands.

ACTIVATING OBJECTS AND OBJECT GROUPS

Some tools are only available for active objects or object groups.

To activate an object or object group, proceed as follows:

☑ The desired object or the desired object group is currently deactivated.

- ■ Click the desired object or the desired object group.
- ▶ SICAT Endo deactivates a previously activated object or object group.
- ▶ SICAT Endo activates the desired object or the desired object group.
- ▶ SICAT Endo highlights the object or object group in **Object browser** and the views in a certain color.

> **ℹ** In the 2D views, you can activate certain objects by clicking on the objects.

HIDING AND SHOWING OBJECTS AND OBJECT GROUPS

> **ℹ** This function is available only for certain object types.

To hide and show an object or object group, proceed as follows:

☑ The desired object or the desired object group is currently shown.

1. Click on the **Shown** icon or **Some Shown** icon next to the desired object or object group.

► SICAT Endo hides the object or object group.

► SICAT Endo displays the **Hidden** icon next to the object or object group.

2. Click on the **Hidden** icon next to the desired object or object group.

► SICAT Endo shows the object or object group.

► SICAT Endo displays the **Shown** icon next to the object or object group.

23.4 MANAGING OBJECTS WITH THE OBJECT TOOLBAR

> **i** These functions are available only for certain object types.

FOCUSING ON OBJECTS

Use this function to find objects in the views.

To focus objects, proceed as follows:

☑ The desired object is already active. Information on this can be found in the section *Managing objects with the object browser [▶Page 111]*.

☑ The object can be focused.

■ Click on the **Focus active object (F)** icon.

▶ SICAT Endo moves the focus point of the views to the active object.

▶ SICAT Endo displays the active object in the views.

> **i** You can also focus objects by double clicking on them in **Object browser** or in a view with the exception of the **3D** view.

REMOVING OBJECTS AND OBJECT GROUPS

To remove an object or object group, proceed as follows:

☑ The desired object or the desired object group is already active. Information on this can be found in the section *Managing objects with the object browser [▶Page 111]*.

■ Click on the **Remove active object/group (Del)** icon.

▶ SICAT Endo removes the object or object group.

UNDOING AND REDOING OBJECT ACTIONS

To undo and redo the last object action or group action, proceed as follows:

1. Click on the **Undo last object/group action (Ctrl+Z)** icon.

   ▶ SICAT Endo undoes the last object action or group action.

2. Click on the **Redo object/group action (Ctrl+Y)** icon.

▶ SICAT Endo redoes the last undone object action or group action.

> **i** Undo and redo are only available as long as a study is open in a SICAT application.

23.5 SICAT ENDO OBJECTS

SICAT Endo groups application-specific object groups and objects in the **Object browser** as follows:

- **Radiographs**

- **Optical impression object group**

- **Endo planning object**
  - **EndoLine**
  - **Drill canal**

- **Image Gallery**
  - **Image**
  - **Screenshot**

INTRAORAL SCANS OBJECT GROUP
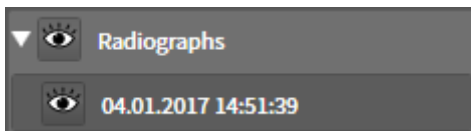
After you have imported and registered intraoral scans, SICAT Endo displays a **Radiographs** object group in the **Object browser**. A **Radiographs** object group always consists of at least one intraoral scan. SICAT Endo displays the scan date and the scan time for each intraoral scan.

OPTICAL IMPRESSION OBJECT GROUP
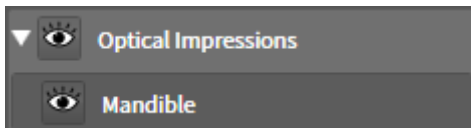
After you have imported and registered at least one optical impression, SICAT Endo displays an **Optical Impressions** object group in the **Object browser**. An **Optical Impressions** object group may contain the following objects:

- **Maxilla**

- **Mandible**

If you focus on one object, SICAT Endo will focus all 2D views on the selected object.

If you remove a **Maxilla** or a **Mandible**object, SICAT Endo deletes all existing optical impressions from the study.

ENDO PLANNING OBJECT GROUP
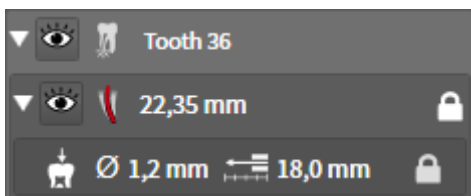
After you have planned EndoLines and drill channels, SICAT Endo shows **Endo planning object groups** in the **Object browser**. An **Endo planning object group** is always tooth-specific and contains the results from the EndoLine wizard in form of EndoLines and drill channels. An **Endo planning object group** contains as objects EndoLines and as sub-objects drill channels. Drill channels are always linked to an EndoLine. You can use drill channels to plan your endodontic treatment.

If you focus on one of the objects or sub-objects, SICAT Endo will focus all 2D views on the selected object.

PICTURE GALLERY OBJECT GROUP
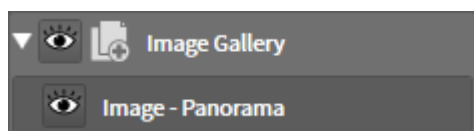
The following applies for **Image Gallery** object groups:

- If you move the mouse pointer over an **Image Gallery** object group, SICAT Endo will display a gear icon. Click on the gear icon and SICAT Endo will open the **Report Generation** window.

- You can use the **Remove active object/group (Del)** function to remove an **Image Gallery** object group. SICAT Endo removes all associated **Image** objects and **Screenshot** objects.

IMAGE OBJECTS
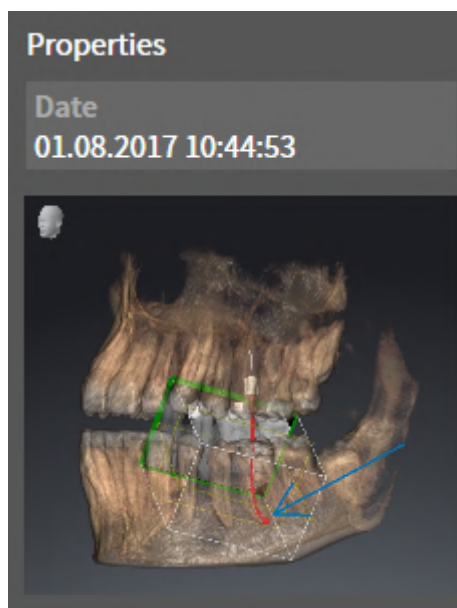
The following applies for **Image** objects:

- **Image** objects are below **Image Gallery** object groups.

- SICAT Endo combines all drawing objects of a slice in a workspace for each 2D view and creates a **Image** object from this.

- SICAT Endo combines all drawing objects of a certain viewing direction and zoom factor in a workspace for the 3D view and creates an **Image** object from this.

- After you have created and activated an **Image** object, the **Object browser** will display the following in the **Properties** area:
  - Creation time of the object
  - Preview of the object

- You can use the **Undo last object/group action (Ctrl+Z)** and **Redo object/group action (Ctrl+Y)** functions for individual annotations.

- You can use the **Remove active object/group (Del)** function to remove a **Image** object and thus all annotations contained in it at once. SICAT Endo removes **Image** objects both from the **Object browser** and from the **Report Generation** window.

- If you focus on an **Image** object, SICAT Endo restores the corresponding view for the time at which you have created the last annotation contained therein.

SCREENSHOT OBJECTS
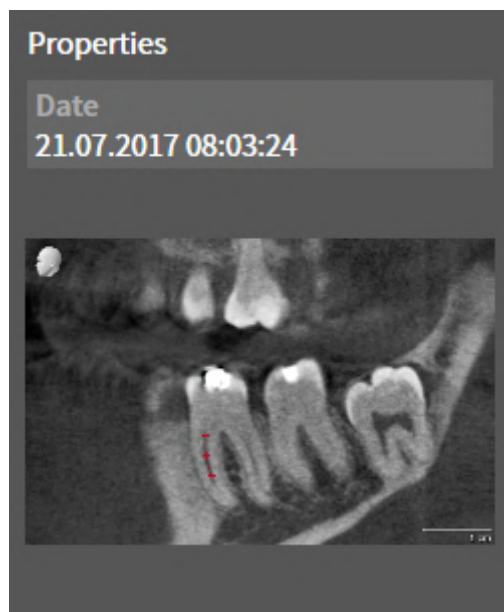
The following applies for **Screenshot** objects:

- **Screenshot** objects are below**Image Gallery** object groups.

- SICAT Endo creates one **Screenshot** object per screenshot.

- After you have created and activated a **Screenshot** object, the **Object browser** will display the following in the **Properties** area:
  - Creation time of the object
  - Preview of the object

- You can use the **Remove active object/group (Del)** function to remove a **Screenshot** object. SICAT Endo removes **Screenshot** objects both from the **Object browser** and from the **Report Generation** window.

- If you focus on a **Screenshot** object, SICAT Endo restores the corresponding view for the time at which you have created the object.

- The show and hide functions are not available.

24 WORKSPACES

SICAT applications constitute studies in various views and assign combinations of views in workspaces.

SICAT Endo features two different workspaces:
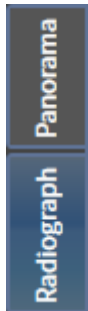
- **Panorama** workspace- Information on this can be found in the section *Overview of the panoramic workspace [▶Page 119]*.

- **Intraoral image** workspace- Information on this can be found in the section *Overview of the intraoral scan workspace [▶Page 121]*.

The following actions are available for workspaces and the views they contain:

- *Switching workspaces [▶Page 122]*.

- *Adjusting and resetting the layout of workspaces [▶Page 123]*.

- *Adjusting the views [▶Page 126]*.

- There are additional possibilities to adjust the **3D** view. Information on this can be found in the section *Adjusting the 3D view [▶Page 139]*.

- You can document the contents of the active workspace. Information on this can be found in the section *Creating screenshots of workspaces [▶Page 124]*.

24.1 OVERVIEW OF THE PANORAMIC WORKSPACE
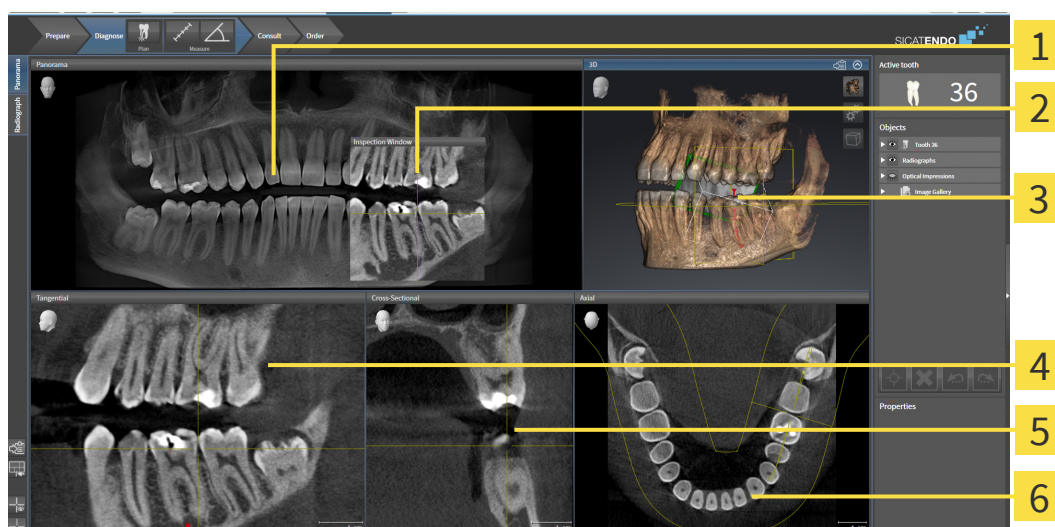
1	**Panorama** view	**4**	**Tangential** view
2	**Inspection Window**	**5**	**Cross-Sectional** view
3	**3D** view	**6**	**Axial** view

PANORAMA VIEW

The **Panorama** view corresponds to a virtual orthopantomogram (OPG). It shows an orthogonal projection onto the panoramic curve with a certain thickness. You can adjust the panoramic curve and the thickness to both jaws. Information on this can be found in the section *Adjusting the panoramic region [▶Page 157]*.

INSPECTION WINDOW

The **Inspection Window** is embedded in the **Panorama** view. It adds the third dimension to the **Panorama** view by displaying slices parallel to the panoramic curve. You can move, hide, show and maximize the **Inspection Window**. Information on this can be found in the section *Moving, hiding, showing and maximizing the inspection window [▶Page 134]*.

3D VIEW

The **3D** view shows a 3D representation of the opened study.

TANGENTIAL VIEW

The **Tangential** view shows slices that are tangential to the panoramic curve.

CROSS-SECTIONAL VIEW

The **Cross-Sectional** view shows slices that are orthogonal to the panoramic curve.

AXIAL VIEW

By default, the **Axial** view shows slices from above. You can switch the viewing direction of the **Axial** view. Information on this can be found in the section *Changing visualization settings [▶Page 256]*.

You can find information on the functions of the views in the sections *Adjusting the views [▶Page 126]* and *Adjusting the 3D view [▶Page 139]*.

24.2 OVERVIEW OF THE INTRAORAL SCAN WORKSPACE
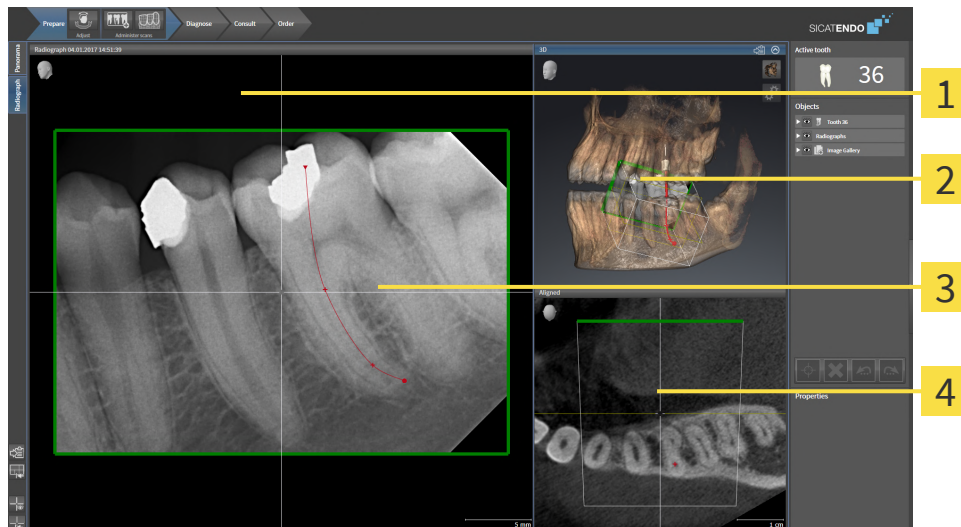
1	**Radiograph** view	**3**	Inspection window
2	**3D** view	**4**	**Aligned** view

RADIOGRAPH VIEW

The **Radiograph** view shows the intraoral scan selected in the object browser.

INSPECTION WINDOW

The **Inspection Window** is embedded in the **Radiograph** view. It adds the third dimension to the **Radiograph** view by showing slices parallel to the intraoral scan. You can hide and show the **Inspection Window** and use it to verify the registration or assess root canals.

3D VIEW

The **3D** view shows a 3D representation of the opened study.

ALIGNED VIEW

By default, the **Aligned** view shows a slice through the intraoral scan that is defined by the position of the crosshairs in the **Radiograph** view.

24.3 SWITCHING WORKSPACES

To switch the workspace, proceed as follows:

- ■   Click on the tab of the desired workspace in the upper left corner of the workspace region.

▶ The selected workspace opens.

24.4 ADJUSTING AND RESETTING THE LAYOUT OF WORKSPACES

ADJUSTING THE LAYOUT OF THE ACTIVE WORKSPACE

To adjust the layout of the active workspace, proceed as follows:

1. Move the mouse pointer over the border between two or more views.
   ► The mouse pointer changes:

2. Click and hold the left mouse button.

3. Move the mouse.
   ► The position of the border will change.
   ► The sizes of the views on all sides of the border will change.

4. Release the left mouse button.

► SICAT Endo maintains the current position of the border and the current sizes of the views on all sides of the border.

RESETTING THE LAYOUT OF THE ACTIVE WORKSPACE

To reset the layout of the active workspace, proceed as follows:

■ Click on the **Reset layout of active workspace** icon in the **Workspace toolbar**.

► SICAT Endo resets the active workspace to the default layout. This means that the software displays all views in their default sizes.

24.5 CREATING SCREENSHOTS OF WORKSPACES

You can copy screenshots of the workspaces to the Windows clipboard for documentation purposes.

COPYING A SCREENSHOT OF A WORKSPACE TO THE WINDOWS CLIPBOARD

To copy a screenshot of a workspace to the Windows clipboard, proceed as follows:

☑ The desired workspace is already active. Information on this can be found in the section *Switching workspaces [▶Page 122]*.

■ Click on the **Copy screenshot of active workspace to clipboard** icon in the workspace toolbar.

▶ SICAT Endo copies a screenshot of a workspace to the Windows clipboard.

> **ℹ** You can add screenshots from the clipboard to several applications, such as image processing software and word processors. In most applications, the paste shortcut key is Ctrl+V.

25 VIEWS

Views are contained in workspaces. A description of the various workspaces and views can be found under *Workspaces [▶Page 118]*.

You can adjust the views. For further information about this see *Adjusting the views [▶Page 126]* and *Adjusting the 3D view [▶Page 139]*.

25.1 ADJUSTING THE VIEWS

Some tools to adjust the views are only available for the active view. Information on how to activate a view can be found under *Changing the active view [▶Page 127]*.

An active view contains the following elements:
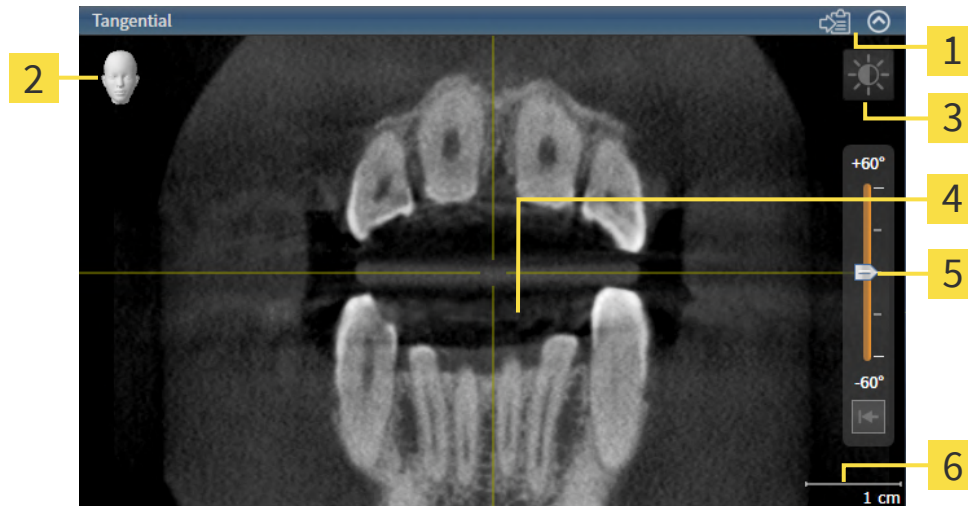
1	Title bar	**4**	Crosshair
2	Orientation head	**5**	Slider for tilt adjustment
3	View toolbar	**6**	Scale

2D slice views display crosshairs. Crosshairs are lines of intersection with other slice views. SICAT Endo synchronizes all slice views with each other. This means that all crosshairs show the same position within the 3D X-ray data. You can use this to match anatomical structures beyond the views.

The **3D** view shows frames, which illustrate the current position of the 2D slice views.

The following actions are available to adjust the views:

- *Changing the active view [▶Page 127]*

- *Maximizing and restoring views [▶Page 128]*

- *Adjusting and resetting the brightness and contrast of the 2D views [▶Page 129]*

- *Zooming views and panning views [▶Page 131]*

- *Scrolling through slices in the 2D slice views [▶Page 132]*

- *Moving, hiding and showing crosshairs and frames [▶Page 133]*

- *Moving, hiding, showing and maximizing the inspection window [▶Page 134]*

- *Tilting views [▶Page 136]*

- *Resetting views [▶Page 137]*

There are additional possibilities to adjust the **3D** view. Information on this can be found in the section *Adjusting the 3D view [▶Page 139]*.

You can document the content of an active view. Information on this can be found in the section *Creating screenshots of views [▶Page 138]*.

25.2 CHANGING THE ACTIVE VIEW

Only the active view shows the **View toolbar** and the title bar.

To activate a view, proceed as follows:

1. Place the mouse pointer over the desired view:

2. Click the desired view.

▶ SICAT Endo activates the view:
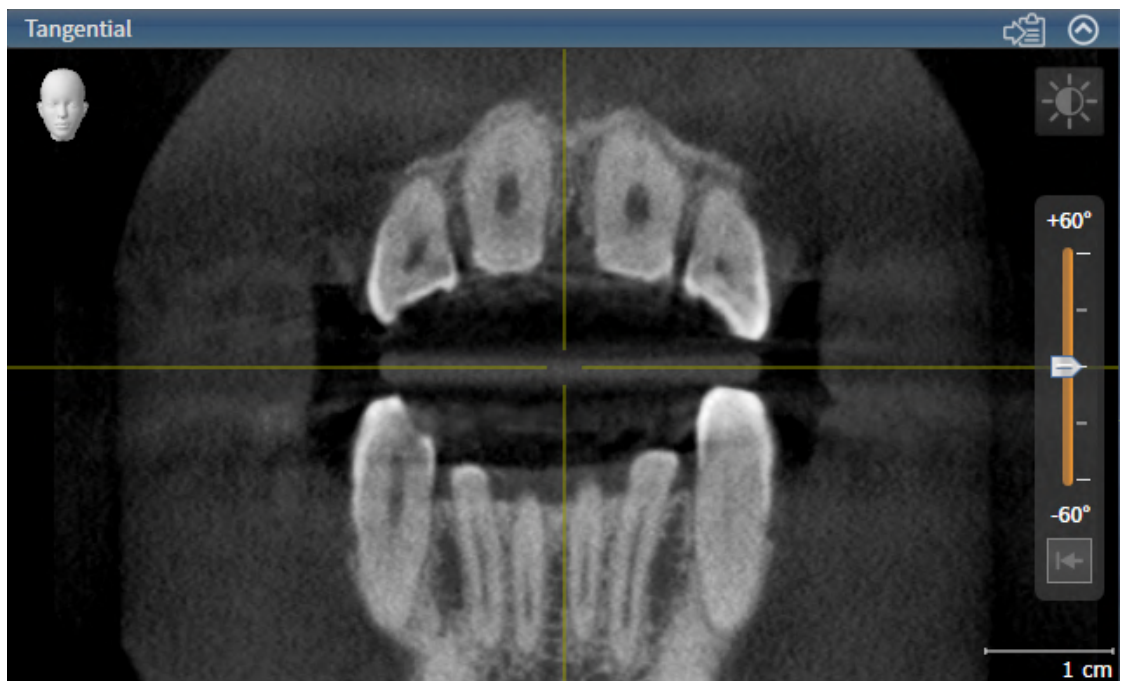
You can identify the activated view by the blue title bar.

25.3 MAXIMIZING AND RESTORING VIEWS

To maximize a view and restore it to its previous size, proceed as follows:

☑ The desired view is already active. Information on this can be found in the section *Changing the active view [▶Page 127]*.

☑ The desired view is not maximized.

1. Click on the **Maximize** icon in the title bar of the desired view.

   ► SICAT Endo maximizes the view.

2. Click on the **Restore** icon in the title bar of the maximized view.

   ► SICAT Endo restores the view to its previous size.

> The following alternatives are available to maximize views and restore them to their previous size:
>
> ■ To maximize a view, you can also double click on the title bar of the view you require.
>
> ■ To restore a view to its previous size, you can also double click on the title bar of the maximized view.

25.4 ADJUSTING AND RESETTING THE BRIGHTNESS AND CONTRAST OF THE 2D VIEWS

To adjust the brightness and contrast of a 2D view, proceed as follows:

☑ The desired 2D view is already active. Information on this can be found in the section *Changing the active view [*▶*Page 127]*.

1. Place the mouse pointer over the **Adjust brightness and contrast** icon in the **View toolbar** of the 2D view.

   ► The transparent **Adjust brightness and contrast** window opens:

2. Move the mouse pointer over the **Brightness** slider.

3. Click and hold the left mouse button and move the mouse up or down.

   ► SICAT Endo adjusts the brightness of the 2D view according to the position of the **Brightness** slider.

4. Release the left mouse button.

   ► SICAT Endo maintains the current brightness of the 2D view.

5. Move the mouse pointer over the **Contrast** slider.

6. Click and hold the left mouse button and move the mouse up or down.

   ► SICAT Endo adjusts the contrast of the 2D view according to the position of the **Contrast** slider.

7. Release the left mouse button.

   ► SICAT Endo maintains the current contrast of the 2D view.

8. Move the mouse pointer out of the transparent **Adjust brightness and contrast** window.

► The transparent **Adjust brightness and contrast** window closes.

To reset the brightness and contrast of the 2D view to the default values, click on the **Reset brightness and contrast** icon.

i   The brightness and contrast of all 2D slice views are linked together.

25.5 ZOOMING VIEWS AND PANNING VIEWS

ZOOMING A VIEW

Zooming magnifies or shrinks the contents of a view.

To zoom a view, proceed as follows:

1. Place the mouse pointer over the desired view.

2. Move the mouse wheel forwards.
   ▶ The view will zoom in.

3. Move the mouse wheel backwards.

▶ The view will zoom out.

> **ℹ** Alternatively, you can click on the mouse wheel and move the mouse up and down to zoom in or out.

PANNING A VIEW

To move a section in a view, proceed as follows:

1. Place the mouse pointer over the desired view.

2. Press and hold down the right mouse button.
   ▶ The mouse pointer changes.

3. Move the mouse.
   ▶ The section in the view will move according to the movement of the mouse pointer.

4. Release the right mouse button.

▶ SICAT Endo maintains the current position of the view.

25.6 SCROLLING THROUGH SLICES IN THE 2D SLICE VIEWS

To scroll through slices in a 2D slice view, proceed as follows:

1. Move the mouse pointer over the desired 2D slice view.

2. Click and hold the left mouse button.
   ► The mouse pointer becomes a two-way arrow.

3. Move the mouse up or down as desired.
   ► With the exception of the **Cross-Sectional** slice, all slices move in parallel.
   ► The **Cross-Sectional** slice moves along the panoramic curve.
   ► SICAT Endo adjusts the slices and crosshairs of other views according to the current focus point.
   ► SICAT Endo adjusts the frames of the **3D** views according to the current focus point.

4. Release the left mouse button.

► SICAT Endo maintains the current slice.

25.7 MOVING, HIDING AND SHOWING CROSSHAIRS AND FRAMES

MOVING A CROSSHAIR

To move the crosshair in a 2D slice view, proceed as follows:

☑ All crosshairs and frames are currently shown.

1. Move the mouse pointer in the view you require to the middle of the crosshair.

   ► The mouse pointer becomes a crosshair:

2. Click and hold the left mouse button.

3. Move the mouse.

   ► The crosshair in the view will track the movements of the mouse.

   ► SICAT Endo adjusts the slices and crosshairs of other views according to the current focus point.

   ► SICAT Endo adjusts the frames of the **3D** views according to the current focus point.

4. Release the left mouse button.

► SICAT Endo maintains the current position of the crosshair.

> **ℹ** To immediately move the crosshair to the position of the mouse pointer, you can also double click in a 2D view.

HIDING AND SHOWING CROSSHAIRS AND FRAMES

To hide and show all crosshairs and frames, proceed as follows:

☑ All crosshairs and frames are currently shown.

1. Click on the **Hide crosshairs and frames** icon in the **Workspace toolbar**.

   ► SICAT Endo hides the crosshairs in all 2D slice views.

   ► SICAT Endo hides the frames in the **3D** view.

2. Click on the **Show crosshairs and frames** icon.

   ► SICAT Endo shows the crosshairs in all 2D slice views.

   ► SICAT Endo shows the frames in the **3D** view.

25.8 MOVING, HIDING, SHOWING AND MAXIMIZING THE INSPECTION WINDOW

MOVING THE INSPECTION WINDOW

To move the **Inspection Window**, proceed as follows:

☑ The **Panorama** workspace or the **Radiograph** workspace is already open. Information on this can be found in the section *Changing the active workspace [▶Page 122]*.

☑ The **Inspection Window** is already shown:

1. Place the mouse pointer on the **Inspection Window** title bar in the **Panorama** view or the **Radiograph** view.

   ▶ The mouse pointer becomes a hand.

2. Click and hold the left mouse button.

3. Move the mouse.

   ▶ The **Inspection Window** tracks the movement of the mouse pointer.

   ▶ SICAT Endo adjusts the slices and crosshairs of other views according to the current focus point.

   ▶ SICAT Endo adjusts the frames of the **3D** view according to the current focus point.

4. Release the left mouse button.

▶ SICAT Endo maintains the current **Inspection Window** position.

HIDING, SHOWING AND MAXIMIZING THE INSPECTION WINDOW IN THE PANORAMA WORKSPACE

> **i** The **Set inspection window** icon is both a status indicator and a switch.

To hide, show and maximize the **Inspection Window**, proceed as follows:

☑ The **Panorama** workspace is already open. Information on this can be found in the section *Switching workspaces [▶Page 122]*.

☑ The **Inspection Window** is already shown.

1. Place the mouse pointer over the **Set inspection window** icon in the **View toolbar** of the **Panorama** view.

▶ SICAT Endo displays the icons for setting the inspection window:

2. Click on the **Hide inspection window** icon.

   ▶ SICAT Endo hides the **Inspection Window**.

3. Click on the **Use default inspection window size** icon.

   ▶ SICAT Endo shows the **Inspection Window**.

4. Click on the **Show maximized inspection window** icon.

   ▶ SICAT Endo maximizes the inspection window.

HIDING AND SHOWING THE INSPECTION WINDOW IN THE INTRAORAL SCAN WORKSPACE

> The **Set inspection window** icon is both a status indicator and a switch.

To hide and show the **Inspection Window**, proceed as follows:

☑ The **Radiograph** workspace is already open. Information on this can be found in the section *Switching workspaces [*▶*Page 122]*.

☑ The **Inspection Window** is already shown.

1. Click on the **Hide inspection window** icon in the **View toolbar** of the **Radiograph** view.

   ▶ SICAT Endo hides the **Inspection Window**.

2. Click on the **Use default inspection window size** icon in the **View toolbar** of the **Radiograph** view.

   ▶ SICAT Endo shows the **Inspection Window**.

25.9 TILTING VIEWS

In the **Panorama** workspace, you can tilt the **Tangential** and **Cross-Sectional** views. This allows you to optimize alignment in both views for viewing a specific anatomical structure (e. g. a tooth) or a planning object.
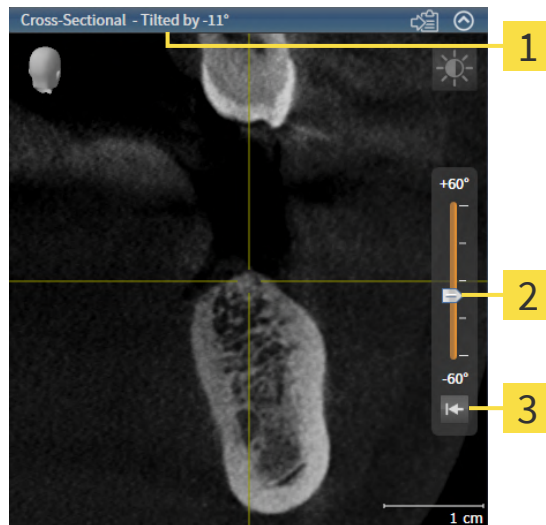
1 Currently set tilt   **3** **Reset tilt** button

2 Slider for tilt adjustment

☑ The **Panorama** workspace is already open. Information on this can be found in the section *Switching workspaces [▶Page 122]*.

☑ The **Tangential** or **Cross-Sectional** view is already active. Information on this can be found in the section *Changing the active view [▶Page 127]*.

■ To adjust the tilt, move the slider up or down to the desired tilt while pressing the mouse key. You can also change the tilt by clicking on the slider and using the **Up** and **Down** arrow keys.

▶ SICAT Endo tilts the active view and shows the currently set tilt in the title bar of the active view.

▶ SICAT Endo updates the line of the crosshair in the **Tangential** or **Cross-Sectional** view.

▶ SICAT Endo tilts the corresponding frame in the **3D** view.

i	You can reset the tilt to 0° by clicking the **Reset tilt** button.

25.10 RESETTING VIEWS

To reset all views, proceed as follows:

- ■   Click on the **Workspace toolbar** icon in the **Reset views**.

▶ SICAT Endo resets all views to the default values for zoom, panning, scrolling, moving the crosshairs and moving the **Inspection Window**.

▶ SICAT Endo resets the viewing direction of the **3D** view to the default value.

▶ SICAT Endo resets the tilt of views to 0°.

25.11 CREATING SCREENSHOTS OF VIEWS

You can take screenshots of the views to document them and output screenshots in the following ways:

- Copying to the Windows clipboard.

COPYING A SCREENSHOT OF A VIEW TO THE WINDOWS CLIPBOARD

To copy a screenshot of a view to the Windows clipboard, proceed as follows:

☑ The desired view is already active. Information on this can be found in the section *Changing the active view [▶Page 127]*.

- Click on the **Copy screenshot to clipboard (Ctrl+C)** icon in the title bar of the view.

▶ SICAT Endo copies a screenshot of the view to the Windows clipboard.

> You can add screenshots from the clipboard to several applications, such as image processing software and word processors. In most applications, the paste shortcut key is Ctrl+V.

26 ADJUSTING THE 3D VIEW

You can change the direction of the **3D** view at any time. Information on this can be found in the section *Changing the direction of the 3D view [▶Page 140]*.

The following actions are available to configure the **3D** view:

- *Switching the display mode of the 3D view [▶Page 141]*

- *Configuring the active display mode of the 3D view [▶Page 142]*

- *Rotating the 3D view [▶Page 208]*

- *Switching off and switching on the display of optical impressions in color [▶Page 145]*

26.1 CHANGING THE DIRECTION OF THE 3D VIEW

There are two ways to change the direction of the **3D** view:

- Interactive changes

- Selecting a standard viewing direction

INTERACTIVELY CHANGING THE DIRECTION OF THE 3D VIEW

To interactively change the direction of the **3D** view, proceed as follows:

1. Place the mouse pointer on the **3D** view.

2. Click and hold the left mouse button.
    ► The mouse pointer becomes a hand.

3. Move the mouse.
    ► The viewing direction changes according to the movement of the mouse.

4. Release the left mouse button.

► SICAT Endo keeps the current viewing direction of the **3D** view.

SELECTING A STANDARD VIEWING DIRECTION

To select a standard viewing direction in the **3D** view, proceed as follows:

1. Place the mouse pointer over the Orientation head icon in the top left corner of the **3D** view.
    ► The transparent **Viewing direction** window opens:

► In the middle of the transparent **Viewing direction** window, the highlighted Orientation head shows the current viewing direction.

2. Click on the Orientation head icon that shows the desired standard viewing direction.
    ► The direction of the **3D** view changes according to your selection.

3. Move the mouse pointer out of the transparent **Viewing direction** window.

► The transparent **Viewing direction** window closes.

To change the viewing direction of the **3D** view, you can rotate the **3D** view. Information on this can be found in the section *Rotating the 3D view [*►*Page 208]*.

26.2 SWITCHING THE DISPLAY MODE OF THE 3D VIEW

> **ℹ** All display modes are available in all workspaces.

To change the display mode of the **3D** view, proceed as follows:

☑ The **3D** view is already active. Information on this can be found in the section *Changing the active view [▶Page 127].*

1. Place the mouse pointer over the **Switch display mode** icon in the **View toolbar** of the **3D** view.

   ▶ The transparent **Switch display mode** window opens:
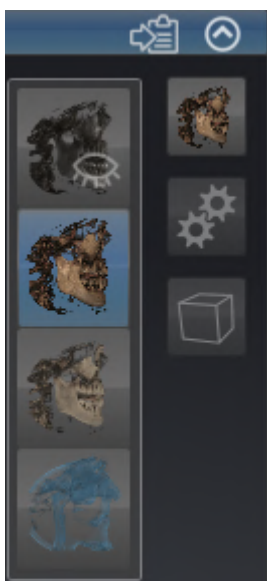
2. Click on the icon for the desired display mode.

   ▶ SICAT Endo activates the desired display mode.

3. Move the mouse pointer out of the transparent **Switch display mode** window.

▶ The transparent **Switch display mode** window closes.

26.3 CONFIGURING THE ACTIVE DISPLAY MODE OF THE 3D VIEW

> ℹ️ Only configurable display modes show the **Configure active display mode** icon. The transparent **Configure active display mode** window only shows the settings that are relevant for the active display mode.

To configure the active display mode of the **3D** view, proceed as follows:

☑ The **3D** view is already active. Information on this can be found in the section *Changing the active view [▶Page 127]*.

☑ The desired display mode is already active. Information on this can be found in the section *Switching the display mode of the 3D view [▶Page 141]*.

☑ The active display mode is configurable.

1. Place the mouse pointer over the **Configure active display mode** icon in the **View toolbar** of the **3D** view.

   ▶ The transparent **Configure active display mode** window opens:
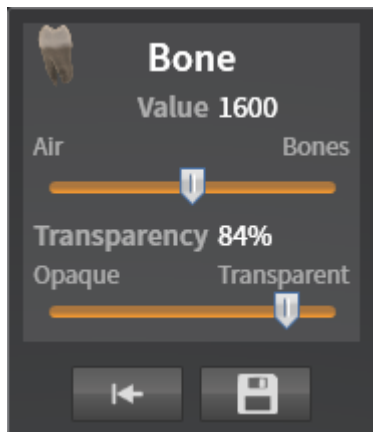
2. Move the slider you require.

   ▶ SICAT Endo adjusts the **3D** view according to the position of the slider.

3. Where available, click on the arrow icon next to .**Advanced**.

   ▶ The **Advanced** area expands.

4. Activate or deactivate the available check box.

   ▶ SICAT Endo adjusts the **3D** view according to the status of the check box.

5. Move the slider you require.

   ▶ SICAT Endo adjusts the **3D** view according to the position of the slider.

6. Move the mouse pointer out of the transparent **Configure active display mode** window.

▶ The transparent **Configure active display mode** window closes.

You can reset to the default settings by clicking the **Reset configuration of active display mode to default values** button.

You can save the current settings as default settings by clicking the **Save configuration of active display mode as default values** button.

26.4 CHANGING THE CLIPPING MODE OF THE 3D VIEW

To change the clipping mode of the **3D** view, proceed as follows:

☑ The **3D** view is already active. Information on this can be found in the section *Changing the active view [*▶*Page 127]*.

1. Place the mouse pointer over the **Switch clipping mode** icon in the **View toolbar** of the **3D** view.

   ► The transparent **Switch clipping mode** window opens:

2. Click on the icon of the desired clipping mode.

   ► SICAT Endo activates the desired clipping mode.

3. Move the mouse pointer out of the transparent **Switch clipping mode** window.

► The transparent **Switch clipping mode** window closes.

26.5 SWITCHING OFF AND SWITCHING ON THE DISPLAY OF OPTICAL IMPRESSIONS IN COLOR

In the **3D** view, optical impressions are automatically displayed in color if you have previously imported optical impressions in color and display in color is activated.

You can switch the display of optical impressions in color to a monochrome display if only the exact recognition of the shape and geometry is important.

☑ The **3D** view is already active. Information on this can be found in the section *Changing the active view [▶Page 127]*.

1. Click on the **Turn the colored display for optical impressions off** icon in the **View toolbar**.
   ▶ SICAT Endo switches from display in color to monochrome display.

2. Click on the **Turn the colored display for optical impressions on** icon in the **View toolbar**.
   ▶ SICAT Endo switches from monochrome display to display in color.

27 GRAY SCALE VALUES

> **i** You can only adjust gray scale values for volumes, which have been created by non-Sirona 3D X-ray devices.

If the illustration of the volume is insufficient, you can adjust the gray scale values of the volume in the **Adjust Gray Values** window:
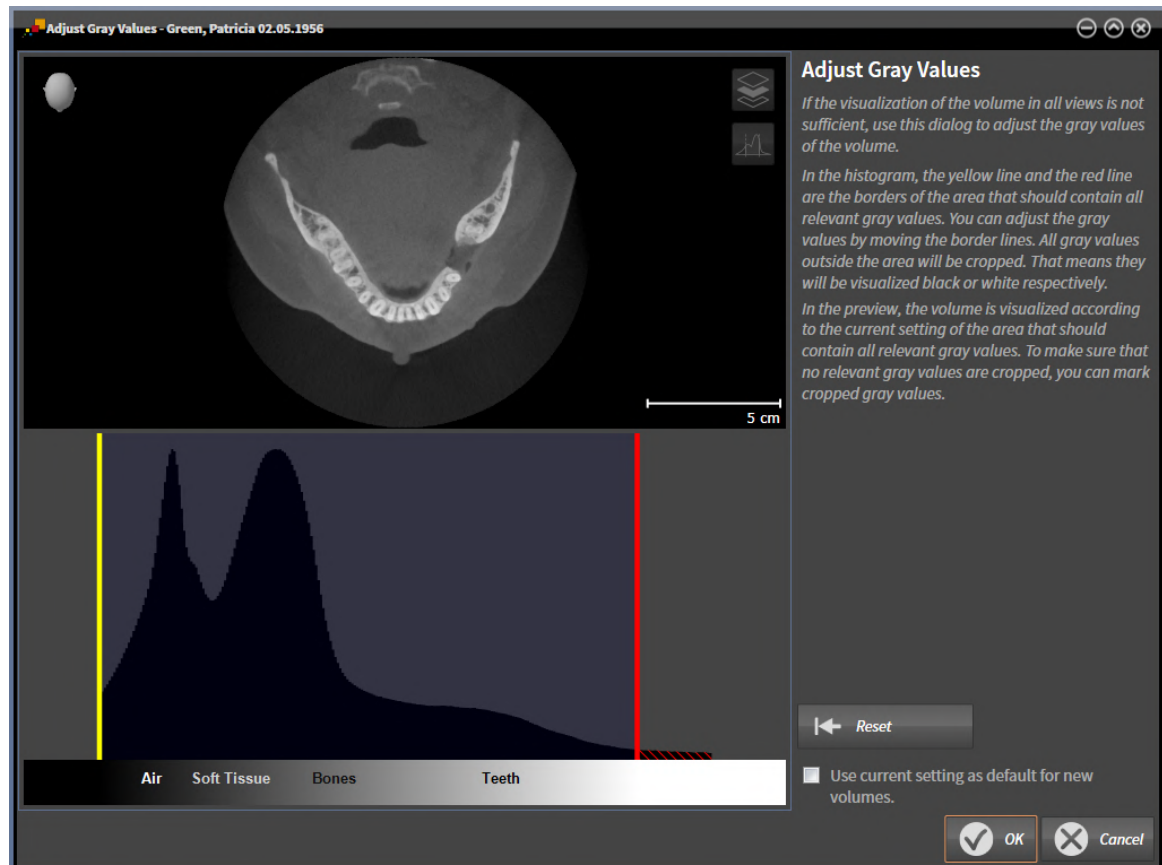
The **Adjust Gray Values** window has two parts:

- The upper section shows an **Axial** slice view or a **Coronal** projection view.

- The lower section shows a histogram with the frequency distribution of the gray scale values.

In the histogram, the yellow and red lines show the borders of the area, which should contain all of the relevant gray scale values. You can adjust the gray scale values by moving the limits. SICAT Endo cuts all gray scale values outside the area. This means that the software shows them either in black or white.

SICAT Endo displays the volume in the **Axial** slice view or **Axial** projection view according to the area which should contain all of the relevant gray scale values. To ensure that SICAT Endo does not hide any relevant image information, the software can label gray scale values that have been cropped out.

In the **Axial** slice view, you can scroll through the layers and check them for cropped-out gray values.

In the **Coronal** projection view, you can check all slices for cropped-out gray values simultaneously.

Only adjust the gray scale values if the illustration of the volume is insufficient in all views. Information on this can be found in the section *Adjusting gray scale values [▶Page 148]*.

For example, to highlight certain anatomical structures, you can temporarily adjust the brightness and contrast of the 2D views. Information on this can be found in the section *Adjusting and resetting the brightness and contrast of the 2D views [▶Page 129]*.

You can also adjust the display of the **3D** view. For further information see *Switching the display mode of the 3D view [▶Page 141], Configuring the active display mode of the 3D view [▶Page 142]* and *Changing the clipping mode of the 3D view [▶Page 144]*.

27.1 ADJUSTING GRAY SCALE VALUES

General information on gray scale values can be found in the section *Gray scale values [▶Page 146]*.

To adjust the gray scale values of the volume, proceed as follows:

☑ The **Prepare** workflow step is already expanded.

1. Click on the **Adjust gray values** icon.

   ▶ The **Adjust Gray Values** window opens:
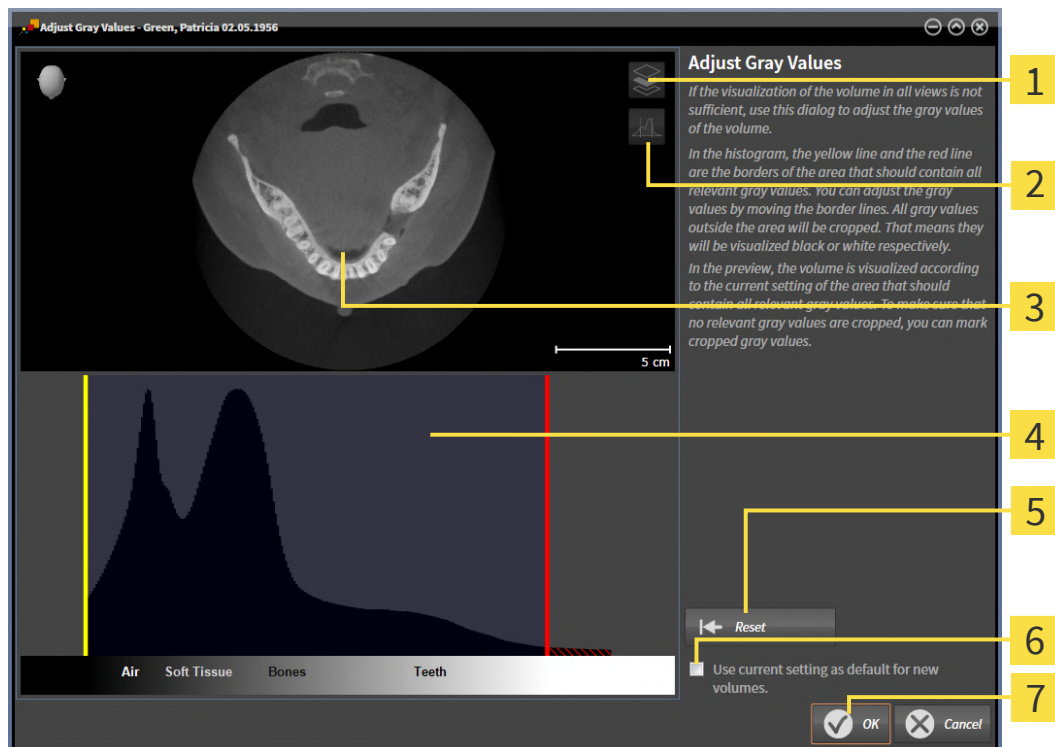
1	**Enable coronal projection mode** icon or **Enable axial slices mode** icon
2	**Unmark cropped gray values** icon or **Mark cropped gray values** icon
3	**Axial** slice view or **Coronal** projection view
4	Histogram
5	**Reset** button
6	**Use current setting as default for new volumes** check box
7	**OK** button

2. Make sure that the axial slice mode is active. Click on the **Enable axial slices mode** icon if necessary.

3. Move the yellow line to adjust the lower border of the area, which should contain all of the relevant gray scale values.

   ▶ SICAT Endo adjusts all gray scale values in the **Axial** slice view accordingly.

▶ SICAT Endo marks all gray scale values beneath the lowest relevant gray scale value in yellow.

4. Scroll through the axial slices. Make sure that all of the relevant gray scale values have not been marked yellow. Move the yellow line again if necessary.

5. Move the red line to adjust the upper border of the area, which should contain all of the relevant gray scale values.

    ▶ SICAT Endo adjusts all gray scale values in the **Axial** slice view accordingly.

    ▶ SICAT Endo labels all gray scale values above the highest relevant gray scale value in red.

6. Scroll through the axial slices. Make sure that all of the relevant gray scale values have not been marked red. Move the red line again if necessary.

7. Click on **OK**.

▶ The **Adjust Gray Values** window closes and SICAT Endo displays the volume with the correspondingly adjusted gray scale values in all views.

In addition to the steps described, the following actions are available in the **Adjust Gray Values** window as well:

- To assess all of the slices at once, click on the **Enable coronal projection mode** icon. Click on the **Enable axial slices mode** icon to switch back to the **Axial** slice view.

- To move both borders at once, you can click on and move the area that should contain all of the relevant gray scale values.

- To reset the area that should contain all relevant gray scale values to the default settings, click on the **Reset** button.

- If you do not want to mark the cropped gray scale values, click on the **Unmark cropped gray values** icon.

- To use the set area as default for future imported volumes, you can enable the check box **Use current setting as default for new volumes**.

- If you do not want to save your changes, click on **Cancel**.

---

28 ADJUSTING VOLUME ORIENTATION AND PANORAMIC REGION

> ℹ️ If an adjustment of the volume orientation is required, perform this when starting work on the 3D X-ray scan. If you adjust the volume orientation later, you may have to repeat your diagnosis or planning under certain circumstances.

VOLUME ORIENTATION

You can adjust the volume orientation for all views by rotating the volume around the three principal axes. This may be necessary in the following cases:

- Sub-optimal positioning of the patient during the 3D X-ray scan

- Orientation according to case, for example orientation of the axial slices parallel to the Frankfurt plane or parallel to the bite plane

- Optimizing the **Panorama** view

If you adjust the volume orientation in SICAT Endo, SICAT Endo applies your settings to your currently open planning.

Information on how to adjust the volume orientation can be found in the section *Adjusting the volume orientation* [▶*Page 152*].

PANORAMIC REGION

SICAT Endo calculates the **Panorama** view on the basis of the volume and panoramic region. To optimize the **Panorama** view, you should adjust the panoramic region to both jaws of the patient. This is vital for effective and efficient diagnosis and treatment planning.
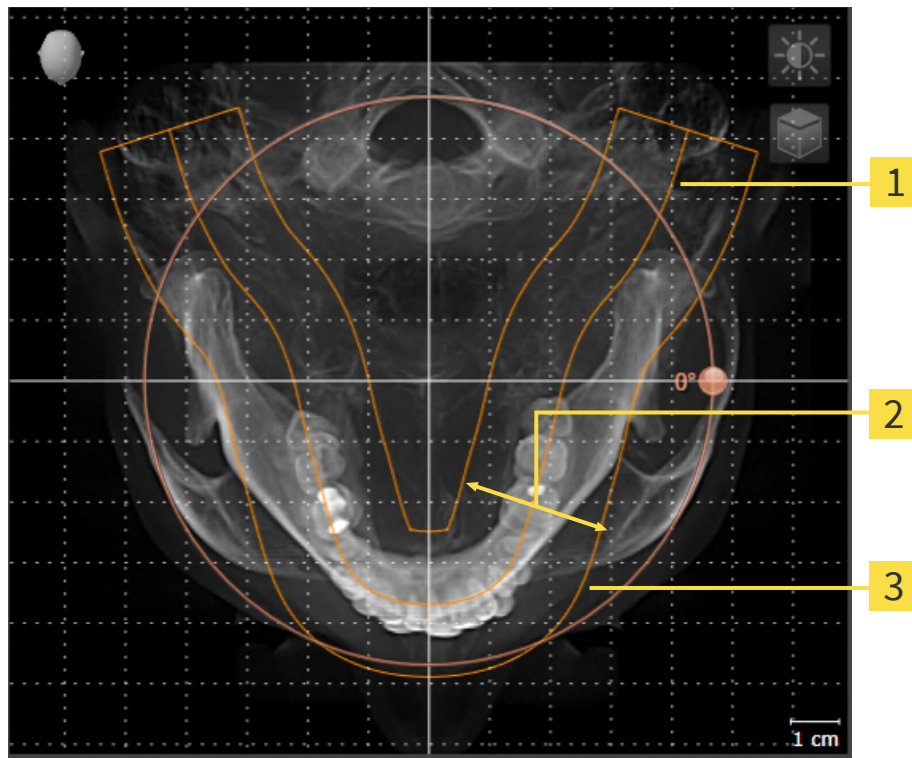
1   Panoramic curve

2   Thickness

3   Panoramic region

The panoramic region is defined by the two following components:

■ Shape and position of the panoramic curve

■ Thickness of the panoramic region

Both of the following conditions must be met to optimally adjust the panoramic region:

■ The panoramic region must contain all teeth and both jaws in full.

■ The panoramic region should be as thin as possible.

If you adjust the panoramic region in SICAT Endo, SICAT Endo applies your settings to your currently open planning.

Information on adjusting the panoramic region can be found in the section *Adjusting the panoramic region [▶Page 157]*.

28.1 ADJUSTING THE VOLUME ORIENTATION

General information on volume orientation can be found in the section *Adjusting volume orientation and panoramic region [▶Page 150]*.

The adjustment of the volume orientation consists of the following steps:

- Opening the **Adjust Volume Orientation and Panoramic Region** window
- Rotating volumes in the **Coronal** view
- Rotating volumes in the **Sagittal** view
- Rotating volumes in the **Axial** view

OPENING THE "ADJUST VOLUME ORIENTATION AND PANORAMIC REGION" WINDOW

☑ The **Prepare** workflow step is already expanded.

- Click on the **Adjust volume orientation and panoramic region** icon.

▶ The **Adjust Volume Orientation and Panoramic Region** window opens:
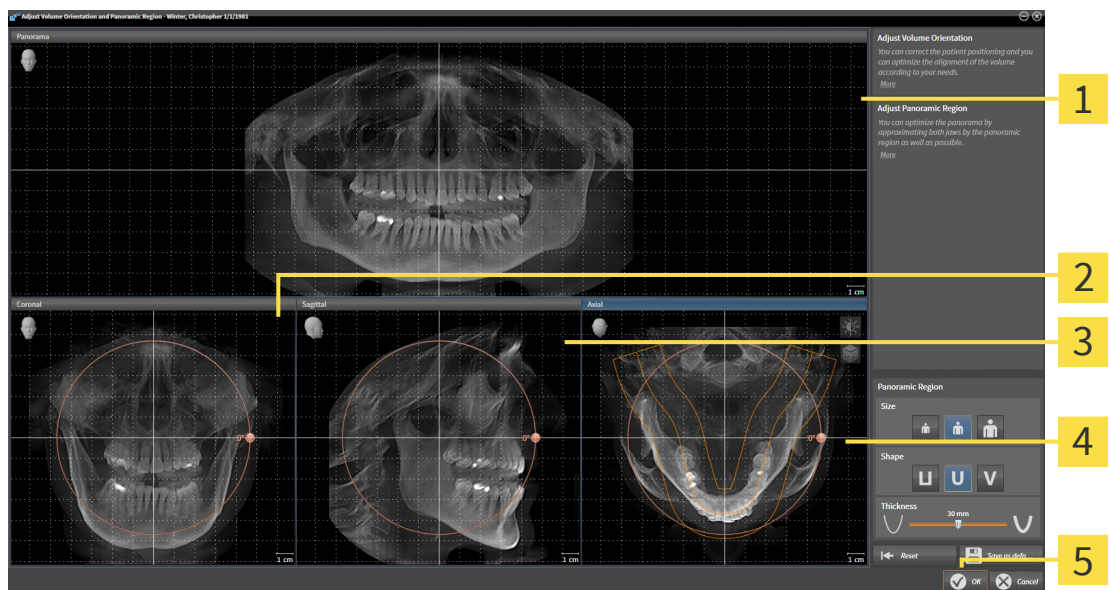
1	**Panorama** view	**4**	**Axial** view with **Rotation** slider
2	**Coronal** view with **Rotation** slider	**5**	**OK** button
3	**Sagittal** view with **Rotation** slider		

ROTATING VOLUMES IN THE CORONAL VIEW

1. Activate the **Coronal** view:

1	**Enable slices mode** icon or **Enable projection mode** icon	**4**	Horizontal reference line
2	Center of rotation	**5**	Vertical reference line
3	**Rotation** slider		

2. Make sure that the projection mode is active. If the slice mode is active, click on the **Enable projection mode** icon.

3. Place the mouse pointer on the **Rotation** slider.

4. Click and hold the left mouse button.

5. Move the **Rotation** slider along the circle in the desired direction.

   ▶ SICAT Endo rotates the volume in the **Coronal** view in a circle around the center of rotation and in the other views accordingly.

6. Release the left mouse button when you have reached the desired rotation of the volume. Orientate yourself using the horizontal reference lines, the vertical reference lines and the grid.

ROTATING VOLUMES IN THE SAGITTAL VIEW

1. Activate the **Sagittal** view:

1	**Enable slices mode** icon or **Enable projection mode** icon	4	Horizontal reference line
2	Center of rotation	5	Vertical reference line
3	**Rotation** slider		

2. Make sure that the projection mode is active. If the slice mode is active, click on the **Enable projection mode** icon.

3. Place the mouse pointer on the **Rotation** slider.

4. Click and hold the left mouse button.

5. Move the **Rotation** slider along the circle in the desired direction.

   ► SICAT Endo rotates the volume in the **Sagittal** view in a circle around the center of rotation and in the other views accordingly.

6. Release the left mouse button when you have reached the desired rotation of the volume. Orientate yourself using the horizontal reference lines, the vertical reference lines and the grid.

ROTATING VOLUMES IN THE AXIAL VIEW

1. Activate the **Axial** view:
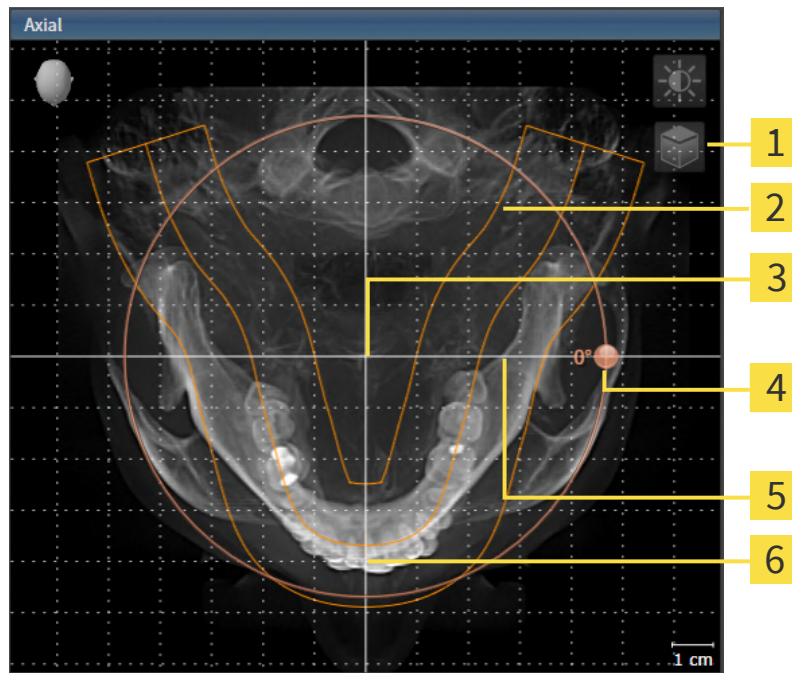
1	**Enable slices mode** icon or **Enable projection mode** icon	**4**	**Rotation** slider
2	Panoramic region	**5**	Horizontal reference line
3	Center of rotation	**6**	Vertical reference line

2. Make sure that the projection mode is active. If the slice mode is active, click on the **Enable projection mode** icon.

3. Where necessary, move the panoramic region in the **Axial** view by left clicking on the panorama view and holding the left button as you move the mouse. SICAT Endo moves the center of rotation, the horizontal reference lines and the vertical reference lines accordingly.

4. Place the mouse pointer on the **Rotation** slider.

5. Click and hold the left mouse button.

6. Move the **Rotation** slider along the circle in the desired direction.

   ▶ SICAT Endo rotates the volume in the **Axial** view in a circle around the center of rotation and in the other views accordingly.

7. Release the left mouse button when you have reached the desired rotation of the volume. Orientate yourself using the panoramic region, the horizontal reference lines, vertical reference lines and the grid.

8. To save your changes, click **OK**.

   ▶ If the change of the volume orientation affects existing objects in SICAT Endo, SICAT Endo opens a message window which states the exact impact.

9. If you still want to adjust the volume orientation, click on the **Adjust** button in the message window.

▶ SICAT Endo saves the altered volume orientation and displays the volume with the corresponding orientation in all views.

> In addition to the described process, the following actions are available in the **Adjust Volume Orientation and Panoramic Region** window:
>
> ■ You can adjust the brightness and contrast of a 2D image by activating the desired view and clicking the **Adjust brightness and contrast** icon. Information on this can be found in the section *Adjusting and resetting the brightness and contrast of the 2D views [▶Page 129]*.
>
> ■ You can zoom in the views. SICAT Endo synchronizes the zoom between the **Coronal** view and the **Sagittal** view.
>
> ■ To save the current volume orientation and panoramic region as a default, click on the **Save as default** button.
>
> ■ To reset the volume orientation and panoramic region to the last saved default setting, click on the **Reset** button.
>
> ■ If you do not want to save your changes, click on **Cancel**.
>
> ■ If you have opened data in viewer mode, your customizations will no longer be active after you close the data.

28.2 ADJUSTING THE PANORAMIC REGION

General information on the panoramic region can be found in the section *Adjusting volume orientation and panoramic region [*▶*Page 150]*.

The adjustment of the panoramic region consists of the following steps:

- Opening the **Adjust Volume Orientation and Panoramic Region** window
- Adjusting the slice position of the **Axial** view
- Moving the panoramic region
- Rotating volumes in the **Axial** view
- Adjusting **Size**, **Shape** and **Thickness** of the panoramic region

OPENING THE "ADJUST VOLUME ORIENTATION AND PANORAMIC REGION" WINDOW

☑ The **Prepare** workflow step is already expanded.

- Click on the **Adjust volume orientation and panoramic region** icon.

▶ The **Adjust Volume Orientation and Panoramic Region** window opens:
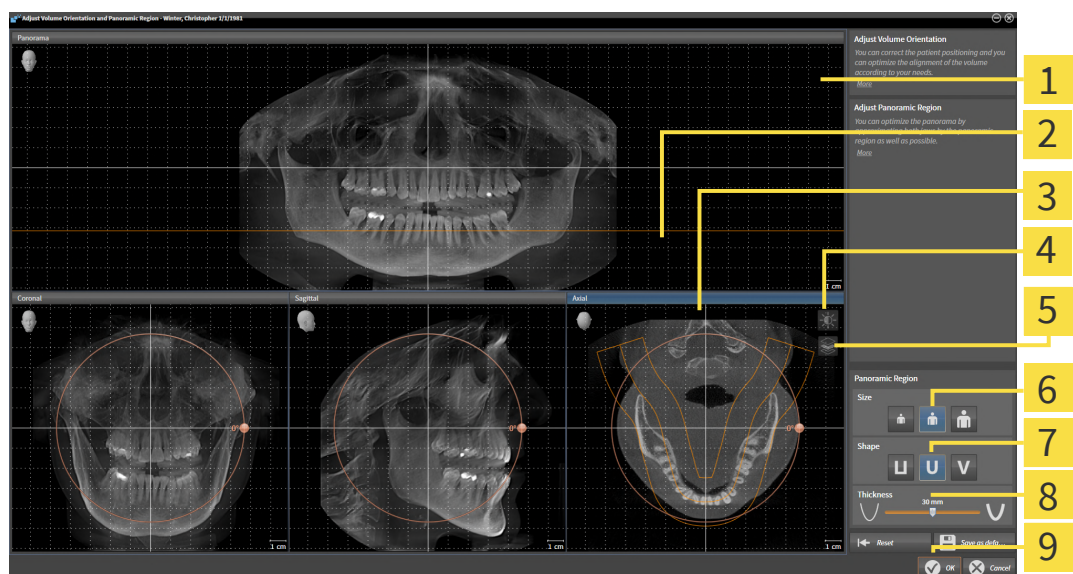
1	**Panorama** view	**6**	**Size** buttons
2	Axial reference line	**7**	**Shape** buttons
3	**Axial** view with **Rotation** slider	**8**	**Thickness** slider
4	**Adjust brightness and contrast** icon	**9**	**OK** button
5	**Enable projection mode** icon or **Enable slices mode** icon		

ADJUSTING THE SLICE POSITION OF THE AXIAL VIEW

1. Make sure that the slice mode of the **Axial** view is active. If the projection mode is active, click on the **Enable slices mode** icon.

2. Place the mouse pointer on the axial reference line in the **Panorama** view. The axial reference line illustrates the current slice position of the **Axial** view.

3. Click and hold the left mouse button.

4. Move the mouse up or down as desired.
   ► The slice in the **Axial** view will change according to the position of the axial reference lines in the **Panorama** view.

5. When the axial reference line is on the roots of the mandibular teeth, release the left mouse button.
   ► The **Axial** view maintains the current slice.

MOVING THE PANORAMIC REGION

1. Place the mouse pointer on the panoramic region in the **Axial** view.

2. Click and hold the left mouse button.
   ► The mouse pointer changes.

3. Move the mouse.
   ► SICAT Endo moves the panoramic region according to the position of the mouse pointer.

4. When the central curve of the panoramic region is on the roots of the mandibular teeth, release the left mouse button.
   ► The panoramic region will remain in its current position.

ROTATING VOLUMES IN THE AXIAL VIEW

1. Place the mouse pointer on the **Rotation** slider in the **Axial** view.

2. Click and hold the left mouse button.

3. Move the **Rotation** slider along the circle in the direction you require.
   ► SICAT Endo rotates the volume in the **Axial** view in a circle accordingly around the center of rotation and in the other views accordingly.

4. When the roots of the mandibular teeth follow the central curve of the panoramic region, release the left mouse button.

ADJUSTING THE SIZE, SHAPE AND THICKNESS OF THE PANORAMIC REGION

1. Make sure that the projection mode is active. If the slice mode is active, click on the **Enable projection mode** icon.

2. Select the **Size** of the panoramic region that best reflects the mandible of the patient by clicking on the corresponding **Size** button.

3. Select the **Shape** of the panoramic region that best reflects the mandible of the patient by clicking on the corresponding **Shape** button.

4. Select the **Thickness** of the panoramic region by moving the **Thickness** slider. Make sure that the panoramic region contains all teeth and both jaws in full. Keep the thickness as low as possible.

5. To save your changes, click **OK**.

    ▶ If the change of the panoramic region affects existing objects in SICAT Endo, SICAT Endo opens a message window which states the exact impact.

6. If you still want to adjust the panoramic region, click on the **Adjust** button in the message window.

▶ SICAT Endo saves the altered volume orientation and altered panoramic region and displays the **Panorama** view accordingly.

> In addition to the described process, the following actions are available in the **Adjust Volume Orientation and Panoramic Region** window:
>
> ■ You can adjust the brightness and contrast of a 2D image by activating the desired view and clicking the **Adjust brightness and contrast** icon. Information on this can be found in the section *Adjusting and resetting the brightness and contrast of the 2D views [▶Page 129]*.
>
> ■ You can zoom in the views. SICAT Endo synchronizes the zoom between the **Coronal** view and the **Sagittal** view.
>
> ■ To save the current volume orientation and panoramic region as a default, click on the **Save as default** button.
>
> ■ To reset the volume orientation and panoramic region to the last saved default setting, click on the **Reset** button.
>
> ■ If you do not want to save your changes, click on **Cancel**.
>
> ■ If you have opened data in viewer mode, your customizations will no longer be active after you close the data.

29 OPTICAL IMPRESSIONS

SICAT Endo can overlay (register) matching 3D X-ray data and optical impressions for the same patient. The overlaid representation provides additional information for planning and implementation. This allows you to implement the therapy based on optical impressions.

To use optical impressions, proceed as follows:

1. Import of optical impressions using the following import methods:

   – *Downloading optical impressions from the Hub [▶Page 162]*

   – *Importing optical impressions from a file [▶Page 165]*

   – *Re-using optical impressions from SICAT applications [▶Page 168]*

2. Registration (overlay) of the optical impressions with 3D X-ray data: *Registering and checking optical impressions [▶Page 169]*

> **i** Registration is not required if optical impressions from a SICAT application are reused.

SICAT Endo supports the following data formats for optical impressions:

■ SIXD data records that contain an optical impression of the maxilla or the mandible (at least 75 % of the maxillary and mandibular arch). Use this format if you are using a CEREC system that supports the SIXD format.

■ SSI data records that contain an optical impression of the maxilla and the mandible (at least 75 % of the maxillary and mandibular arch). Use this format if you are using a CEREC system that does **not** support the SIXD format.

■ STL data records* that contain an optical impression of the maxilla **or** the mandible (at least 75 % of the maxillary and mandibular arch). Use this format if you are using another CAD/CAM system that supports the STL format.

*You need an activated **SICAT Suite STL Import** license for STL data records. Additional steps must be observed when importing. Information on this can be found in the section *Additional steps for optical impressions in STL format [▶Page 167]*.

The following actions are available for optical impressions:

■ Activating, hiding and showing optical impressions: *Managing objects with the object browser [▶Page 111]*

■ Focusing on and removing optical impressions: *Managing objects with the object toolbar [▶Page 113]*

■ Setting the display of optical impressions in color: *Switching off and switching on the display of optical impressions in color [▶Page 145]*

29.1 IMPORTING OPTICAL IMPRESSIONS

⚠ **CAUTION**	**The use of other data as 3D X-ray scans as a lone source of information may result in an incorrect diagnosis and treatment.** 1. Use 3D X-ray scans as a preferred source of information for diagnosis and planning. 2. Use other data, such as optical impressions, only as an auxiliary source of information.
⚠ **CAUTION**	**Inappropriate optical impression devices could result in incorrect diagnosis and treatment.** Only use optical impression data from devices cleared as medical devices.
⚠ **CAUTION**	**Optical impression data that does not match patient and date of 3D X-ray data could result in incorrect diagnosis and treatment.** Make sure the patient and date of the imported optical impression data match the patient and date of the visualized 3D X-ray data.
⚠ **CAUTION**	**Insufficient integrity or quality of optical impressions may result in an incorrect diagnosis and treatment.** Check the integrity and quality of the optical impressions imported.
⚠ **CAUTION**	**Insufficient integrity and precision of optical impressions may result in an incorrect diagnosis and treatment.** Only use optical impressions of a sufficient quality and precision for the intended diagnosis and treatment.

29.1.1 DOWNLOADING OPTICAL IMPRESSIONS FROM THE HUB

You can download optical impressions in SIXD format from the Hub and import them into SICAT Endo.

☑ The connection to the Hub is established. Information on this can be found in the section *Activating and deactivating Hub use* [▶*Page 254*].

☑ The license for using the Hub is activated. Information on this can be found in the section *Licenses* [▶*Page 56*].

☑ The **Prepare** workflow step is expanded.

1. Click on the **Import and Register Optical Impressions** icon.

   ► SICAT Endo opens the **Import and Register Optical Impressions** wizard with the step **Import**.

2. Click on the **Download from Hub** tab.

3. Select a patient.

   ► SICAT Endo displays outstanding scan jobs and available optical impressions.
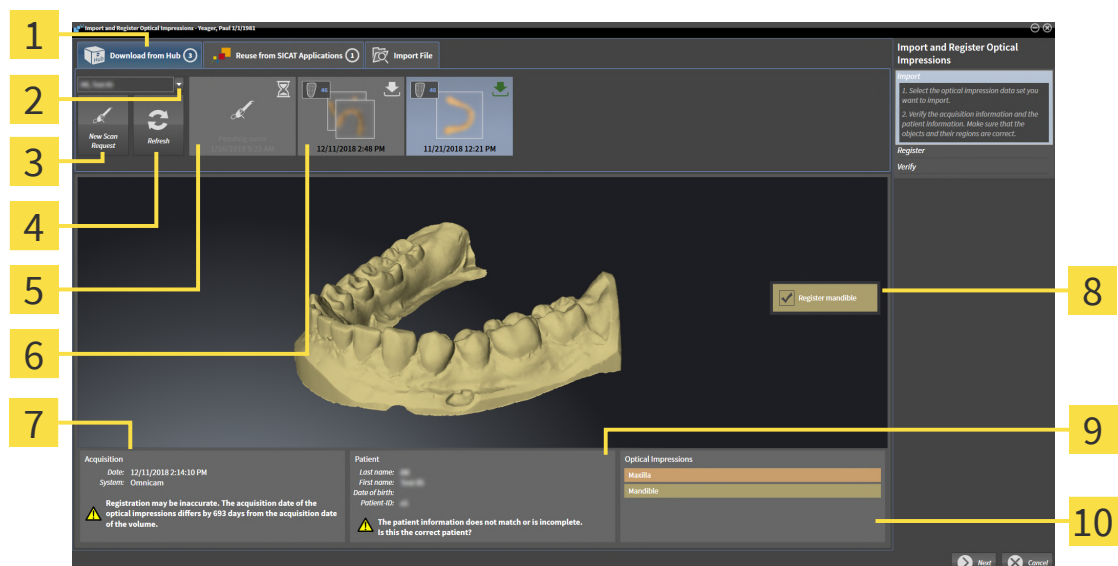
1	**Download from Hub** tab	**6**	Available optical impressions with status: ⬇ not yet downloaded / 🟩 already downloaded
2	**Patient selection** button	**7**	Scan information
3	**New Scan Request** button	**8**	Selection for registration
4	**Refresh** button	**9**	Patient information
5	Scan request with status: ⌛ pending / ⬇ not yet downloaded	**10**	**Optical Impressions** area

4. Click on the desired optical impression.

   ► SICAT Endo downloads the optical impression if the impression has not already been downloaded. After the impression has been downloaded, SICAT Endo displays the impression in the **3D** view.

   ► The maxilla or mandible is preselected for registration.

5. Check the selection for registration.

6. Check whether the scan information and patient information match.

7. Check that the correct jaw is displayed in the **Optical Impressions** area.

8. Click **Next**.

    ► If the patient data in the 3D X-ray scan and in the optical impression differ,SICAT Endo will open the **Different Patient Information** window:
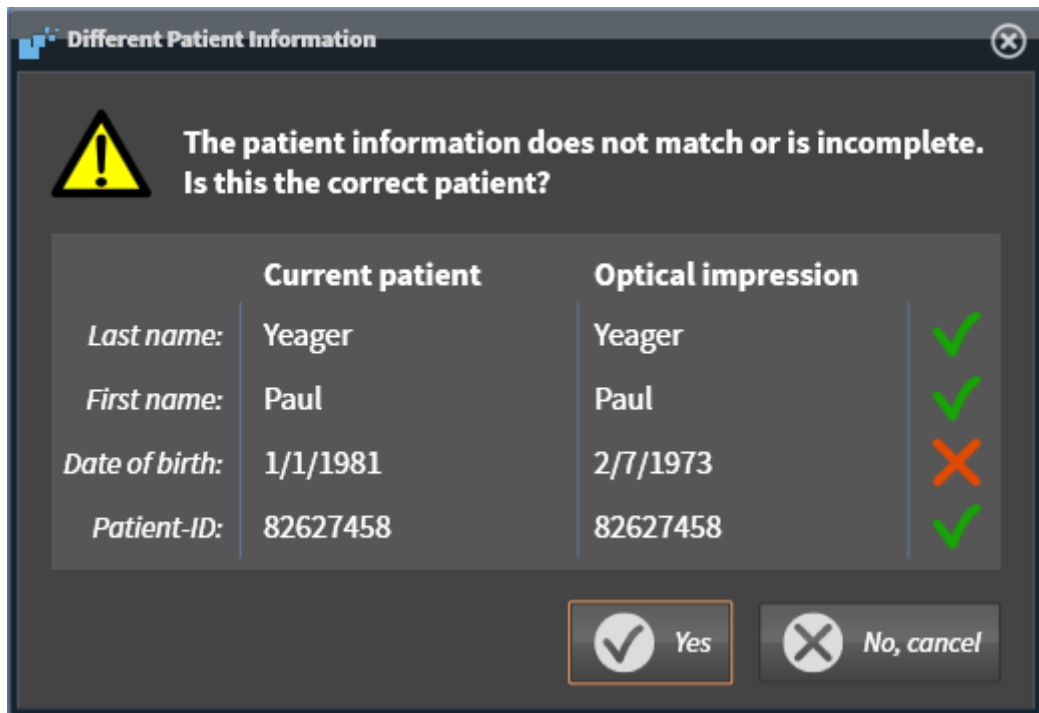
9. Compare the patient information. If you are sure that, despite different patient information, the optical impression matches the current patient, click on the **Yes** button.

    ► The **Register** step opens for the optical impression. Follow the steps in section *Registering and checking optical impressions [▶Page 169]*.

> ℹ To enable you to check whether the 3D X-ray data and the optical impressions match, the **Import and Register Optical Impressions** wizard always shows the patient data and ignores the **Anonymize** setting.

> ℹ
> ▪ If the desired optical impression is not displayed, you can refresh the overview by clicking on the **Refresh** button. Alternatively, you can send a scan request for recording the optical impression to the Hub. Information on this can be found in the section *Creating a scan request for an optical impression [▶Page 164]*.
>
> ▪ In the default setting, the connection to the Hub is disconnected. Information on adjusting the connection can be found in the section *Activating and deactivating Hub use [▶Page 254]*.
>
> ▪ You can use the Hub if you have activated the corresponding license to use the Hub. Information on this can be found in the section *Licenses [▶Page 56]*.

29.1.1.1 CREATING A SCAN REQUEST FOR AN OPTICAL IMPRESSION

You can send a request for scanning optical impressions to the Hub.

☑ The connection to the Hub is established. Information on this can be found in the section *Activating and deactivating Hub use [▶Page 254]*.

☑ The license for using the Hub is activated. Information on this can be found in the section *Licenses [▶Page 56]*.

☑ The **Prepare** workflow step is already expanded.

1. Click on the **Import and Register Optical Impressions** icon.

   ► The **Import and Register Optical Impressions** wizard opens with the **Import** step.

2. Click on the **Download from Hub** tab.

3. Select a patient.

   ► SICAT Endo displays outstanding scan jobs and available optical impressions.

4. Click on the **New Scan Request** icon.

   ► SICAT Endo displays the **New Scan Request** window. You can now define specifications for the scan request.

5. Select a dentist.

6. **Defining the scan region:** Check the box Maxilla and/or Mandible.

7. If necessary, enter additional information such as scanning instructions.

8. To send the scan request to the Hub, click on **Create scan request** and confirm the query with OK.

► SICAT Endo sends the scan request to the Hub and displays the pending scan request in the **Download from Hub** tab with the icon ⧗.

► You can edit the scan request in CEREC and take an optical impression in CEREC.

29.1.2 IMPORTING OPTICAL IMPRESSIONS FROM A FILE

You can import one or more files with an optical impression.

☑ The **Prepare** workflow step is expanded.

1. Click on the **Import and Register Optical Impressions** icon.

   ▶ The **Import and Register Optical Impressions** wizard opens with the **Import** step.

2. Click on the **Import File** tab.
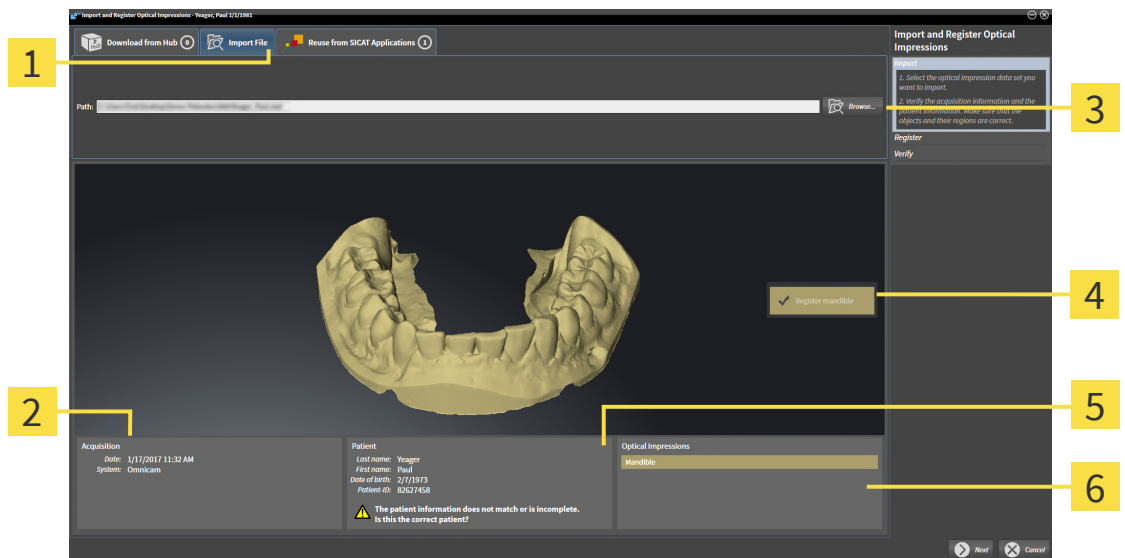
1	**Import File** tab	**4**	Selection for registration
2	Scan information	**5**	Patient information
3	**Browse** button	**6**	**Optical Impressions** area

3. Click on the **Browse** button.

4. In the **Open Optical Impression File** window, switch to the desired file with the optical impression, select the file and click on **Open**.

   ▶ SICAT Endo opens the selected file.

5. **Defining jaw assignment and orientation for STL file:** When you select an STL file with an optical impression of the maxilla or mandible, SICAT Endo opens a window where you can adjust the assignment and orientation of the jaw. To do this, follow the steps in section *Additional steps for optical impressions in STL format [▶Page 167]*. Then, continue with the next step.

   ▶ The maxilla or mandible is preselected for registration.

6. Check the selection for registration.

7. Check the scan information and patient information.

8. Check the jaws in the **Optical Impressions** area.

9. Click **Next**.

► If the patient data in the 3D X-ray scan and in the optical impression differ,SICAT Endo will open the **Different Patient Information** window:

10. Compare the patient information. If you are sure that, despite different patient information, the optical impression matches the current patient, click on the **Yes** button.

► The **Register** step opens for the optical impression. Follow the steps in section *Registering and checking optical impressions [►Page 169]*.

> To enable you to check whether the 3D X-ray data and the optical impressions match, the **Import and Register Optical Impressions** wizard always shows the patient data and ignores the **Anonymize** setting.

29.1.2.1 ADDITIONAL STEPS FOR OPTICAL IMPRESSIONS IN STL FORMAT

STL files do not contain information regarding the position and orientation of optical impressions. Therefore, you need to adjust position and orientation if required.

☑ You have already activated a **SICAT Suite STL import** license.

1. Open the optical impressions in a file in STL format. Information on this can be found in the section *Importing optical impressions from a file [▶Page 165]*.

   ▶ The **STL import wizard** window opens:
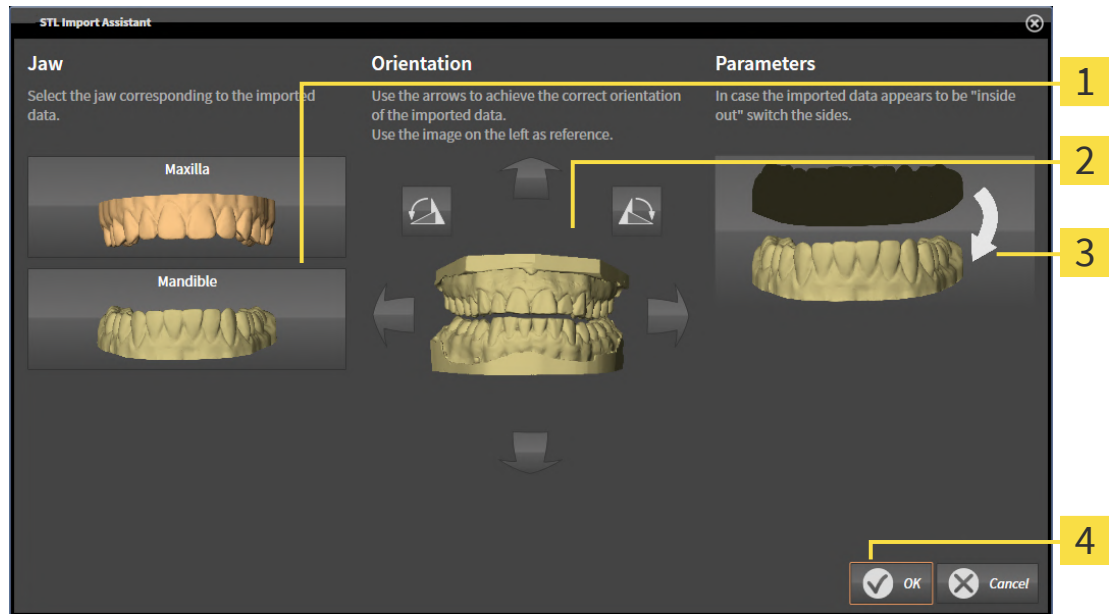
1	Selection of the jaw	**3**	Switching inside and outside
2	Changing the orientation		

2. In the **Jaw** area, select whether the optical impression contains the **Maxilla** or the **Mandible** by clicking on the corresponding symbol.

3. If required, change the orientation of the optical impressions for rough pre-positioning by clicking on the arrow symbols or the rotation symbols in the **Orientation** area.

4. If required, switch the inside and the outside of the optical impressions by clicking on the representation of the optical impression in the **Parameters** area.

5. Click on the **OK** button.

6. If required, repeat those steps for a second STL file. SICAT Endo automatically attributes the second STL file to the other jaw.

   ▶ SICAT Endo displays the imported optical impressions in the **Import and Register Optical Impressions** wizard.

7. Continue with the import of the optical impressions. Information on this can be found in the section *Importing optical impressions from a file [▶Page 165]*.

29.1.3 RE-USING OPTICAL IMPRESSIONS FROM SICAT APPLICATIONS

You can re-use optical impressions from a SICAT application.

☑ You have already imported a suitable optical impression for the opened study in a SICAT application, which you have not yet used in SICAT Endo.

☑ The **Prepare** workflow step is expanded.

1. Click on the **Import and Register Optical Impressions** icon.

   ► The **Import and Register Optical Impressions** wizard opens with the **Import** step.

2. Click on the **Reuse from SICAT Applications** tab.

3. In the upper area, click on the row with the optical impression that you want to re-use.

   ► SICAT Endo displays the optical impression selected:
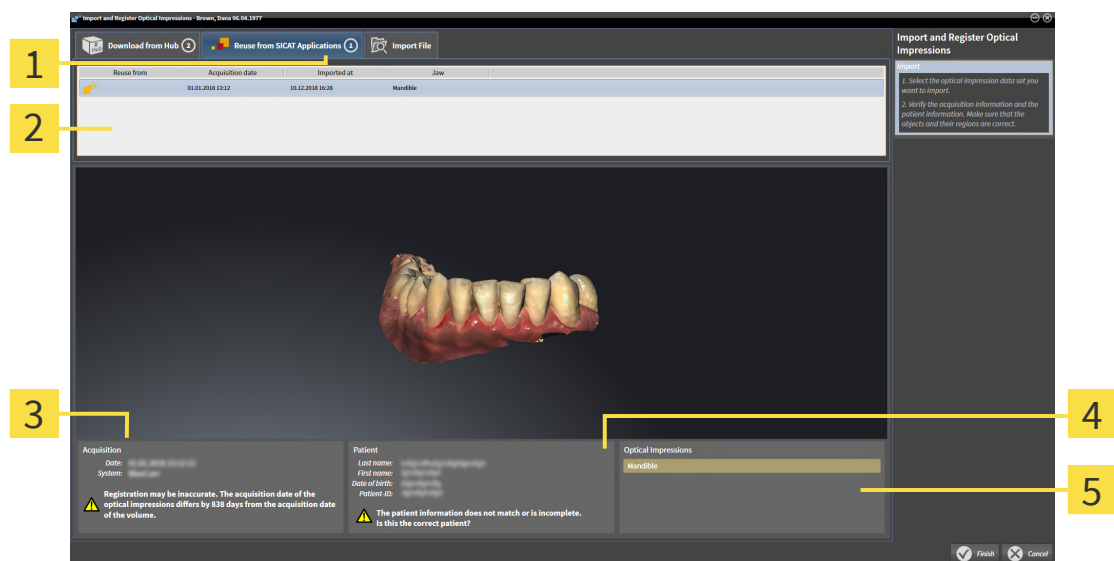
1	**Reuse from SICAT Applications** tab	**4**	Patient information
2	List of re-usable optical impressions	**5**	**Optical Impressions** area
3	Scan information		

4. Check the scan information and patient information.

5. Check the jaws in the **Optical Impressions** area.

6. Click on the **Finish** button.

► SICAT Endo closes the **Import and Register Optical Impressions** wizard.

► SICAT Endo adds the selected optical impressions to the **Object browser**.

► SICAT Endo displays the optical impression selected.

> ℹ To enable you to check whether the 3D X-ray data and the optical impressions match, the **Import and Register Optical Impressions** wizard always shows the patient data and ignores the **Anonymize** setting.

29.2 REGISTERING AND CHECKING OPTICAL IMPRESSIONS

⚠ **CAUTION**	**The incorrect registration of optical impressions for 3D X-ray scans may result in an incorrect diagnosis and treatment.** Check that the registered optical impressions are correctly aligned to the 3D X-ray scans.
⚠ **CAUTION**	**Excessive artifacts, insufficient resolution or the lack of points for registration may mean that the registration process for optical impressions fails. Examples of excessive artifacts in 3D X-ray scans include movement artifacts and metal artifacts.** Only use optical impression data and 3D X-ray data that allow for an adequate registration.
⚠ **CAUTION**	**The selection of markings in the registration process for optical impressions that do not correspond to one another may result in an incorrect diagnosis and treatment.** When you register optical impressions, carefully select corresponding markings in the 3D X-ray scans and optical impressions.
🛈	You can use the **Inspection Window** to check whether an optical impression is precisely aligned to the X-ray data. You can move the **Inspection Window** and scroll through the slices in the **Inspection Window**.
🛈	Optical impressions in color are automatically displayed in color in the **Import** step in the 3D preview. However, in the steps **Register** and **Verify** optical impressions in color are displayed in one color so that you can recognize the shape and geometry more exactly.

To register and check optical impressions, proceed as follows:

☑ The **Import and Register Optical Impressions** wizard is open at the **Register** step.
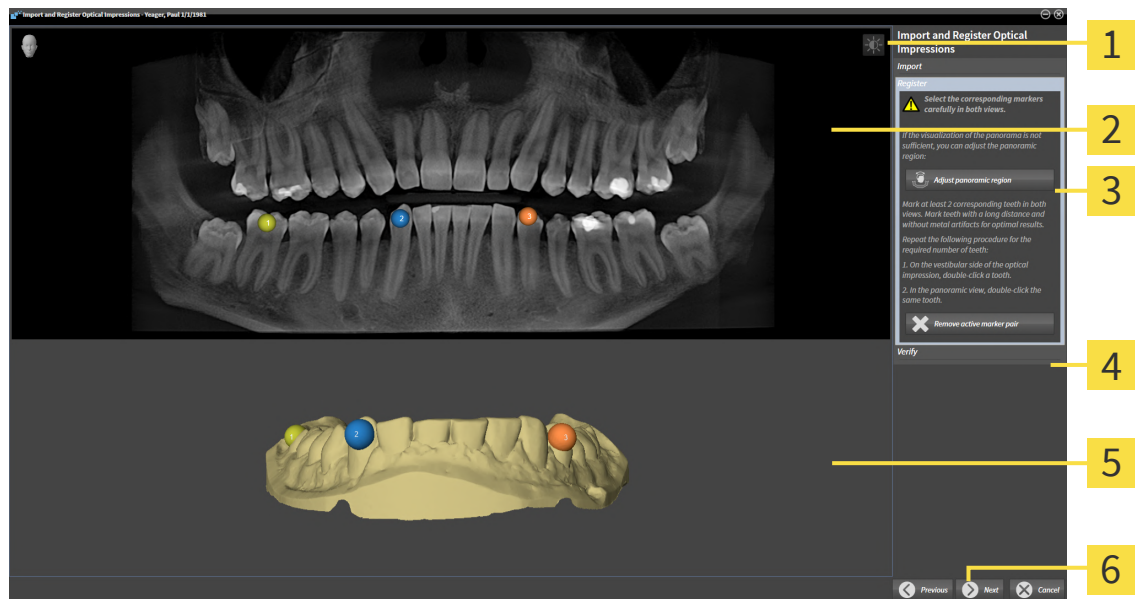
1	**Adjust brightness and contrast** icon	**4**	**Remove active marker pair** button
2	**Panorama** view	**5**	**3D** view which shows the first optical impression
3	**Adjust panoramic region** button	**6**	**Next** button

1. Double click the same tooth both in the **Panorama** view and on the vestibular side of the optical impression in the **3D** view. Make sure that the distance between individual teeth is as large as possible and mark only teeth without metal artifacts. Repeat this step until you have marked at least **two** matching teeth in both views.

   ▶ Markings with different colors and numbers in both views will display corresponding teeth in the optical impression.

2. Click **Next**.

   ▶ SICAT Endo calculates the registration of the optical impression with the X-ray data.

▶ The **Verify** step opens:
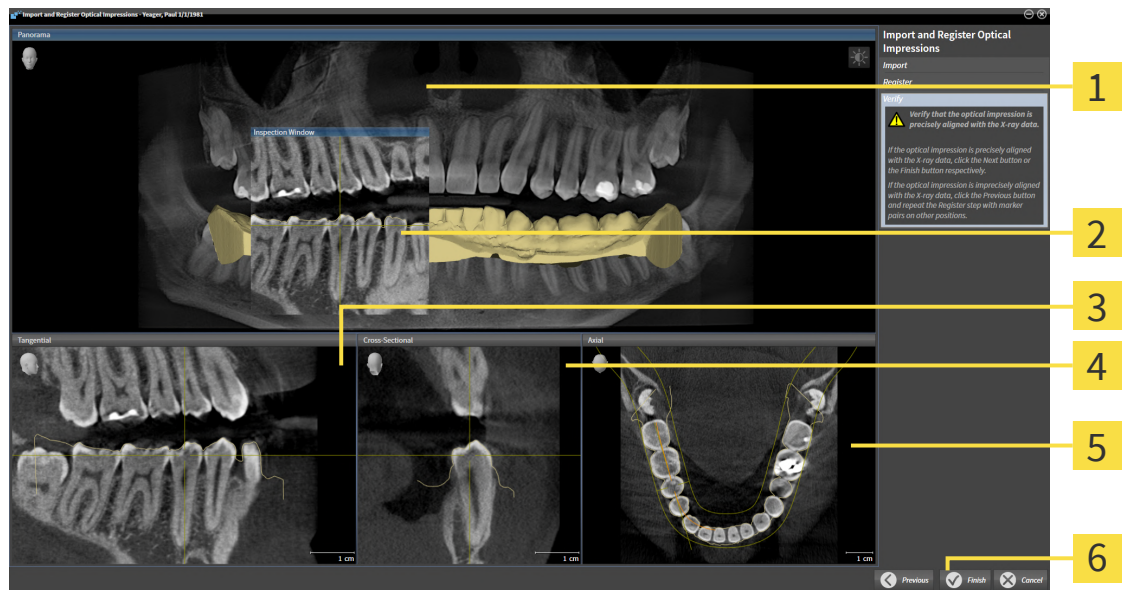
1	**Panorama** view		**4**	**Cross-Sectional** view
2	**Inspection Window**		**5**	**Axial** view
3	**Tangential** view		**6**	**Finish** button

3. In the 2D views, check whether the optical impression is precisely aligned with the X-ray data. **In every slice view**, scroll through the slices and check the contours shown.

4. If the optical impression is imprecisely aligned to the X-ray data, click on the **Previous** button and repeat the **Register** step with marker pairs in different positions if necessary.

5. If the optical impression is precisely aligned to the X-ray data, click on the **Finish** button.

▶ SICAT Endo closes the **Import and Register Optical Impressions** wizard.

▶ SICAT Endo adds the selected optical impression to the **Object browser**.

▶ SICAT Endo displays the registered optical impression.

In addition to the described process, the following actions are available in the **Import and Register Optical Impressions** wizard:

- You can adjust the brightness and contrast of a 2D image by clicking the **Adjust brightness and contrast** icon. Information on this can be found in the section *Adjusting and resetting the brightness and contrast of the 2D views [▶Page 129].*

- You can adjust the panoramic area by clicking the **Adjust panoramic region** icon. Information on this can be found in the section *Adjusting the panoramic region [▶Page 157].*

- If you wish to remove a specific marker pair in the **Register** step, you can select a marker from the pair in both views via mouse click and click on the **Remove active marker pair** button.

- If you want to cancel importing and registering optical impressions, click **Cancel**.

30 INTRAORAL SCANS

	Devices for intraoral scans that are not certified as a medical device may result in incorrect diagnosis and treatment.
⚠️ **CAUTION**	Make sure to use only devices that are certified as a medical device for intraoral scans.

	Insufficient integrity or quality of intraoral scans may result in an incorrect diagnosis and treatment.
⚠️ **CAUTION**	Check the integrity and quality of the imported intraoral scans.

	Intraoral scans that have not been registered correctly with the 3D X-ray scans may result in an incorrect diagnosis and treatment.
⚠️ **CAUTION**	Check that the intraoral records have been correctly registered with the 3D X-ray scans.

	Intraoral scans that do not match the patient and the 3D X-ray scan or whose record time is too far away from the record time of the 3D X-ray scan may result in an incorrect diagnosis and treatment.
⚠️ **CAUTION**	Make sure that the patient and 3D X-ray scan of an intraoral scan match and that their record time is not too far away from the record time of the 3D X-ray scan.

	3D X-ray scans that are unsuitable for registering intraoral scans may result in an incorrect diagnosis and treatment.
⚠️ **CAUTION**	1. Only use 3D X-ray scans containing little or no artefacts. 2. Only use 3D X-ray scans with sufficiently high resolution.

	Insufficient quality of the intraoral records or 3D X-ray scans may cause the mechanism for registering the inraoral records to fail.
⚠️ **CAUTION**	Only use intraoral scans and 3D X-ray scans that allow for a correct registration.

	Insufficient quality and precision of intraoral scans may result in an incorrect diagnosis and treatment.
⚠️ **CAUTION**	Only use intraoral scans of sufficient quality and precision for the intended diagnosis and treatment.

	Incorrect positions or orientations of the intraoral scans may result in an incorrect diagnosis and treatment.
⚠️ **CAUTION**	After registration, check for correct position and orientation of the intraoral scans on the teeth in the 3D X-ray scan.

⚠ CAUTION	**Incorrect orientation of the intraoral records relative to the 3D X-ray scan may result in an incorrect diagnosis and treatment.**
	1. Check that the registered intraoral scans are correctly aligned to the 3D X-ray scans.
	2. If required, rotate the intraoral scans to orient them correctly.

⚠ CAUTION	**Incorrect tooth number allocation could result in incorrect diagnosis and treatment.**
	Check that the selected tooth numbers and the actual anatomical tooth numbers match.

You can use intraoral scans to prepare the diagnosis and for treatment planning in SICAT Endo. You can import and manage the intraoral scans in the **Radiograph Manager** window.

The following actions are required to use intraoral scans in SICAT Endo:

- Importing DICOM files containing intraoral scans

- Allocating tooth numbers to intraoral scans

- Registering the intraoral scans

SICAT Endo supports the following file formats for intraoral scans:

- DICOM data that is available as single-frame file

A list of compatible recording systems can be found in the section *Compatible intraoral scan sensors [▶Page 175]*.

The following actions are available for intraoral scans:

- *Importing intraoral scans and allocating them to teeth [▶Page 176]*

- *Pre-positioning intraoral scans [▶Page 180]*

- *Registering intraoral scan [▶Page 182]*

30.1 COMPATIBLE INTRAORAL SCAN SENSORS

SICAT Endo supports the following intraoral record sensors:

- XIOS XG Supreme, manufacturer: Sirona Dental Systems GmbH, Germany

- XIOS XG Select, manufacturer: Sirona Dental Systems GmbH, Germany

- XIOS Plus, manufacturer: Sirona Dental Systems GmbH, Germany

- Schick 33, manufacturer: Sirona Dental Inc., USA

- Schick Elite, manufacturer: Sirona Dental Inc., USA

30.2 IMPORTING INTRAORAL SCANS AND ALLOCATING THEM TO TEETH

General information on intraoral scans can be found in the section *Intraoral scans [▶Page 173]*.

To import intraoral scans and allocate them to one or several teeth, proceed as follows:

☑ The **Prepare** workflow step is already expanded. Information on this can be found in the section *Workflow toolbar [▶Page 108]*.

☑ The intraoral scan is not yet available in SICAT Endo. You can only import each intraoral scan once.

☑ The intraoral scan is available as DICOM file in single-frame format.

☑ The intraoral scan was created using a compatible intraoral recording device. Information on this can be found in the section *Compatible intraoral scan sensors [▶Page 175]*.

1. Click on the **Administer and register radiographs** icon.

   ► The **Radiograph Manager** window opens.

2. Click on the **Browse** button.

   ► The **Open radiograph** window opens.

3. In the **Open radiograph** window, switch to the desired intraoral scan file and select at least one file. You can import several scans at once by keeping the **Ctrl** key pressed while selecting several files one after another.

4. Click **Open**.

   ► The **Open radiograph** window closes.

   ► SICAT Endo displays the intraoral scans imported:
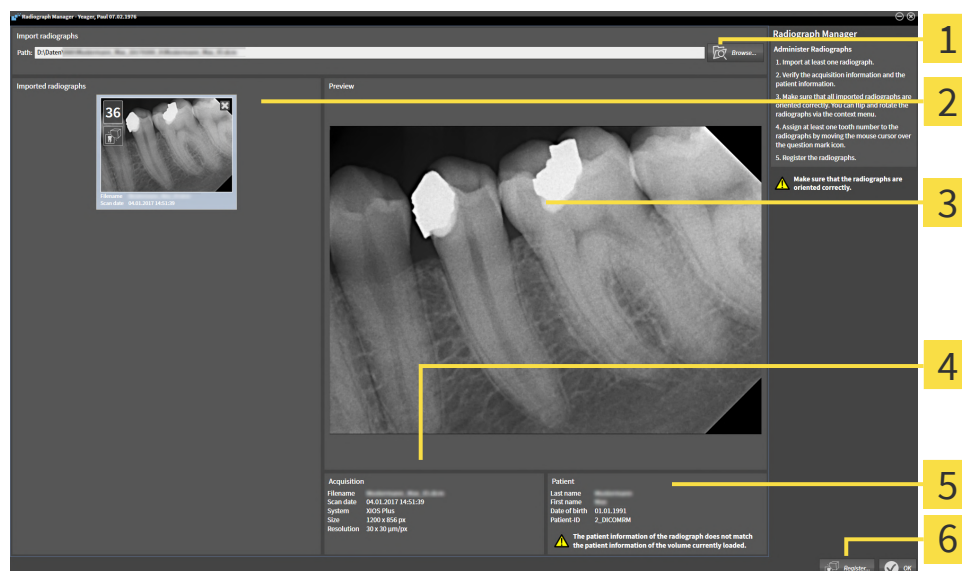
1	**Browse** button	**4**	**Patient Information**
2	**Imported radiographs** area	**5**	**Scan information**
3	**Preview** area	**6**	**Register** button

5. To select an imported intraoral scan, click on a scan in the **Imported radiographs** area.

► SICAT Endo displays the selected scan in the **Preview** area.

6. Check the information on the patient and the information on the scan. Make sure that the scan and the patient match and that the record dates of the 3D X-ray scan and the intraoral scan are not more than 90 days apart.

7. Make sure that the imported intraoral scan's orientation is anatomically correct.

8. If an imported intraoral scan's orientation is not anatomically correct, use the right mouse key to click on the scan in the **Imported radiographs** area and select one of the **Flip horizontally**, **Flip vertically**, **Rotate counter clockwise** or **Rotate clockwise** entries in the context menu.

    ► SICAT Endo flips the scan across the horizontal or vertical image axis.

    ► SICAT Endo rotates the scan in 90 degree increments towards the left or the right.

9. Place the mouse pointer over the question mark icon in a scan.

    ► The **Tooth number** window opens:

10. Allocate up to four tooth numbers to the scan by clicking on the anatomically correct tooth numbers one after the other.

11. To close the **Tooth number** window, position the mouse pointer outside of the window.

► SICAT Endo closes the **Tooth number** window.

► SICAT Endo displays the allocated tooth numbers in the intraoral scans.

► SICAT Endo saves all changes that are made when the Radiograph Manager is closed.

You can select the following functions using the context menu in the **Imported radiographs** area:

- **Flip horizontally**
- **Flip vertically**
- **Rotate counter clockwise**
- **Rotate clockwise**
- **Tooth number**
- **Register**
- **Remove**

> The following options are available to remove intraoral scans from the **Imported radiographs** area,
>
> ■ Click on the **Remove radiograph from planning project** icon in a scan.
>
> ■ Use the right mouse key to click on a scan and select the **Remove** entry in the context menu.
>
> ■ In the **Imported radiographs** area, select a scan and press the **Del** key.

To register an imported intraoral scan, proceed with the following section:

■ *Registration wizard [▶Page 179]*

31 REGISTRATION WIZARD

The registration wizard provides functions for registering intraoral scans.

To be able to use the registration wizard, you must have imported intraoral records and allocated tooth numbers. Information on this can be found in the section *Importing intraoral scans and allocating them to teeth [▶Page 176]*.

Before starting to work with the registration wizard, you have to select the intraoral scan that you want to register.

In the registration wizard, you can pre-orient the intraoral scan on the panoramic curve. You can use the **3D Projection** view to further adjust the orientation before SICAT Endo automatically registers the intraoral scan.

The registration wizard comprises the following steps:

- *Pre-positioning intraoral scans [▶Page 180]*

- *Registering intraoral scan [▶Page 182]*

If pre-positioning in the **Panorama** view is not sufficient, you can also adjust the orientation in the **Register Radiograph** step using the **Cross-Sectional** view or the **Axial** view. Information on this can be found in the section *Adjusting pre-orientation in the transversal and axial view [▶Page 185]*.

If an intraoral scan contains areas that could cause problems during registration, you can provide these areas with a mask by coloring them and exclude them from registration in the **Register Radiograph** step. Information on this can be found in the section *Masking areas [▶Page 188]*.

31.1 PRE-POSITIONING INTRAORAL SCANS

General information on the registration wizard can be found in the section *Registration wizard [▶Page 179]*.

In the **Pre-Align Radiograph** step, you can orient the intraoral scan on the panoramic curve such that the 3D X-ray scan and the intraoral scan are overlaid in the best possible way.

☑ The **Prepare** workflow step is already expanded. Information on this can be found in the section *Workflow toolbar [▶Page 108]*.

☑ You have imported at least one intraoral scan and allocated at least one tooth number to the intraoral scan. Information on this can be found in the section *Importing intraoral scans and allocating them to teeth [▶Page 176]*.

1. Click on the **Administer and register radiographs** icon.
   ► The **Radiograph Manager** window opens.

2. To select an intraoral scan for registration, use the left mouse key to click on the scan.
   ► SICAT Endo marks the scan.

3. Click on the **Register** button.
   ► The **Pre-Align Radiograph** step opens:
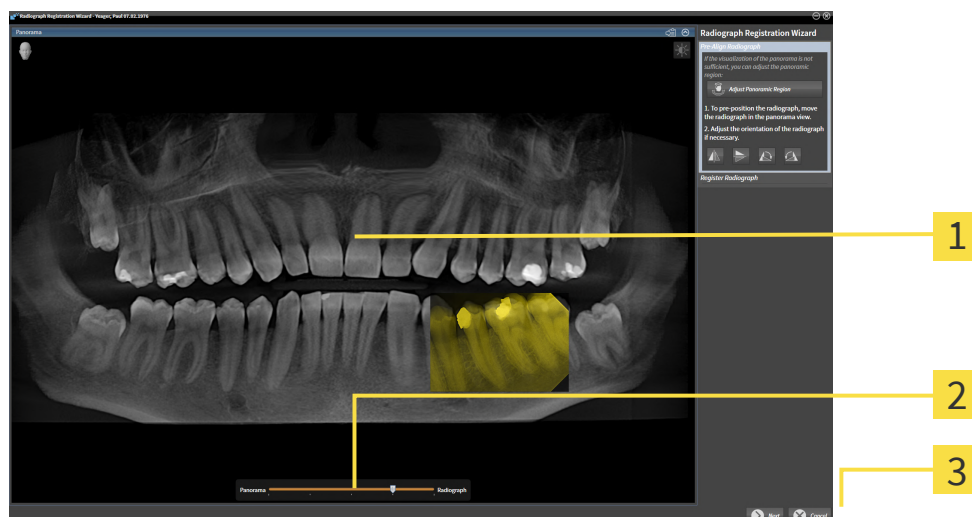
1	**Panorama** window	**3**	**Next** button
2	**Transparency** slider		

► SICAT Endo displays the intraoral scan on the panoramic curve in the **Panorama** window.

4. To move the intraoral scan, position the mouse pointer on the scan.

5. Click and hold the left mouse button.

6. Move the intraoral scan to the desired position.

7. Release the left mouse button.
   ► SICAT Endo maintains the current position of the intraoral scan.

8. If required, you can adjust the orientation of the intraoral scan using the **Flip horizontally**, **Flip vertically**, **Rotate clockwise** or **Rotate counter clockwise** in the **Pre-Align Radiograph** area.

9. To proceed with the next step of the registration, click on the **Next** button.

► The **Register Radiograph** step opens.

i	To start registration of an intraoral scan, you can also proceed as follows: ▪ Double-click on the intraoral scan in the **Imported radiographs** area. ▪ Mark the intraoral scan in the **Imported radiographs** area and press the **Enter key**. ▪ Use the right mouse key to click on a scan in the **Imported radiographs** area and select the **Register** entry in the context menu.

i	The check correct overlay of intraoral scan and panorama, you can adjust the transparency using the **transparency** slider.

Continue with the section *Registering intraoral scan [*▶*Page 182]*.

31.2 REGISTERING INTRAORAL SCAN

General information on the registration wizard can be found in the section *Registration wizard [▶Page 179]*.

In the **Register Radiograph** step, you can fine-align the initial position of the intraoral scan before performing the automatic registration.
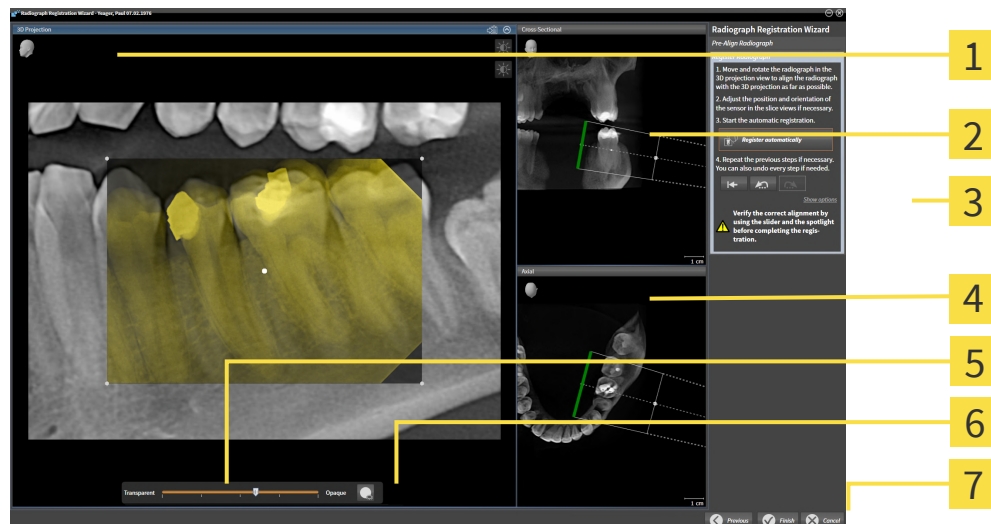
1	**3D Projection** view	**5**	**Transparency** slider
2	**Cross-Sectional** view	**6**	**Spotlight** button
3	**Register automatically** button	**7**	**Finish** button
4	**Axial** view		

To adjust the overlay of the intraoral scan and the **3D Projection** view, proceed as follows:

1. Position the mouse pointer on the intraoral scan in the **3D Projection** view.
   - ▶ The mouse pointer changes.

2. Click and hold the left mouse button.

3. Move the intraoral scan to the desired position.

4. Release the left mouse button.
   - ▶ SICAT Endo maintains the current rotation of the intraoral scan.
   - ▶ SICAT Endo adjusts the **Cross-Sectional** view and the **Axial** view accordingly.

5. To rotate the intraoral scan, position the mouse pointer on one of the control points at the corners of the scan in the **3D Projection** view.
   - ▶ The mouse pointer changes.

6. Click and hold the left mouse button.

7. Move the intraoral scan in the desired direction.

8.   Release the left mouse button.

▶ SICAT Endo maintains the current position of the intraoral scan.

▶ SICAT Endo adjusts the **Cross-Sectional** view and the **Axial** view accordingly.

SWITCHING SPOTLIGHT ON AND OFF

To check the correct overlay of the intraoral scan and the 3D projection, you can display a spotlight in the **3D Projection** view.

1.   Click on the **Spotlight** button.

2.   Position the mouse pointer on the intraoral scan.

▶ SICAT Endo shows a spotlight.

3.   Move the mouse pointer to the position of the intraoral scan that you want to check.

4.   Repeat this step for all spots that you want to check.

5.   To hide the spotlight, click on the **Spotlight** button again.

▶ SICAT Endo hides the spotlight.

ADJUSTING ORIENTATION IN THE TRANSVERSAL OR AXIAL VIEW

If the orientation of the intraoral scan in the **3D Projection** view is not sufficient, you can additionally adjust the orientation in the **Cross-Sectional** view or the **Axial** view. Information on this can be found in the section *Adjusting pre-orientation in the transversal and axial view [▶Page 185]*.

MASKING AREAS IN THE INTRAORAL SCAN

If you want to exclude certain areas of the intraoral scan from automatic registration, you can provide these areas with a mask by coloring them. SICAT Endo does not take these masked areas into account during automatic registration. Information on this can be found in the section *Masking areas [▶Page 188]*.

PERFORMING AUTOMATIC REGISTRATION

■   To perform automatic registration, click on the **Register automatically** button in the **Register Radiograph** area.

▶ SICAT Endo registers the intraoral scan with the 3D X-ray scan.

▶ SICAT Endo closes the registration wizard.

▶ SICAT Endo displays the result of the registration in the **Radiograph Manager** window.

CHECKING REGISTRATION

1.   Check the result of the registration using the **3D Projection** view, the **Cross-Sectional** view and the **Axial** view.

2. If you are not satisfied with the result, you can adjust the position of the intraoral scan by moving the intraoral scan with the mouse using the drag&drop function.

3. To finish registration, click on the **Finish** button.

▶ The **Radiograph Registration Wizard** closes.

▶ The **Radiograph Manager** window opens.

▶ SICAT Endo shows the intraoral scan as registered in the **Imported radiographs** area in the **Radio-graph Manager**.

i	The check correct overlay of intraoral scan and panorama, you can adjust the transparency using the **transparency** slider.

i	To reset the last adjustment, click on the **Undo the last step** button. To reset all adjustments, click on the **Reset all steps** button.

31.3 ADJUSTING PRE-ORIENTATION IN THE TRANSVERSAL AND AXIAL VIEW

For general information on the adjustment of the overlay of the intraoral scan and the 3D projection, please refer to section *Registering intraoral scan [*▶*Page 182]*.

Even if you are able to orient the intraoral scan in an anatomically correct manner in the **3D Projection** view, SICAT Endo may not be able to automatically register the intraoral scan with the 3D X-ray scan for certain scans.

If this is the case, adjust the positioning of the intraoral scan in the **Cross-Sectional** view or in the **Axial** view:

MOVING THE ORIENTATION IN THE TRANSVERSAL VIEW
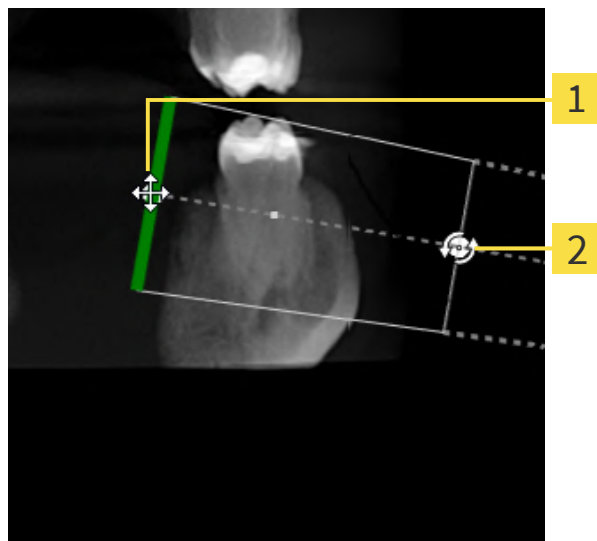
1 Control point **one**   **2** Control point **two**

1. To move the orientation of the recording device and the sensor in the 3D X-ray scan, position the mouse pointer on control point **one** in the **Cross-Sectional** view.

    ▶ The mouse pointer becomes a cross with four arrows.

2. Click and hold the left mouse button.

3. Move the orientation in the desired direction.

4. Release the left mouse button.

▶ SICAT Endo maintains the current orientation.

▶ SICAT Endo adjusts the **3D Projection** view and the **Axial** view accordingly.

ROTATING THE ORIENTATION IN THE TRANSVERSAL VIEW

1. To rotate the orientation of the recording device and the sensor in the 3D X-ray scan, position the mouse pointer on control point **two** in the **Cross-Sectional** view.

    ▶ The mouse pointer becomes a circle with two rotating arrows.

2. Click and hold the left mouse button.

3. Rotate the orientation in the desired direction.

4. Release the left mouse button.

▶ SICAT Endo maintains the current orientation.

▶ SICAT Endo adjusts the **3D Projection** view and the **Axial** view accordingly.

MOVING THE ORIENTATION IN THE AXIAL VIEW

1 Control point **one**   **2** Control point **two**

1. To move the orientation of the recording device and the sensor in the 3D X-ray scan, position the mouse pointer on control point **one** in the **Cross-Sectional** view.

   ▶ The mouse pointer becomes a cross with four arrows.

2. Click and hold the left mouse button.

3. Move the orientation in the desired direction.

4. Release the left mouse button.

▶ SICAT Endo maintains the current orientation.

▶ SICAT Endo adjusts the **3D Projection** view and the **Cross-Sectional** view accordingly.

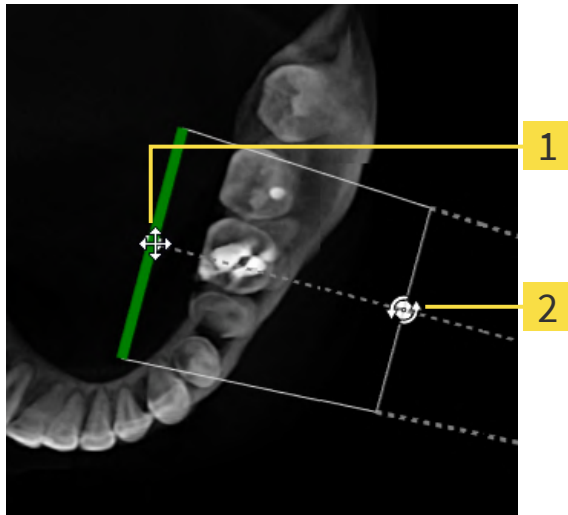## ROTATING THE ORIENTATION IN THE AXIAL VIEW

1. To rotate the orientation of the recording device and the sensor in the 3D X-ray scan, position the mouse pointer on control point **two** in the **Axial** view.

   ▶ The mouse pointer becomes a circle with two rotating arrows.

2. Click and hold the left mouse button.

3. Rotate the orientation in the desired direction.

4. Release the left mouse button.

▶ SICAT Endo maintains the current orientation.

▶ SICAT Endo adjusts the **3D Projection** view and the **Cross-Sectional** view accordingly.

31.4 MASKING AREAS

An intraoral scan may contain areas which may cause problems during automatic registration. This includes:

- Metal artifacts

- Teeth of the opposite jaw

- Edges in the intraoral scan that do not belong to the scan

To avoid problems during automatic registration, you can mask such areas. SICAT Endo excludes all masked areas from automatic registration.

To mask individual sections in a intraoral scan, proceed as follows:

1. Click on the **Show options** button in the **Register Radiograph** area.
   ► SICAT Endo displays the **Edit mask** button.

2. Click on the **Edit mask** button.
   ► SICAT Endo displays the mask toolbar to the right of the intraoral scan.
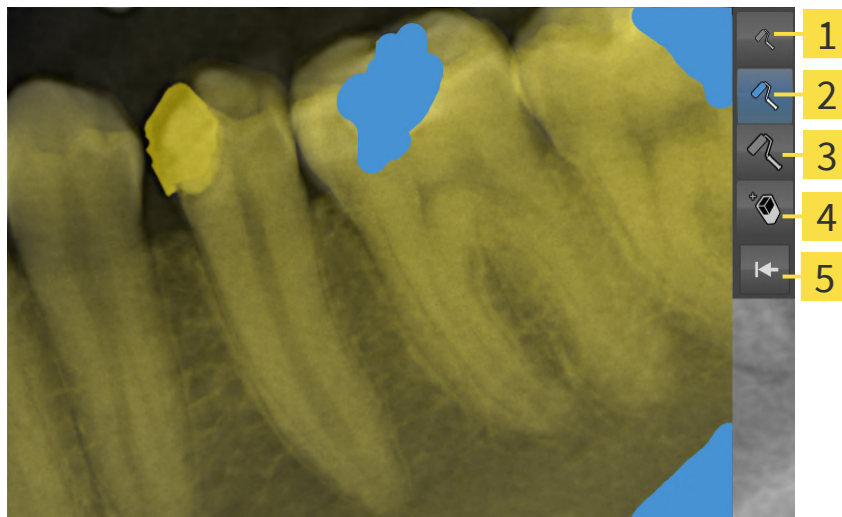
1	**Use a small paintbrush** button		**4**	**Use an eraser** button
2	**Use a medium paintbrush** button		**5**	**Reset mask** button
3	**Use a large paintbrush** button			

3. To color an area, click on the **Use a small paintbrush** button, the **Use a medium paintbrush** button or the **Use a large paintbrush** button.
   ► The mouse pointer becomes a circle.

4. Position the mouse pointer on the area of the intraoral scan that you want to color.

5. Click and hold the left mouse button.

6. Move the mouse pointer over the area that you want to color.

7. Release the left mouse button.

▶ SICAT Endo shows the marked area colored in blue.

8. Repeat these steps if required to mask additional areas of the intraoral scan where needed.

9. To remove an area marked in blue, click on the **Use an eraser** button.

▶ The mouse pointer becomes an eraser.

10. Use the left mouse key to click on the marked blue area that you want to remove.

▶ SICAT Endo removes the marked area from the intraoral scan.

11. To remove all markings, click on the **Reset mask** button.

▶ SICAT Endo removes all areas marked in blue from the intraoral scan.

12. To apply all changes that you have made, click on the **Finish editing** button in the **Register Radio-graph** area.

▶ SICAT Endo displays the masked areas in the **3D Projection** view.

▶ SICAT Endo excludes the masked areas from automatic registration.

> To hide the **Edit mask** button again, click on the **Hide options** button in the **Register Radiograph** area.

32 ENDOLINE WIZARD

The EndoLine wizard provides functions for diagnosis and treatment planning.

You can perform the following actions prior to using the EndoLine wizard:

- *Importing intraoral scans and allocating them to teeth [▶Page 176].*

- *Registering intraoral scan [▶Page 182]*

- *Selecting a tooth for treatment planning [▶Page 198]*

In the EndoLine wizard, you can use a line of intersection to define the area that you want to treat. You can place EndoLines in the root canals in this area.

EndoLines are measuring lines that you can use to mark the root canal that is to be treated and to locate the root apices. EndoLines serve as the basis for the planning and placing of drill channels.

SICAT Endo uses different views to represent EndoLines. Information on this can be found in the section *Views in the EndoLine wizard [▶Page 191].*

SICAT Endo attributes all objects that you create during the planning to the selected tooth. These objects can be EndoLines or drill channels. You can view these objects in the **Panorama** workspace and in the **Radiograph** workspace and manage and edit them in the **Object browser**.

You can use different views and combinations of views are in the workspaces of SICAT Endo to view the objects that you have created. Information on this can be found in the section *Workspaces [▶Page 118].*

The EndoLine wizard comprises the following steps:

- *Pre-aligning a tooth region [▶Page 199]*

- *Setting EndoLines [▶Page 201]*

- *Planning drill channels [▶Page 211]*

32.1 VIEWS IN THE ENDOLINE WIZARD

Each step in the EndoLine wizard features several views.

General information on adjusting the views can be found in the section *Adjusting the views [▶Page 126]* and *Adjusting the 3D view [▶Page 139]*.

"PRE-ALIGN TOOTH REGION" STEP

The following views are available in the **Pre-Align Tooth Region** step:
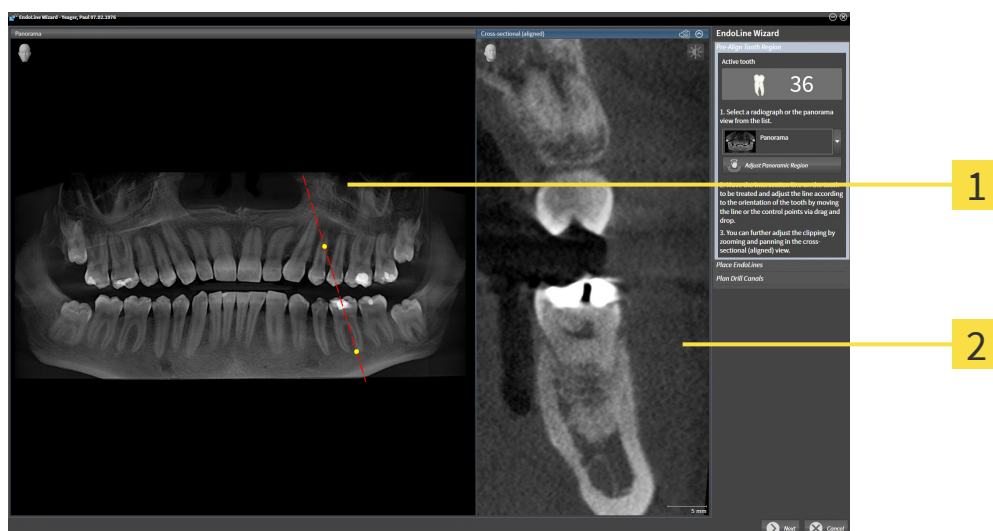
1 **Panorama** view or **Radiograph** view   **2** **Cross-sectional (aligned)** view

In the **Panorama** view or the **Radiograph** view, you can use a line of intersection to pre-align the view of the root canal that is to be treated. The **Radiograph** view is only available if you have registered at least one intraoral scan for the active tooth. For information on how to select an active tooth, please refer to *Selecting a tooth for treatment planning [▶Page 198]*.

In the **Cross-sectional (aligned)** view, the tooth that has been marked in the **Panorama** view or in the **Radiograph** view is shown from the side and aligned to the line of intersection previously created.

"SET ENDOLINES" STEP

The following views are available in the **Place EndoLines** step:
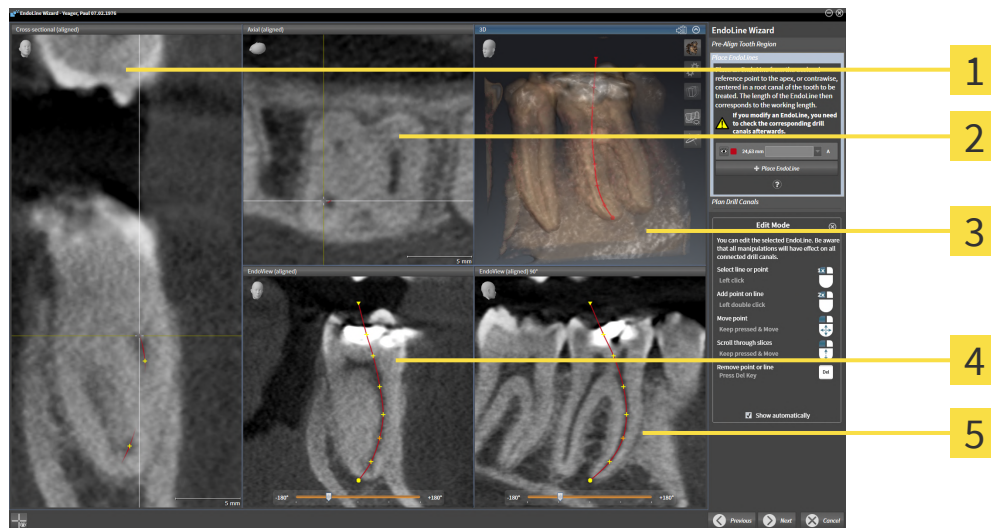
1	**Cross-sectional (aligned)** view	**4**	**EndoView (aligned)** view
2	**Axial (aligned)** view	**5**	**EndoView (aligned) 90°** view
3	**3D** view		

The **Cross-sectional (aligned)** view in the **Place EndoLines** step corresponds to the **Cross-sectional (aligned)** view in the **Pre-Align Tooth Region** step. It shows the tooth marked in the **Pre-Align Tooth Region** step diagonally from the outside to the inside and aligned to the line of intersection previously created.

The **Axial (aligned)** view shows the tooth marked in the **Pre-Align Tooth Region** step from the top and aligned to the line of intersection previously created.

The **3D** view shows the EndoLine in the 3D X-ray scan. Information on adjusting the **3D** view can be found in the section *Adjusting the 3D view [*▶*Page 139]*.

The **EndoView (aligned)** is a view that is aligned to the EndoLine and shows the selected EndoLine projected onto a 2D plane. The **EndoView (aligned) 90°** is the **EndoView (aligned)** rotated by 90 degrees. The two views will only be shown if you have already set an EndoLine. Information on EndoView can be found in the section *EndoView [*▶*Page 196]*.

"PLAN DRILL CHANNELS" STEP

The following views are available in the **Plan Drill Canals** step:
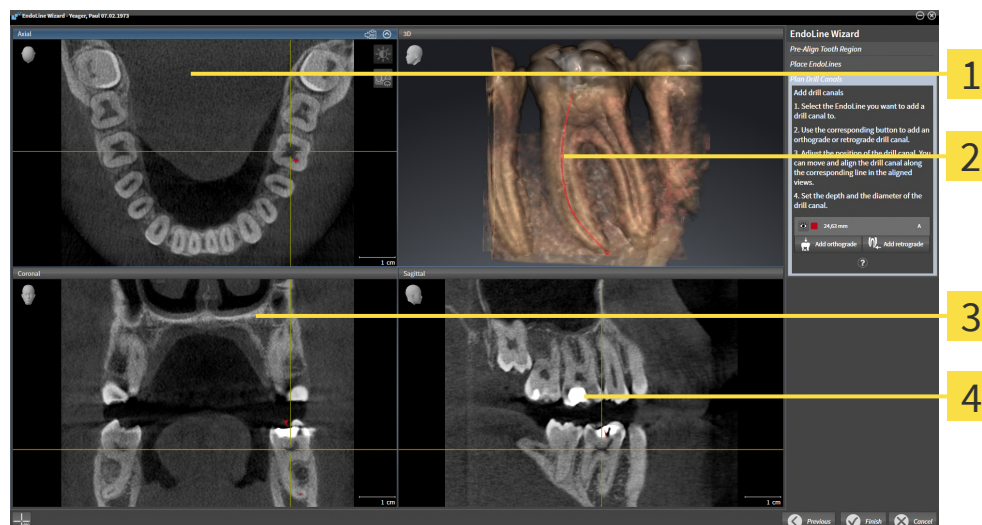
1	**Axial** view	**3**	**Coronal** view
2	**3D** view	**4**	**Sagittal** view

The **Axial** view shows the EndoLine from the top.

The **3D** view shows the EndoLine in the 3D X-ray scan. Information on adjusting the **3D** view can be found in the section *Adjusting the 3D view [▶Page 139]*.

The **Coronal** view shows the EndoLine from the front.

The **Sagittal** view shows the EndoLine from the right.

> **ℹ** If you have not yet planned any drill channels, SICAT Endo displays the **Axial** view, the**3D** view, the**Coronal** view and the **Sagittal** view when you open the **Plan Drill Canals** step in the EndoLine wizard.

VIEWS WHEN PLANNING ORTHOGRADE DRILL CHANNELS

The following views are available when planning orthograde drill channels:
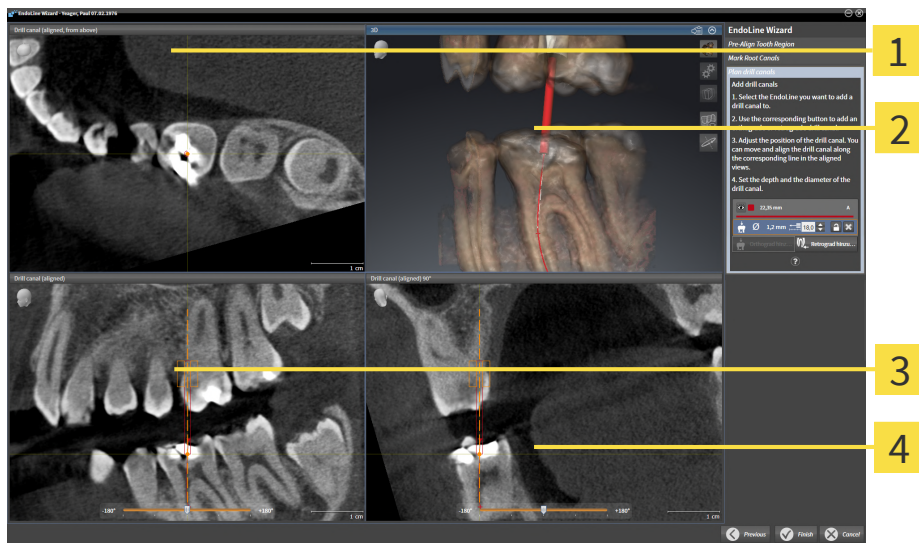
1 **Drill canal (aligned, from above)** view   **3** **Drill canal (aligned)** view

2 **3D** view   **4** **Drill canal (aligned) 90°** view

The **Drill canal (aligned, from above)** view shows the drill channel aligned to the EndoLine from the top.

The **3D** view shows the drill channel that you have set in the 3D X-ray scan. Information on adjusting the **3D** view can be found in the section *Adjusting the 3D view [▶Page 139]*.

The **Drill canal (aligned)** view shows the drill channel aligned to the EndoLine from the front.

The **Drill canal (aligned) 90°** view shows the drill channel aligned to the EndoLine from the side.

VIEWS WHEN PLANNING RETROGRADE DRILL CHANNELS

The following views are available when planning retrograde drill channels:

1	**Drill canal (aligned) 90°** view	**3**	**Drill canal (aligned)** view
2	**3D** view	**4**	**Drill canal (aligned, from above)** view

The **Drill canal (aligned) 90°** view shows the drill channel aligned to the EndoLine from the side.

The **3D** view shows the drill channel that you have set in the 3D X-ray scan. Information on adjusting the **3D** view can be found in the section *Adjusting the 3D view [▶Page 139]*.
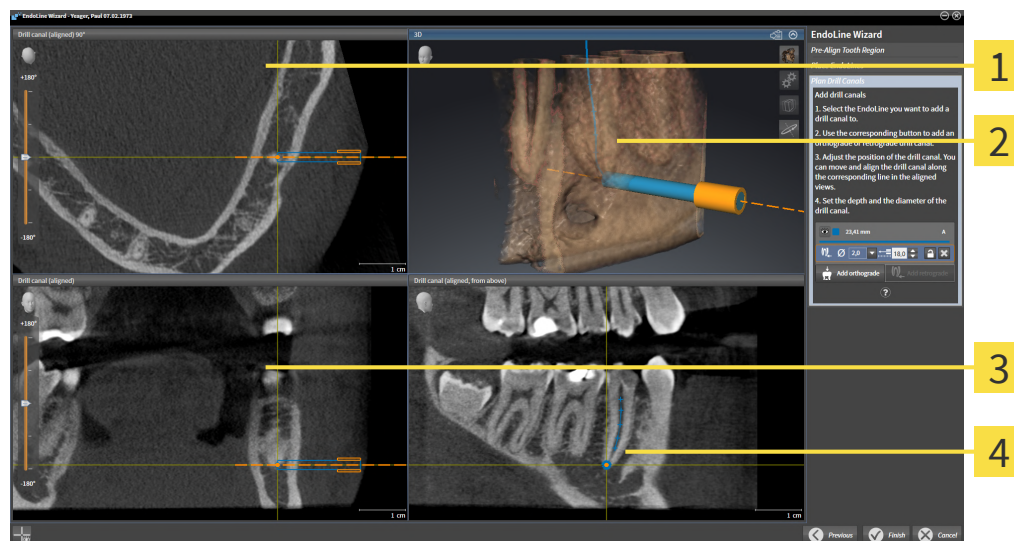
The **Drill canal (aligned)** view shows the drill channel aligned to the EndoLine from the front.

The **Drill canal (aligned, from above)** view shows the drill channel aligned to the EndoLine from the top.

32.1.1 ENDOVIEW

EndoView in SICAT Endo visualizes the anatomy of complex tooth structures of a patient with the software application projecting and showing a curved EndoLine from a 3D scan on a 2D plane. This technique is called Curved Planar Reformation (CPR) . It enables the visualization of curved structures reconstructed in a plane.

| 1 | 3D scan | 2 | 2D plane |
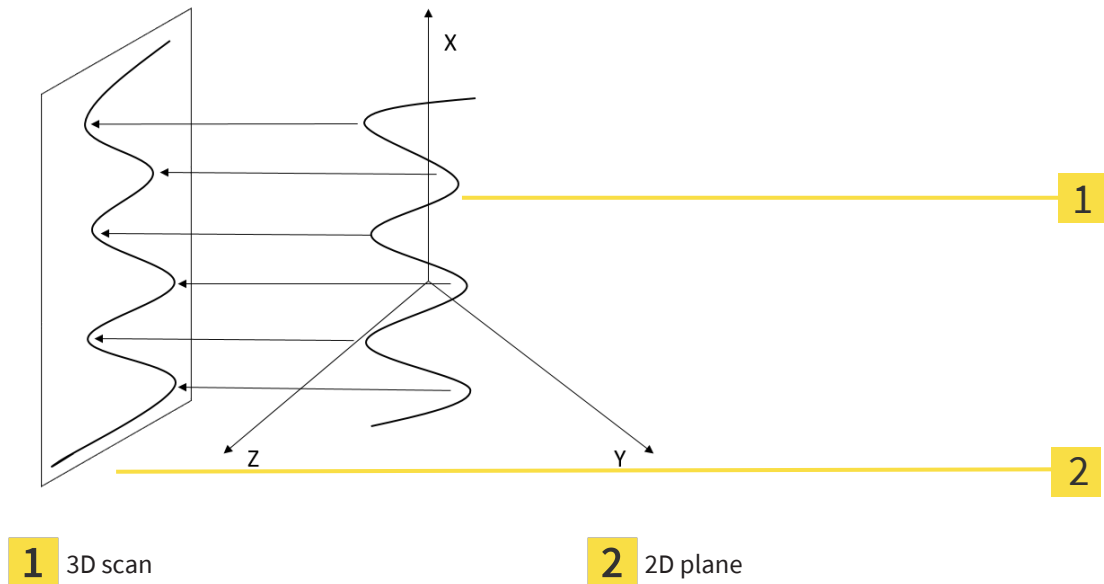
Visualizing an EndoLine in the 2D plane helps you to assess the details of the anatomical teeth structures and to identify anomalies more easily. At the same time, EndoView improves the accuracy of diagnostic decisions and facilitates the creation of a customized treatment plan for your patient.

32.1.2 ROTATING ENDOVIEW

Information on EndoView can be found in the section *EndoView [▶Page 196]*.

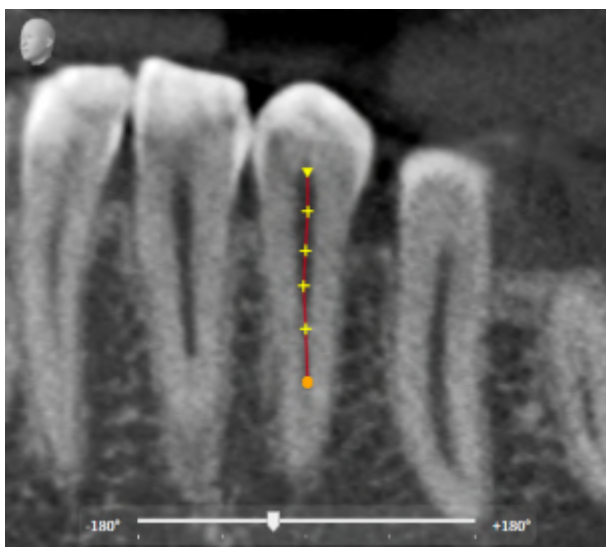In the **EndoView (aligned)** and **EndoView (aligned) 90°** view, you can use a slider to rotate the image sections.

☑ The **Place EndoLines** step is already open. Information on this can be found in the section *Setting EndoLines [▶Page 201]*.

☑ You have set at least one EndoLine.

☑ You have selected an EndoLine.

1. Enable the**EndoView (aligned)** view or the **EndoView (aligned) 90°** view by clicking into the desired view.

   ▶ SICAT Endo activates the view.

2. Position the mouse pointer on the slider.

3. Click and hold the left mouse button.

4. Move the slider to the desired position.

5. Release the mouse button.

▶ SICAT Endo rotates the image section.

▶ SICAT Endo adjusts the **EndoView (aligned)** view and the **EndoView (aligned) 90°** view.

> **ℹ** Alternatively, you can also rotate the image section by using the left mouse key to click on any position in **EndoView (aligned)** or in **EndoView (aligned) 90°** and keep the mouse key pressed to rotate the image section in the desired direction.

> **ℹ** The slider ranges from -180 degrees to +180 degrees and is divided into 90 degree segments. You can use the slider to set an angle for rotating the view.

32.2 SELECTING A TOOTH FOR TREATMENT PLANNING

Before being able to plan EndoLines and drill channels you must select the tooth that you want to treat.

☑ You have opened the **Radiograph** workspace or the **Panorama** workspace. Information on this can be found in the section *Workspaces [▶Page 118]*.

1. Place the mouse pointer over the **Active tooth** section in the **Object bar**.

    ► The **Tooth number** window opens:

2. Move the mouse pointer over the tooth that you want to treat.

    ► SICAT Endo highlights the tooth number.

3. To select the highlighted tooth, left click on the tooth.

    ► SICAT Endo marks the tooth in blue.

    ► SICAT Endo displays the tooth number in the**Object bar** in the **Active tooth** area.

4. To close the **Tooth number** window, move the mouse pointer out of the **Active tooth** area.

► SICAT Endo closes the **Tooth number** window.

32.3 PRE-ALIGNING A TOOTH REGION

General information on the EndoLine wizard can be found in the section *EndoLine wizard [▶Page 190]*.

In the **Pre-Align Tooth Region** step, you can use a line of intersection to adjust the views so as to be able to clearly see the tooth and the roots that you want to treat.

☑ You have selected the tooth that you want to treat in the **Radiograph** workspace or in the **Panorama** workspace using the **Tooth number** schema in the **Object bar**. Information on this can be found in the section *Selecting a tooth for treatment planning [▶Page 198]*.

☑ The **Diagnose** workflow step is already expanded. Information on this can be found in the section *Workflow toolbar [▶Page 108]*.

1. Click on the **Plan root canal treatment using EndoLines and drill canals** icon.

   ► The **Pre-Align Tooth Region** step opens:
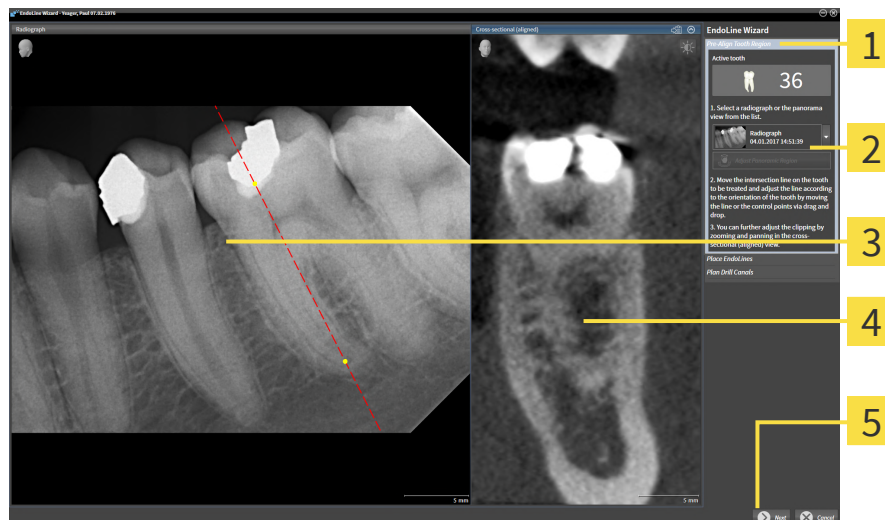
1	**Pre-Align Tooth Region** area	**4**	**Cross-sectional (aligned)** view
2	List of **Panorama** view and intraoral scans	**5**	**Next** button
3	**Panorama** view or **Radiograph** view		

2. In the **Pre-Align Tooth Region** area, select an intraoral scan or the panorama from the list.

   ► SICAT Endo shows a line of intersection with two yellow control points in the **Intraoral scan** view or in the **Panorama** view.

3. To move the line of intersection, position the mouse pointer on the line of intersection.

   ► The mouse pointer changes.

4. Click and hold the left mouse button.

5. Move the line of intersection to the desired position.

6. Release the left mouse button.

   ► SICAT Endo maintains the current position of the line of intersection.

   ► SICAT Endo adjusts the **Cross-sectional (aligned)** view according to the changed position of the line of intersection.

7. To rotate the line of intersection, position the mouse pointer on one of the two yellow control points.

    ► The mouse pointer changes.

8. Click and hold the left mouse button.

9. Rotate the line of intersection in the desired direction.

10. Release the left mouse button.

    ► SICAT Endo maintains the current rotation of the line of intersection.

    ► SICAT Endo adjusts the **Cross-sectional (aligned)** view according to the changed position of the line of intersection.

11. Click **Next**.

► SICAT Endo applies the adjustment of the views.

► The **Place EndoLines** step opens.

Continue with the section *Setting EndoLines [*▶*Page 201]*.

	To be able to choose between an intraoral scan and the **Panorama** view for pre-alignment, you must have registered at least one intraoral scan for the selected tooth.

	You can adjust the panoramic area by clicking the **Adjust panoramic region** icon. Information on this can be found in the section *Adjusting the panoramic region [*▶*Page 157]*.

32.4 SETTING ENDOLINES

⚠️ **CAUTION**	**Using the 3D view to display measurements and planning objects may result in incorrect diagnosis and treatment.**
	Use the 3D view for guidance only and regard it as an additional source of information.

| ⚠️ **CAUTION**	**The use of other data than 3D X-ray scans as source of information for planning a measurement-based therapy may result in an incorrect diagnosis and treatment.**
	Use 3D X-ray scans for diagnosis and planning when using the measurement feature.

General information on the EndoLine wizard can be found in the section *EndoLine wizard [▶Page 190]*.

In the **Place EndoLines** step, you can mark the root canals that you want to treat in the aligned views using EndoLines.

SICAT Endo marks the start point with a triangle and the end point with a circle when an EndoLine is inserted.

The order of the points depends of the tooth number that was previously selected and the position of the tooth in the patient's jaw. In the upper jaw, the start point is below the end point and in the lower jaw, the start point is above the end point.

☑ You have finished the **Pre-Align Tooth Region** step. Information on this can be found in the section *Pre-aligning a tooth region [▶Page 199]*.

☑ The **Place EndoLines** step is already open.
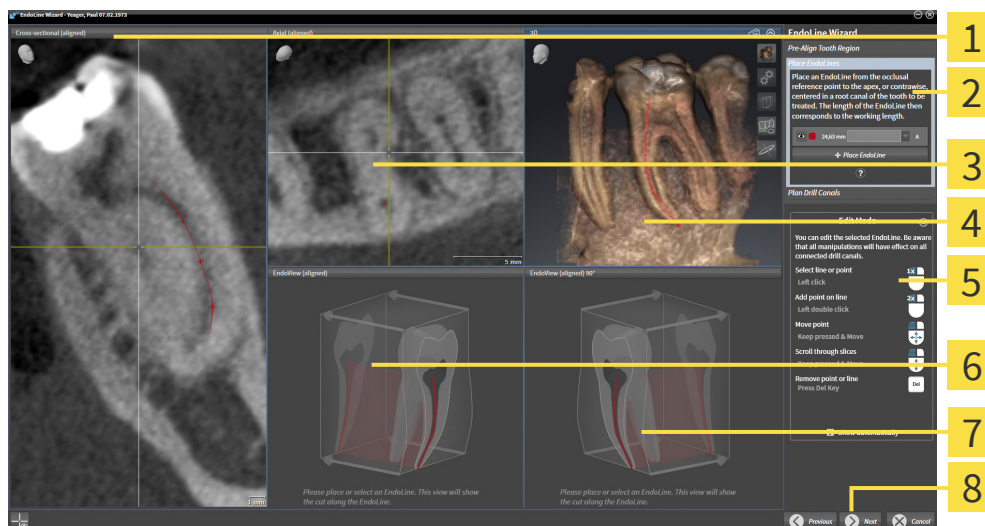
1	**Cross-sectional (aligned)** view	**5**	Infographic
2	**Place EndoLines** area	**6**	**EndoView (aligned)**
3	**Axial (aligned)** view	**7**	**EndoView (aligned) 90°**
4	**3D** view	**8**	**Next** button

1. Click on the **Place EndoLine** button in the **Place EndoLines** area.

   ► SICAT Endo highlights the **Cross-sectional (aligned)** view and the **Axial (aligned)** view.

   ► The mouse pointer changes.

2. Position the mouse pointer in the **Cross-sectional (aligned)** view or the **Axial (aligned)** view.

3. Use the left mouse key to click on the apex or the start point.

   ► SICAT Endo sets a control point.

4. Add further control points to mark the root paths by left-clicking on additional positions on the root path.

5. To finish marking the root paths, double-click on the apex or the start point.

   ► SICAT Endo sets a control point.

   ► SICAT Endo displays all control points and a connection between the points in form of an Endo-Line.

   ► SICAT Endo aligns the **EndoView (aligned)** view and the **EndoView (aligned) 90°** view to the EndoLine.

6. If required, repeat the steps to mark additional root canals.

7. Verify the EndoLines set in the **EndoView (aligned)** view or the **EndoView (aligned) 90°** view.

8. Click **Next**.

► The **Plan Drill Canals** step opens.

Continue with the section *Planning drill channels [*▶*Page 211]*.

You can modify the color and the text for the description and the position of an EndoLine. Information on this can be found in the section *Adjusting color and text [*▶*Page 204]*.

You can modify an EndoLine by moving, adding or deleting control points. Information on this can be found in the section *Adding, moving and deleting control points [*▶*Page 205]*.

You can use a rotation mode in the **3D** view. Information on this can be found in the section *Rotating the 3D view [*▶*Page 208]*.

You can view imported and registered optical impressions in the **3D** view. Information on this can be found in the section *Displaying optical impressions [*▶*Page 209]*.

You can show and hide the crosshairs in the **Cross-sectional (aligned)** view and in the **Axial (aligned)** view using the **Show crosshairs** button and the **Hide crosshairs** button.

You can use different functions when inserting an EndoLine with the mouse keys. Information on this can be found in the section *Using mouse keys [*▶*Page 210]*.

i	To select an EndoLine, you can left-click on the line in one of the aligned views or select it in the **Place EndoLines** area.

i	To delete an EndoLine, highlight the EndoLine in the **Place EndoLines** area and click on the **Delete EndoLine** button at the end of the row of the selected Endo-Line.

> **ℹ** To adjust representation in **EndoView (aligned)** or in **EndoView (aligned) 90°**, you can use the slider in these views. You can rotate the views by any angle to the left or to the right using the slider.

32.5 ADJUSTING COLOR AND TEXT

ADJUSTING THE COLOR

To change the color of an EndoLine, proceed as follows:

1. Click the **Change color** button in the row for the EndoLine.

    ▶ SICAT Endo changes the color of the EndoLine.

2. If the color is not the desired color, click again on the **Change color** button until SICAT Endo shows the desired color.

▶ SICAT Endo shows the new color for the EndoLine.

ADJUSTING TEXT FOR DESCRIPTION OR POSITION SPECIFICATION

To change the description text or position specification text of the EndoLine, proceed as follows:

1. To enter a description for the EndoLine, click on the **Description/Position** field in the EndoLine row.

    ▶ The mouse pointer blinks at the enter position.

2. Enter the desired EndoLine description.

    ▶ SICAT Endo displays the description.

3. To select a text for the EndoLine position specification, click on the arrow icon in the **Description/ Position** field in the EndoLine row.

    ▶ SICAT Endo displays a list with position specifications.

4. Click on the desired position specification in the list.

    ▶ SICAT Endo shows the position specification in the **Description/Position** field.

5. To apply the changes and to close the **Description/Position** field, left-click on a position outside of the **Description/Position** field.

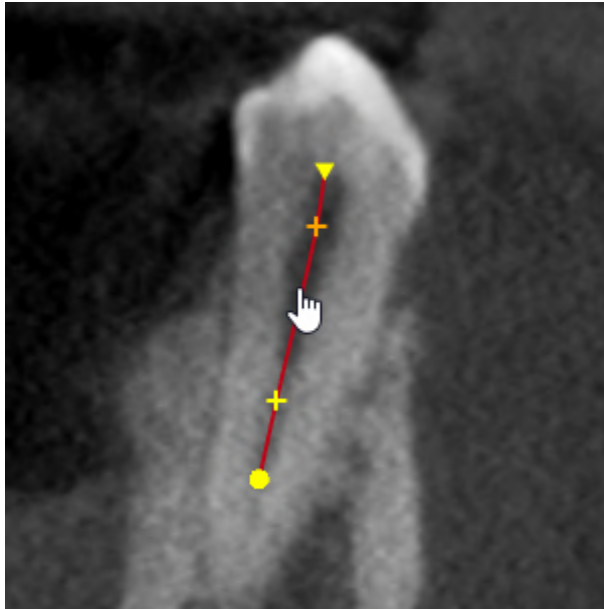▶ SICAT Endo displays the new description or position specification.

32.6 ADDING, MOVING AND DELETING CONTROL POINTS

ADDING CONTROL POINTS TO AN ENDOLINE

To add a control point to an EndoLine, proceed as follows:

1. Position the mouse pointer at the position of an EndoLine where you want to add a control point
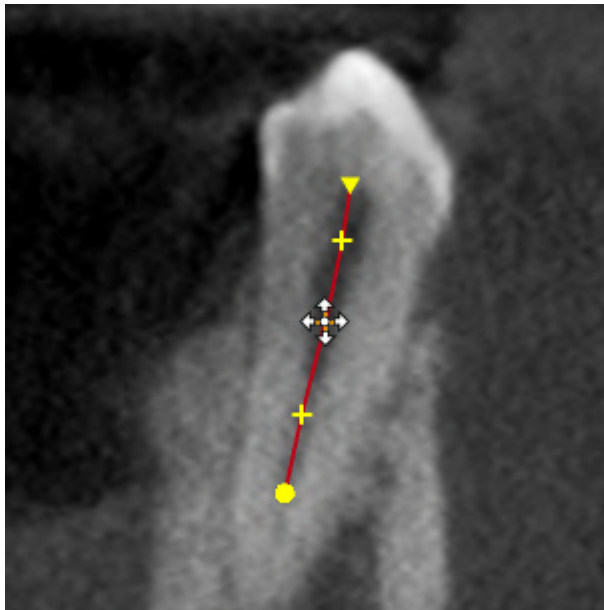

▶ The mouse pointer changes.

2. Double-click on the desired position.

▶ SICAT Endo adds a control point in the shape of a cross.

MOVING CONTROL POINTS OF AN ENDOLINE

To move control points of an EndoLine, proceed as follows:

1. Position the mouse pointer on the control point of the EndoLine that you want to move.
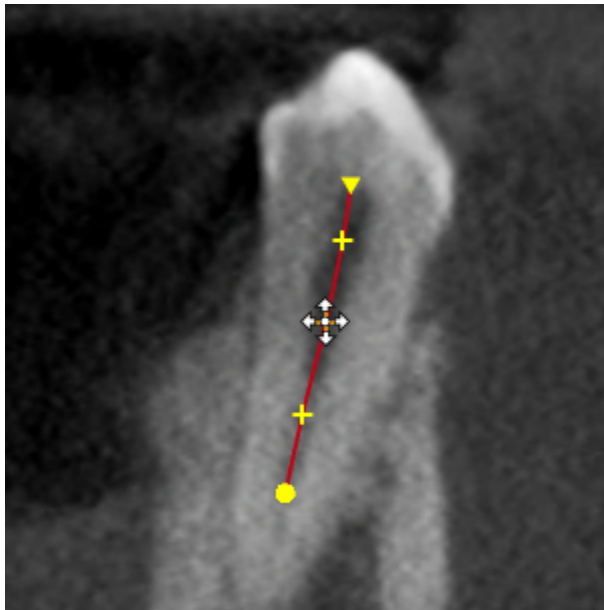

▶ The mouse pointer changes.

2. Click and hold the left mouse button.

3. Move the mouse.

▶ The control point tracks the movement of the mouse pointer.

▶ SICAT Endo adjusts the EndoLine according to the new position of the control point.

4. Release the left mouse button.

▶ SICAT Endo maintains the current position of the control point.

▶ SICAT Endo displays the new path of the EndoLine.

DELETING CONTROL POINTS FROM AN ENDOLINE

To delete a control point from an EndoLine, proceed as follows:

1. Position the mouse pointer on the control point of the EndoLine that you want to delete.

▶ The mouse pointer changes.

2. Left-click on the control point.

▶ SICAT Endo marks the control point.

3. Press the **Del** key.

▶ SICAT Endo deletes the control point.

▶ SICAT Endo adjusts the EndoLine accordingly.

> **i** Please note that the EndoLine will be deleted completely as soon as you delete the penultimate control point.

32.7 ROTATING THE 3D VIEW

You can use the **Spin 3D view** function to switch on and off a rotation mode for the 3D X-ray scan in the EndoLine wizard. If the rotation mode is switched on, SICAT Endo rotates the 3D X-ray scan clockwise.

To use the rotation mode, proceed as follows:

☑ You have already activated the **3D** view. Information on this can be found in the section *Views [▶Page 125]*.

1. Click on the **Spin 3D view** button.

    ► SICAT Endo rotates the 3D X-ray scan about the vertical axis of the selected section.

2. To exit rotation mode, click on the **Spin 3D view** button again.

► SICAT Endo stops the rotation of the 3D X-ray scan.

> **i** To stop the rotation mode, you can also click anywhere in the **3D** view.

32.8 DISPLAYING OPTICAL IMPRESSIONS

General information on optical impressions can be found in the section *Optical impressions [▶Page 160]*.

If you have already imported and registered optical impressions, you can show and hide these optical impressions in the views in the EndoLine wizard.

To show and hide the optical impressions, proceed as follows:

☑ You have already activated the desired view. Information on this can be found in the section *Views [▶Page 125]*.

☑ You have already imported and registered at least one optical impression. Information on this can be found in the section *Optical impressions [▶Page 160]*.

1. To show the optical impressions, click on the **Show object** button.
   ► SICAT Endo shows the optical impressions.
   ► SICAT Endo updates the representation of the 3D X-ray scan.

2. To hide the optical impressions, click on the **Hide object** button.

► SICAT Endo hides the optical impressions.

► SICAT Endo updates the representation of the 3D X-ray scan.

> **i** If you have not yet imported and registered optical impressions, SICAT Endo does not show the **Show object** button in the **3D** view.

32.9 USING MOUSE KEYS

SICAT Endo shows an overview explaining how to use the mouse keys when setting an EndoLine:
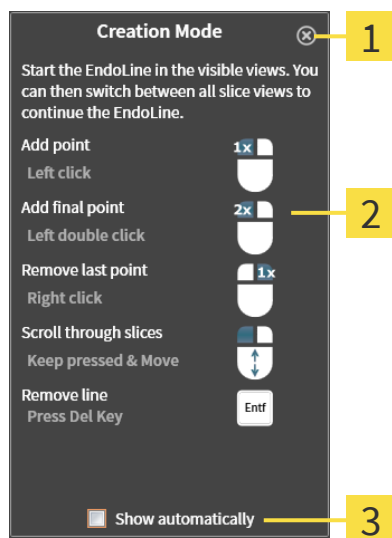
| **1** | **Close** button |

| **2** | Picture |

| **2** | **Show automatically** check box |

The action that is associated with a mouse key depends on the editing mode.

SICAT Endo distinguishes the following editing modes:

- Creation mode
- Editing mode

Depending on the editing mode, different actions are available. The available actions are displayed in the overview and illustrated using a picture.

You can display the overview using the **Show help** button.

You can move the overview to another position using drag & drop.

To close the overview, click on the **Close** button.

> ℹ️ If you activate the **Show automatically** check box, the overview is displayed automatically when setting or editing an EndoLine.

32.10 PLANNING DRILL CHANNELS

> ⚠️
> **CAUTION**
>
> **An incorrect drilling depth might lead to the wrong treatment.**
> Make sure that the planned drilling depth and the selected drill match.

General information on the EndoLine wizard can be found in the section *EndoLine wizard [▶Page 190]*.

In the **Plan Drill Canals** step, you can add orthograde and retrograde drill channels to EndoLines and edit them. You can add an orthograde drill channel and a retrograde drill channel. A drill channel is always in the same color as the Endoline associated with the drill channel.
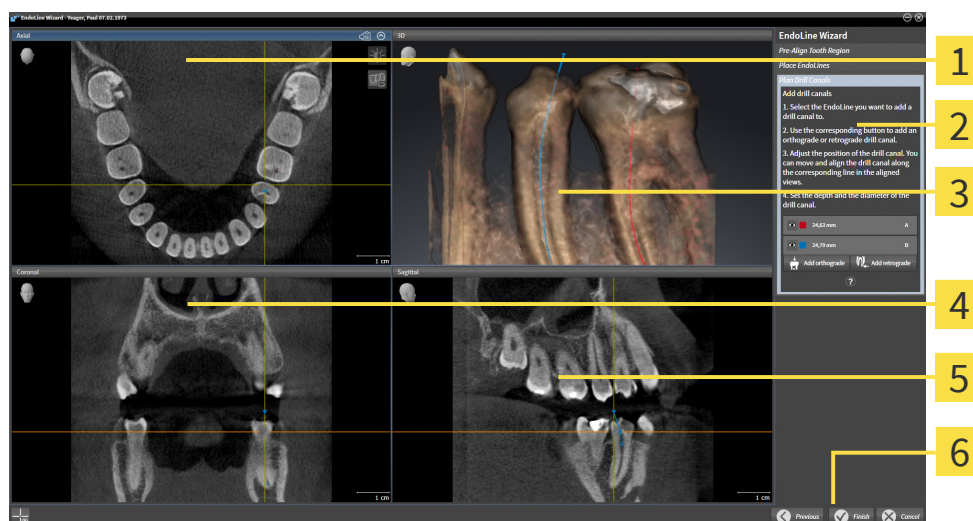
OPENING THE PLAN DRILL CANALS STEP

☑ You have finished the **Place EndoLines** step. Information on this can be found in the section *Setting EndoLines [▶Page 201]*.

☑ The **Place EndoLines** step is open.

■ Click on the **Next** button in the **Place EndoLines** step.

▶ The **Plan Drill Canals** step opens:

1	**Axial** view	**4**	**Coronal** view
2	**Add drill canals** area	**5**	**Sagittal** view
3	**3D** view	**6**	**Finish** button

PLANNING ORTHOGRADE DRILL CHANNELS

1. In the **Add drill canals** area, select the EndoLine to which you want to add an orthograde drill channel.
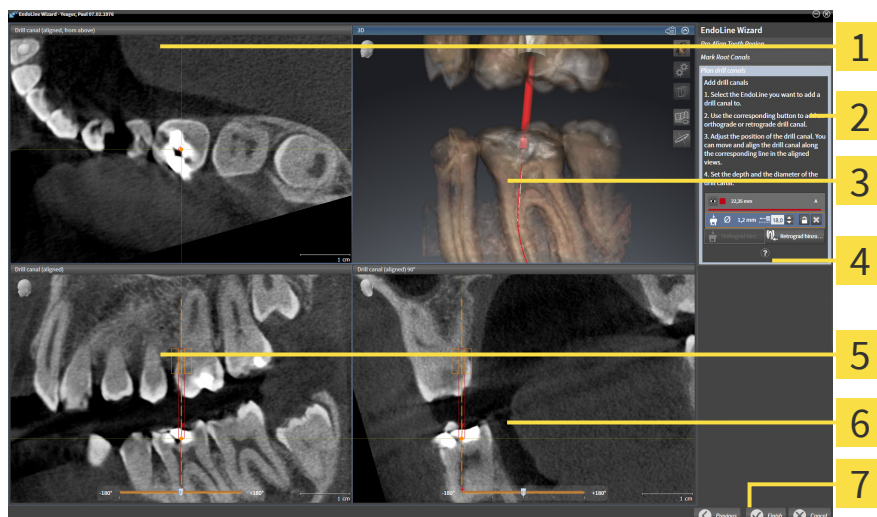
   ▶ SICAT Endo marks the EndoLine.

2. Click on the **Add orthograde** button.

   ▶ SICAT Endo adds an orthograde drill channel to the marked EndoLine.

► SICAT Endo adjusts the views as follows:

1	**Drill canal (aligned, from above)** view	**5**	**Drill canal (aligned)** view
2	**Add drill canals** area	**6**	**Drill canal (aligned) 90°** view
3	**3D** view	**7**	**Finish** button
4	Infographic		

3. To adjust the position of the drill channel along the EndoLine, position the mouse pointer on the drill channel in the **Drill canal (aligned)** view or in the **Drill canal (aligned) 90°** view.

   ► The mouse pointer changes.

4. Click and hold the left mouse button.

5. Move the drill channel to the desired position.

6. Release the left mouse button.

   ► SICAT Endo maintains the current position of the drill channel.

   ► SICAT Endo adjusts the other views according to the changed position of the drill channel.

7. To adjust the rotation of the drill channel, position the mouse pointer on the EndoLine outside of the drill channel in the **Drill canal (aligned)** view or in the **Drill canal (aligned) 90°** view.

   ► The mouse pointer changes.

8. Click and hold the left mouse button.

9. Rotate the EndoLine with the drill channel in the desired direction.

10. Release the left mouse button.

    ► SICAT Endo maintains the current rotation of the EndoLine and the drill channel.

    ► SICAT Endo adjusts the other views according to the changed position of the drill channel.

11. If required, you can adjust the position of the drill sleeve by clicking on the arrow keys next to the **Depth [mm]** field.

► SICAT Endo displays the new depth of the drill sleeve.

12. To finish the planning of drill channels, click on the **Finish** button.

► The EndoLine wizard closes.

► The **Radiograph** workspace opens.

► SICAT Endo shows the planned drill channels.

> ℹ️ You can show and hide the crosshairs in the **Drill canal (aligned, from above)**, **Drill canal (aligned)** and **Drill canal (aligned) 90°** views using the **Show crosshairs** button and the **Hide crosshairs** button.

PLANNING RETROGRADE DRILL CHANNELS

1. In the **Add drill canals** area, select the EndoLine that you want to add a retrograde drill channel to.
   ► SICAT Endo marks the EndoLine.

2. Click on the **Add retrograde** button.
   ► SICAT Endo adds a retrograde drill channel to the marked EndoLine.
   ► SICAT Endo adjusts the views as follows:
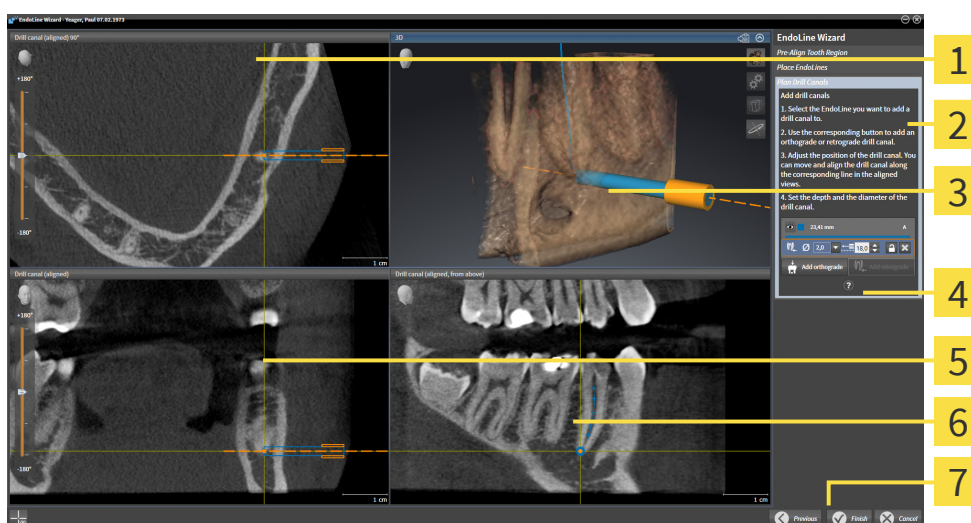
1	**Drill canal (aligned) 90°** view	**5**	**Drill canal (aligned)** view
2	**Add drill canals** area	**6**	**Drill canal (aligned, from above)** view
3	**3D** view	**7**	**Finish** button
4	Infographic		

3. To adjust the position of the drill channel along the EndoLine, position the mouse pointer on the drill channel in the **Drill canal (aligned)** view or in the **Drill canal (aligned) 90°** view.
   ► The mouse pointer changes.

4. Click and hold the left mouse button.

5. Move the drill channel to the desired position.

6. Release the left mouse button.
   ► SICAT Endo maintains the current position of the drill channel.
   ► SICAT Endo adjusts the other views according to the changed position of the drill channel.

7. To adjust the rotation of the drill channel, position the mouse pointer on the EndoLine outside of the drill channel in the **Drill canal (aligned)** view or in the **Drill canal (aligned) 90°** view.
   ► The mouse pointer changes.

8. Click and hold the left mouse button.

9. Rotate the EndoLine with the drill channel in the desired direction.

10. Release the left mouse button.
    ► SICAT Endo maintains the current rotation of the EndoLine and the drill channel.
    ► SICAT Endo adjusts the other views according to the changed position of the drill channel.

11. If required, you can adjust the position of the drill sleeve by clicking on the arrow keys next to the **Depth [mm]** field.
    ► SICAT Endo displays the new depth of the drill sleeve.

12. If required, you can adjust the diameter of the retrograde drill channel by clicking on the arrow icon next to the **Diameter [mm]** field.
    ► SICAT Endo displays a list with available diameters.

13. Click on the desired diameter.
    ► SICAT Endo displays the new diameter of the drill channel.

14. To finish the planning of drill channels, click on the **Finish** button.

► The EndoLine wizard closes.

► The **Radiograph** workspace opens.

► SICAT Endo shows the planned drill channels.

> ℹ️ You can show and hide the crosshairs in the **Drill canal (aligned, from above)**, **Drill canal (aligned)** and **Drill canal (aligned) 90°** views using the **Show crosshairs** button and the **Hide crosshairs** button.

BLOCKING DRILL CHANNELS

Use this function to protect drill channels from modification.

To block a drill channel, proceed as follows:

☑ The drill channel has already been marked.

   ■ Click on the **Lock object** icon.

► SICAT Endo blocks the drill channel for editing.

► SICAT Endo blocks the associated EndoLine.

UNBLOCKING DRILL CHANNELS

To unblock a drill channel, proceed as follows:

☑ The drill channel has been blocked.

☑ The drill channel has already been activated.

■ Click on the **Unlock object** icon.

▶ SICAT Endo unblocks the drill channel.

▶ SICAT Endo unblocks the associated EndoLine.

DELETING DRILL CHANNELS

To delete a drill channel, proceed as follows:

1. In the **Add drill canals** area, click on the Endo planning object containing the drill channel that you want to delete.

   ▶ SICAT Endo marks the Endo planning object.

2. In the Endo planning object, click on the drill channel that you want to delete.

   ▶ SICAT Endo marks the drill channel.

3. Click on the **Delete drill canal** button at the end of the row.

▶ SICAT Endo deletes the drill channel.

> If you have blocked a drill channel for editing, you will not be able to edit the associated EndoLine either. To be able to edit the EndoLine, you have to unblock the associated drill channel.

33 DISTANCE AND ANGLE MEASUREMENTS

SICAT Endo features two different types of measurement:
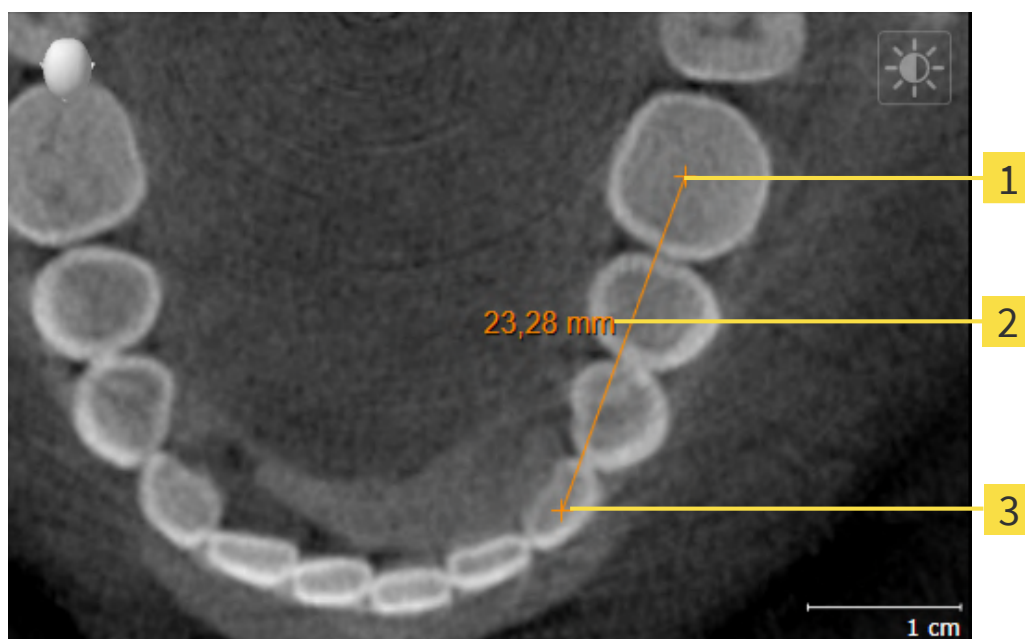
- Distance measurements

- Angle measurements

The tools to add measurements are available in the **Diagnose** step of the **Workflow toolbar**. You can add measurements in all 2D slice views. Every time you add a measurement, SICAT Endo will also add it to the **Measurements** group in the **Object browser**.

The following actions are available for measurements:

- *Adding distance measurements [▶Page 217]*

- *Adding angle measurements [▶Page 218]*

- *Moving measurements, individual measuring points and measured values [▶Page 220]*

- Activating, hiding and showing measurements - Information on this can be found in the section *Managing objects with the object browser [▶Page 111].*

- Focusing on measurements, removing measurements and undoing and redoing measurement actions – Information on this can be found in the section *Managing objects with the object toolbar [▶Page 113].*

33.1 ADDING DISTANCE MEASUREMENTS

1 Starting point

2 Measured value

3 End point

To add a distance measurement, proceed as follows:

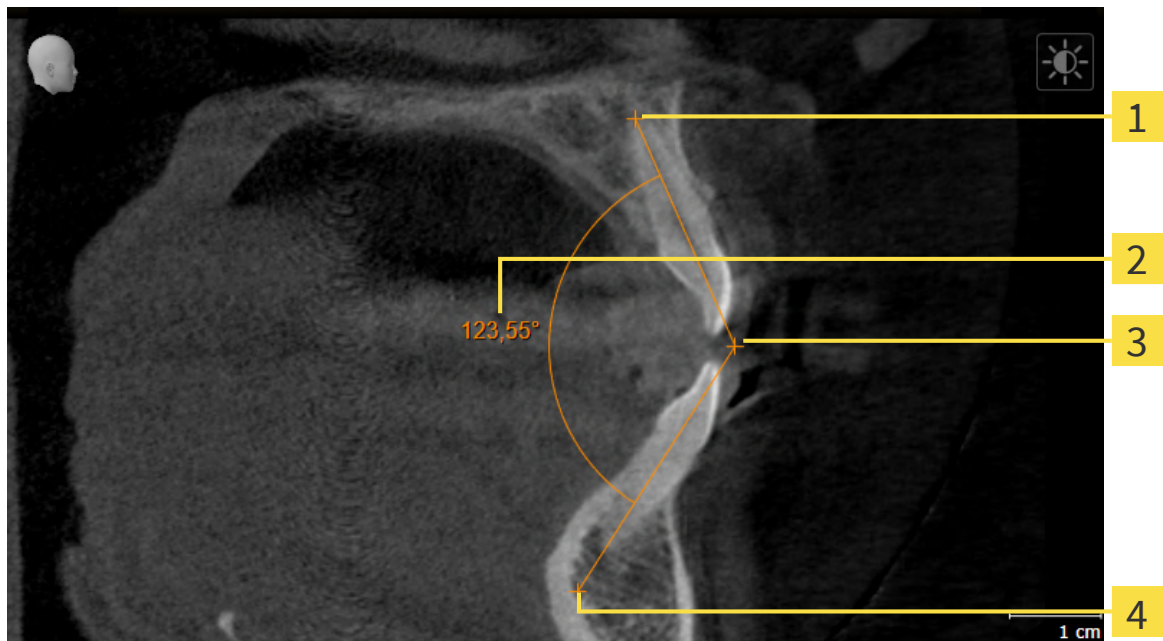☑ The **Diagnose** workflow step is already expanded.

1. In the **Diagnose** workflow step, click the **Add distance measurement (D)** icon.

    ▶ SICAT Endo adds a new distance measurement to the **Object browser**.

2. Move the mouse pointer over the desired 2D slice view.

    ▶ The mouse pointer becomes a cross.

3. Click on the starting point of the distance measurement.

    ▶ SICAT Endo illustrates the starting point using a small cross.

    ▶ SICAT Endo shows a distance line between the starting point and the mouse pointer.

    ▶ SICAT Endo shows the current distance between the starting point and the mouse pointer in the middle of the distance line and in the **Object browser**.

4. Move the mouse pointer to the end point of the distance measurement and left-click.

▶ SICAT Endo illustrates the end point using a small cross.

> **i** You can cancel adding measurements at any time by pressing **ESC**.

33.2 ADDING ANGLE MEASUREMENTS

1 Starting point

2 Measured value

3 Vertex

4 End point

To add an angle measurement, proceed as follows:

☑ The **Diagnose** workflow step is already expanded.

1. In the **Diagnose** workflow step, click the **Add angle measurement (A)** icon.

    ► SICAT Endo adds a new angle measurement to the **Object browser**.

2. Move the mouse pointer over the desired 2D slice view.

    ► The mouse pointer becomes a cross.

3. Click on the starting point of the angle measurement.

    ► SICAT Endo illustrates the starting point using a small cross.

    ► SICAT Endo shows the first arm of the angle measurement by means of a line from the starting point to the mouse pointer.

4. Move the mouse pointer to the vertex of the angle measurement and left-click.

    ► SICAT Endo illustrates the vertex using a small cross.

    ► SICAT Endo shows the second arm of the angle measurement by a line from the vertex to the mouse pointer.

    ► SICAT Endo shows the current angle between both arms of the angle measurement and in the **Object browser**.

5.   Move the mouse pointer to the end point of the second arm and left-click.

► SICAT Endo illustrates the end point using a small cross.

i	You can cancel adding measurements at any time by pressing **ESC**.

► SICAT Endo illustrates the end point using a small cross.

33.3 MOVING MEASUREMENTS, INDIVIDUAL MEASURING POINTS AND MEASURED VALUES

MOVING MEASUREMENTS

To move a measurement, proceed as follows:

☑ SICAT Endo shows the desired measurement already in a 2D slice view. For further information about this see *Managing objects with the object browser [▶Page 111]* and *Managing objects with the object toolbar [▶Page 113]*.

1. Place the mouse pointer on one of the measurement lines.

    ▶ The mouse pointer becomes a cross.

2. Click and hold the left mouse button.

3. Place the mouse pointer on the desired position of the measurement.

    ▶ The measurement tracks the movement of the mouse pointer.

4. Release the left mouse button.

▶ SICAT Endo maintains the current position of the measurement.

MOVING INDIVIDUAL MEASURING POINTS

To move an individual measuring point, proceed as follows:

☑ SICAT Endo shows the desired measurement already in a 2D slice view. For further information about this see *Managing objects with the object browser [▶Page 111]* and *Managing objects with the object toolbar [▶Page 113]*.

1. Place the mouse pointer on the desired measuring point.

    ▶ The mouse pointer becomes a cross.

2. Click and hold the left mouse button.

3. Place the mouse pointer on the desired position of the measuring point.

    ▶ The measuring point tracks the movement of the mouse pointer.

    ▶ The measured value changes as you move the mouse.

4. Release the left mouse button.

▶ SICAT Endo maintains the current position of the measuring point.

MOVING MEASURED VALUES

To move a measured value, proceed as follows:

☑ SICAT Endo shows the desired measurement already in a 2D slice view. For further information about this see *Managing objects with the object browser [▶Page 111]* and *Managing objects with the object toolbar [▶Page 113]*.

1. Place the mouse pointer on the desired measured value.

    ▶ The mouse pointer becomes a cross.

2. Click and hold the left mouse button.

3. Place the mouse pointer on the desired position of the measured value.

    ▶ The measured value tracks the movement of the mouse pointer.

    ▶ SICAT Endo shows a dotted line between the measured value and the corresponding measurement.

4. Release the left mouse button.

▶ SICAT Endo maintains the current position of the measured value.

i	After you have moved the value of a measurement, the SICAT Endo will define the value at an absolute position. To position the value again relative to the measurement, double click on the value.

34 PATIENT INFORMATION

⚠️ **CAUTION**	**Using the report for diagnostic purposes may result in an incorrect diagnosis and treatment.** Only use the visualization functions for medical images of the software user interface to perform a diagnosis on medical images and to plan the treatment.

You can explain your diagnosis and highlight the effects of the treatment to the patient through illustrations customized for the patient. The patient information consists of two steps:

1. In your practice within SICAT Endo

2. By way of a patient information via the report

You can compile the contents of the report during your explanations on the screen.

The sources are images based on drawing objects and screenshots.

The report enables the patient to better understand the results you have discussed and discuss them with others.

Creating the report consists of the following steps:

- *Creating images and screenshots [▶Page 223]*

- *Preparing reports [▶Page 226]*

- *Generating reports [▶Page 230]*

34.1 CREATING IMAGES AND SCREENSHOTS

General information on patient information can be found in the section Patient information.

General information on managing images and screenshots can be found in the section *SICAT Endo objects [▶Page 114]*.

There are two drawing tools:

- **Draw Arrow**

- **Draw Circle**

DRAWING ARROWS

To draw an arrow, proceed as follows:

☑ You have already aligned the volume according to your requirements. Information on this can be found in the section *Adjusting the volume orientation [▶Page 152]*.

☑ The **Consult** workflow step is already expanded. Information on this can be found in the section Workflow toolbar.

1. In the **Consult** workflow step, click the **Draw Arrow** icon.

2. Place the mouse pointer over the desired view.

  ▶ The mouse pointer becomes a pen.

3. Click and hold the left mouse button on the desired arrow tip position.

4. Move the mouse.

  ▶ SICAT Endo shows an arrow in the view.

  ▶ The end of the arrow will now match the position of the mouse pointer.

5. Move the mouse pointer to the desired arrow end position and release the left button.

  ▶ SICAT Endo shows the finished arrow in the view.

  ▶ If not yet available, SICAT Endo will create the structures required for the **Image** object in the **Object browser**.

  ▶ The image will be available in the **Report Generation** window.

6. Click on the **Draw Arrow** icon.

▶ SICAT Endo closes the mode for drawing arrows.

DRAWING CIRCLES

To draw a circle, proceed as follows:

☑ You have already aligned the volume according to your requirements, for example according to the Frankfurt plane. Information on this can be found in the section *Adjusting the volume orientation [▶Page 152]*.

☑ The **Consult** workflow step is already expanded. Information on this can be found in the section Workflow toolbar.

1. In the **Consult** workflow step, click the **Draw Circle** icon.

2. Place the mouse pointer over the desired view.

► The mouse pointer becomes a pen.

3. Click and hold the left mouse button on the desired position for the center of the circle.

4. Move the mouse.

► SICAT Endo shows a circle in the view.

► The radius of the circle will now match the distance between the center and the position of the mouse pointer.

5. Move the mouse pointer to achieve the desired radius and release the left button.

► SICAT Endo shows the finished circle in the view.

► If not yet available, SICAT Endo will create the structures required for the **Image** object in the **Object browser**.

► The image will be available in the **Report Generation** window.

6. Click on the **Draw Circle** icon.

► SICAT Endo closes the mode to draw circles.

> **i** As long as the **Draw Arrow** drawing tool or **Draw Circle** drawing tool is active, you can create several drawing objects one after another. You can cancel the use of a drawing tool by clicking on a point outside the view in question or by pressing the **ESC** key.

CONFIGURING DRAWING TOOLS

You can configure the **Draw Arrow** drawing tool or the **Draw Circle** drawing tool separately. Changes to the settings will only affect drawing objects created after that point.

To configure a drawing tool, proceed as follows:

☑ The **Consult** workflow step is already expanded. Information on this can be found in the section Workflow toolbar.

1. In the **Consult** workflow step, click on the corresponding **Configure drawing tool** icon next to the **Draw Arrow** icon or **Draw Circle** icon.

► The transparent **Configure drawing tool** window opens:
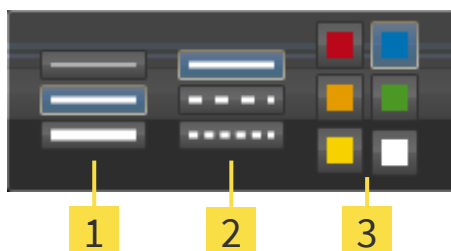
1	Icons for the **Line thickness**
2	Icons for the **Line type**
3	Icons for the **Line color**

2. Click the desired icons to configure the **Line thickness**, **Line type** and **Line color** of the drawing tool.

3. Click on any point outside the transparent **Configure drawing tool** window.

▶ SICAT Endo closes the transparent **Configure drawing tool** window.

▶ SICAT Endo saves the settings in your user profile.

▶ SICAT Endo uses the new settings for drawing objects created from then on.

ADDING SCREENSHOTS TO THE "REPORT GENERATION" WINDOW

You can create screenshots of any view in any workspace and any window as long as the respective view contains the **Copy screenshot to clipboard (Ctrl+C)** icon.

To add screenshots to the report, proceed as follows:

1. To create a screenshot of a view, click on the **Copy screenshot to clipboard (Ctrl+C)** icon in the **View toolbar** of the desired view.

2. To create a screenshot of the entire workspace, click on the **Copy screenshot to clipboard (Ctrl +C)** icon in the **Workspace toolbar**.

▶ SICAT Endo will create the structures that are required for the **Screenshot**object in the **Object browser** and will activate the object.

▶ The screenshot will be available in the **Report Generation** window.

▶ SICAT Endo copies a screenshot to the clipboard.

Continue with the section *Preparing reports [*▶*Page 226]*.

34.2 PREPARING REPORTS

General information on patient information can be found in the section *Patient information [▶Page 222]*.

The following actions are available to prepare reports:

■ Open the **Report Generation** window

■ Change report settings
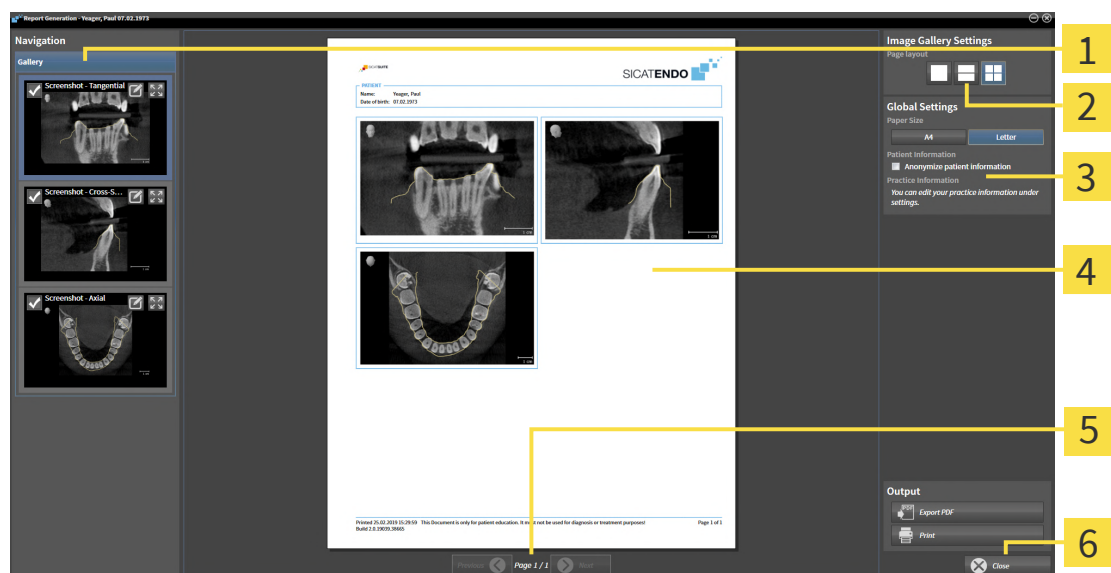
■ Preparing elements

OPENING THE "REPORT GENERATION" WINDOW

☑ You have created at least one **Image** object or one **Screenshot** object.

☑ The **Consult** workflow step is already expanded. Information on this can be found in the section Workflow toolbar.

■ Click on the **Create report** icon.

▶ The **Report Generation** window opens:

1	**Gallery** area	**4**	Preview
2	Buttons for arranging the images	**5**	Page navigation
3	**Global Settings** area	**6**	**Close** button

CHANGE REPORT SETTINGS

☑ The **Report Generation** window is already open.

1. Click on the icon for the desired arrangement of the images in the **Image Gallery Settings** area.

   ▶ SICAT Endo shows the images according to the selected settings.

2. Click on the row with the button with the desired paper size in the **Global Settings** area.

► SICAT Endo changes the paper size according to the selected setting.

3. Activate or deactivate the **Anonymize patient information** check box.

   ► SICAT Endo shows on the report the actual patient information or anonymized patient information according to the selected settings.

PREPARING ELEMENTS FOR REPORTS

The **Report Generation** window shows screenshots from **Image** objects and screenshots from **Screenshot** objects. Information on this can be found in the section *Creating images and screenshots [▶Page 223]*.

To prepare elements for reports, proceed as follows:

☑ The **Report Generation** window is already open.
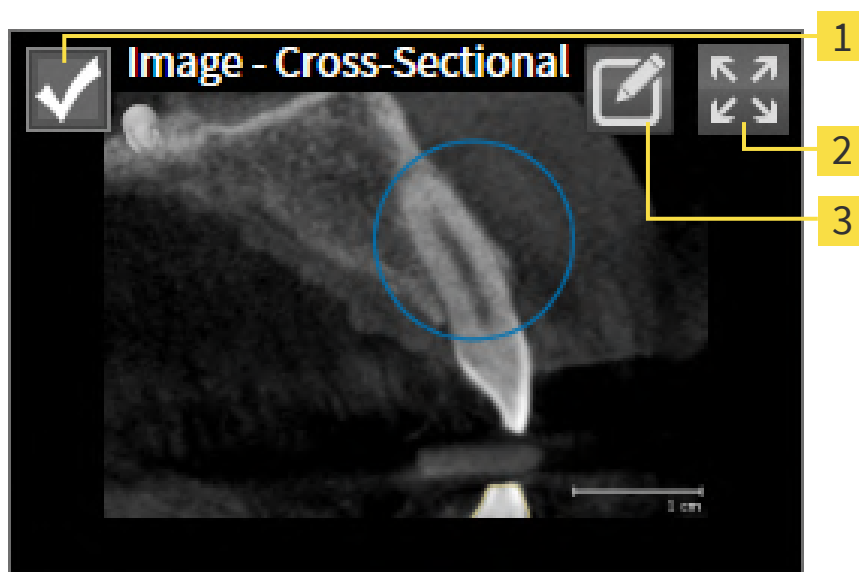
1 Check box for hiding and showing

2 **Show image on single page** icon

3 **Edit image description** icon

1. If you want to hide an element in the report, deactivate the corresponding check box for the element.

   ► SICAT Endo hides the element on the handout.

2. If you want SICAT Endo to show an image alone on a page, click on the **Show image on single page** icon.

3. If you want to add a description to an element, click on the **Edit image description** icon of the element.

► SICAT Endo displays an enlarged version of the element and a text input field:
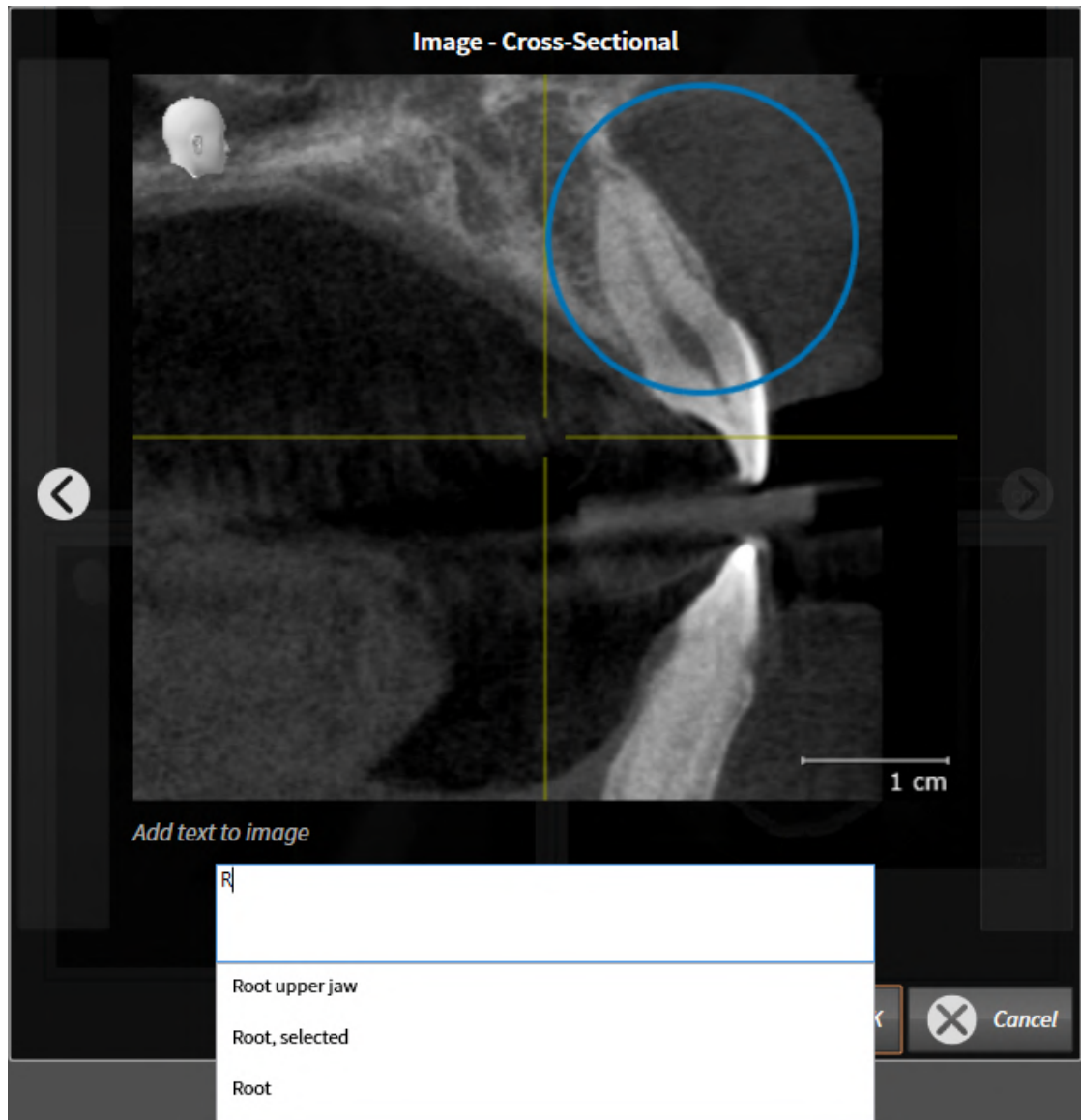
4. Enter text into the text input field.

   ► If the text you have entered is part of an existing text block, SICAT Endo will display the list of text blocks.

5. Click on the desired text block.

   ► SICAT Endo adds the text block to the text input field.

6. If the desired text is not available as a text block, enter a new text.

7. Click on the **OK** button.

   ► SICAT Endo saves the text as a description of the screenshot.

   ► If the text you have entered is not available as a text block, SICAT Endo will save the description as a new text block in your user profile.

8. If you wish to change the order of elements in the report, adjust them using drag & drop.

> **i** If you place the mouse pointer on a text block, SICAT Endo will display the **Remove this auto complete text from the list** icon. If you click on the **Remove this auto complete text from the list** icon, SICAT Endo will remove the text block from your user profile.

> **i** You can switch between the elements in the window showing the enlarged versions of the elements by clicking on the **Next item** button and **Previous item** button.

You can completely remove elements from the report using the **Object browser**. Information on this can be found in the section *Managing objects with the object toolbar [*▶*Page 113]*.

Continue with the section *Generating reports [*▶*Page 230]*.

> **i** SICAT Endo takes the practice logo and practice information text from the general settings. Information on this can be found in the section *Using practice information [*▶*Page 253]*.

34.3 GENERATING REPORTS

The following actions are available to generate a report:

- Saving report as a PDF file

- Printing report

SAVING REPORT AS A PDF FILE

☑ The **Report Generation** window is already open.
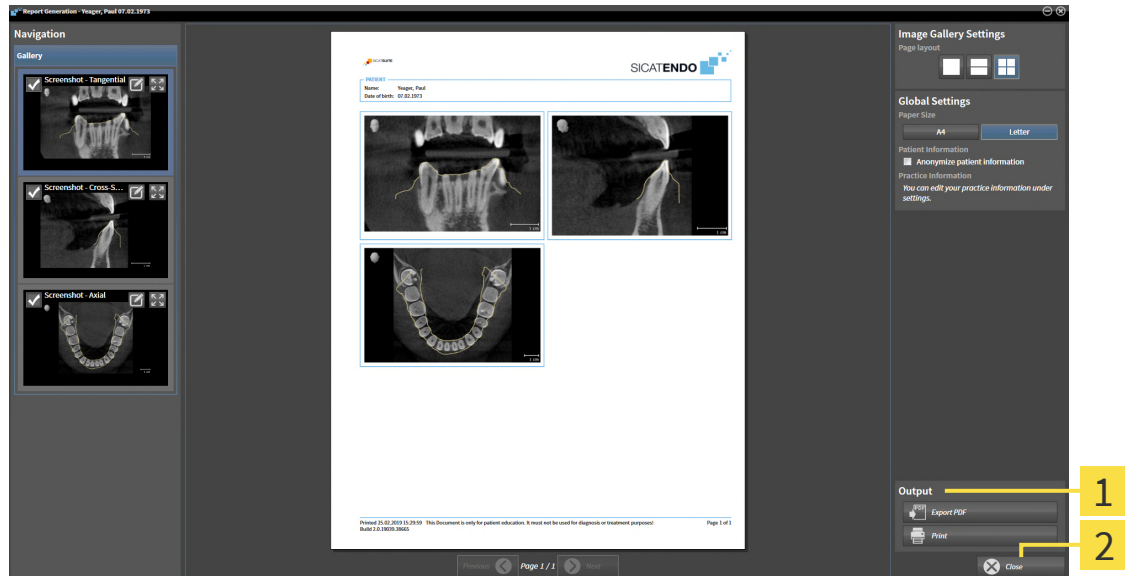
1 **Output** area

2 **Close** button

1. Click on the **Export PDF** button in the **output** area.

   ▶ A Windows Explorer window opens.

2. Switch to the directory in which you wish to save the report.

3. Enter a name in the **File name** field and click on **Save**.

▶ The Windows Explorer window closes.

▶ SICAT Endo saves the report as a PDF file.

> **i** SICAT Endo also saves the encrypted PDF file in the patient record.

PRINTING REPORT

> **i** Reports of a suitable quality require a printer that meets certain requirements. Information on this can be found in the section *System requirements [▶Page 10]*.

☑ The **Report Generation** window is already open.

1. Click on the **Print** button.

   ▶ The **Print** window opens.

2. Select the desired printer and adjust the print settings where necessary.

3. Click **Print**.

▶ SICAT Endo sends the report to the printer.

35 DATA EXPORT

You can export data.

You can export the studies of the patient record currently open.

SICAT Suite can export the following data:

- Patient records (DICOM)
- 3D studies
- Documents

Exported data may contain the following elements:

DATA TYPE	EXPORT FORMAT
3D scans	DICOM
3D studies	SICAT proprietary
Document	PDF

SICAT Suite exports 3D scans and studies either into Zip archives or DICOM directories. Where necessary, SICAT Suite can anonymize patient data for export.

PDF To export documents, select the documents in the **3D Scans and Planning Projects** area and click on the **Export data** button. Afterwards, a Windows Explorer window will open and you can select a target directory. You can then view the document in the standard PDF viewer.

Perform the following actions in the order stated to export data:

- Open the **Export data** window. Information on this can be found in the section *Opening the "Forwarding data" window [▶Page 233]*.
- Export the desired data. Information on this can be found in the section *Exporting data [▶Page 234]*.

35.1 OPENING THE "FORWARDING DATA" WINDOW

To export data, you first have to open the **Export data** window.

To open the **Export data** window, perform one of the following actions:

- Click on the **Export data** icon in the **Navigation bar** if a patient record is currently open for planning.
  ► The **Export data** window opens.

- Select a patient record in the **Patient record browser** window and click on the **Export data** button to forward the information of the selected patient.
  ► The **Export data** window opens.

- Select a 3D X-ray scan, a study or a planning object in the **Patient record browser** window and click the **Export data** button.
  ► The **Export data** window opens.

> **i** SICAT Suite exports only the 3D X-ray scans and planning projects of the patient record selected by you.

Continue with the section *Exporting data [▶Page 234]*.

35.2 EXPORTING DATA

To export studies, proceed as follows:

☑ The **Export data** window is already open. Information on this can be found in the section *Opening the "Forwarding data" window [▶Page 233]*.
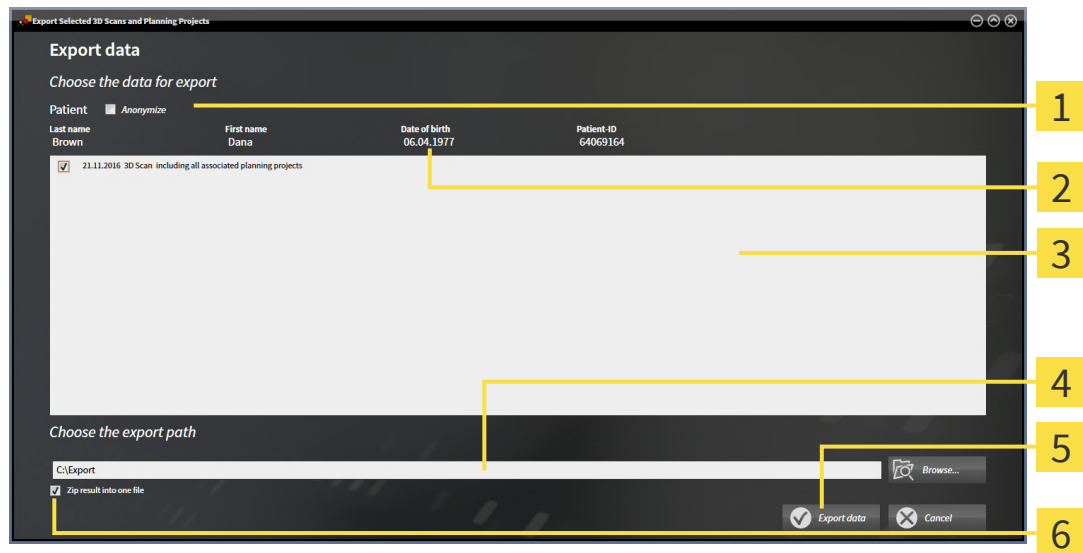
1	**Anonymize** check box	**4**	**Choose the export path** field
2	Attributes of the patient record	**5**	**Export data** button
3	List of 3D studies	**6**	**Zip result into one file** check box

1. Activate the **Anonymize** check box in the **Export data** window if desired.

   ► The attributes of the exported patient record will change to **Patient** for **Last name**, **Anonymous** for **First name** and **01.01** with the year of birth for **Date of birth**. The attributes of the patient record in the patient database remain unchanged.

2. Make sure that the desired 3D studies of the desired patient have been selected.

3. Click on the **Browse** button.

   ► The **Folder search** window opens.

4. Select a target folder and click on **OK** in the **Folder search** window.

   ► The **Folder search** window closes and SICAT Suite transfers the path of the desired folder to the **Choose the export path** field.

5. Activate or deactivate the **Zip result into one file** check box.

6. Click on the **Export data** button.

   ► SICAT Suite exports the selected studies into a Zip file or into the selected folder. The patient record is locked for the duration of the export.

Both Zip files and folders contain the 3D X-ray scans in DICOM format and planning data in a proprietary file format. You can view the 3D X-ray scans with any DICOM viewer and the planning data with the corresponding SICAT application.

36 ORDERING PROCESS

To order the desired product, proceed as follows:

- Place the desired planning data for surgical guides in the shopping cart in SICAT Endo. Information on this can be found in the section *Placing surgical guides in the shopping cart [▶Page 236]*.

- Check the shopping cart and start the order. Information on this can be found in the section *Checking the shopping cart and completing the order [▶Page 240]*.

- Complete the order either directly on the computer on which SICAT Suite is running or on another computer with an active Internet connection. For further information see section *Completing an order using an active Internet connection [▶Page 241]* or section *Completing an order without an active Internet connection [▶Page 245]*.

i	You can add orders to the shopping cart, which belong to different patients, 3D X-ray scans and applications. The contents of the shopping cart will remain when you close SICAT Suite.

i	During the ordering process, patient data must be saved in the patient record. Therefore, the patient record must not be locked by another user. Otherwise the ordering process cannot be continued until the patient record has been unlocked. For further information about locked patient records, refer to *Patient records [▶Page 89]* and *Unlocking patient records after lock has expired [▶Page 106]*.

36.1 PLACING SURGICAL GUIDES IN THE SHOPPING CART

⚠ **CAUTION**	**Incorrect data in an order may result in an incorrect order.**
	If you complete an order, ensure that you select and transfer the correct data for the order.

⚠ **CAUTION**	**An incorrect order might lead to the wrong treatment.**
	1. Check your order before sending it.
	2. Confirm the correct planning of your order.

General information on the ordering process can be found in the section *Ordering process [▶Page 235]*.

In SICAT Endo, you can place a **SICAT ACCESSGUIDE** surgical guide in the shopping cart in the first part of the ordering process. Certain prerequisites must be met so that you can place a **SICAT ACCESSGUIDE** in the shopping cart. SICAT Endo will notify you if you have not fulfilled all of the prerequisites.

IF THE PREREQUISITES ARE NOT FULFILLED

☑ The **Order** workflow step is already expanded. Information on this can be found in the section *Workflow toolbar [▶Page 108]*.

1. Click on the **Order SICAT ENDOGUIDE** icon.
   ▶ The **Order incomplete** window opens:
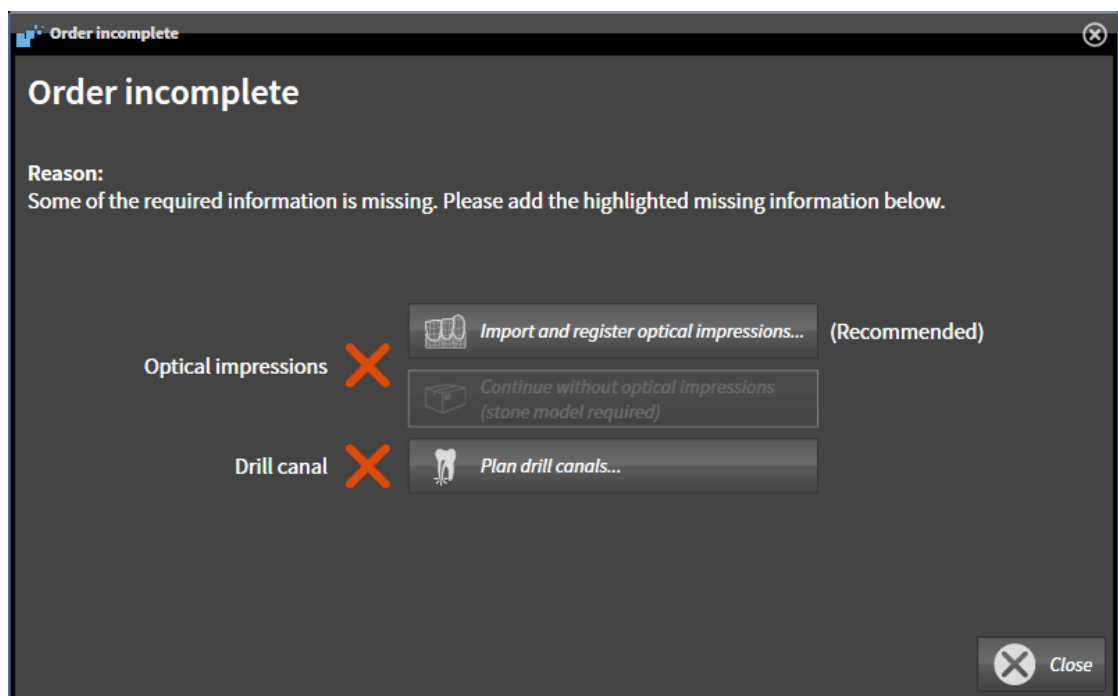
2. If you have not yet registered any optical impression, click on the **Import and register optical impressions** button and import an optical impression corresponding to the 3D X-ray scan. Information on this can be found in the section *Optical impressions [▶Page 160]*.

3. If you have not yet planned a drill channel, click on the **Plan drill canals** button and set at least one drill channel. Information on this can be found in the section *Planning drill channels [▶Page 211]*.

> **i** You may have to adjust the orientation of the volume and the panoramic curve, before importing optical impressions. You can access the **Adjust Volume Orientation and Panoramic Region** window directly from the **Import and Register Optical Impressions** window by clicking on the **Adjust panoramic region** button in the **Register** step. Information on this can be found in the section *Adjusting the panoramic region [▶Page 157]*.

> **i** If you wish to send plaster casts to SICAT instead of optical impressions, you can place surgical guides in the shopping cart without optical impressions by pressing the **Continue without optical impressions (stone model required)** button in the **Order incomplete** window. After this, the **Order Drill Guide** step will display the following information: **This order will be placed without optical impression data. The stone model must be sent to the SICAT Lab**

IF THE PREREQUISITES ARE FULFILLED

☑ You have imported at least one optical impression.

☑ You have already set EndoLines.

☑ You have already set drill channels.

☑ The **Order** workflow step is already expanded. Information on this can be found in the section *Workflow toolbar [▶Page 108]*.

- Click on the **Order SICAT ENDOGUIDE** icon.

▶ The **Order Drill Guide** window opens.

VALIDATE YOUR ORDER IN THE ORDER DRILL GUIDE WINDOW

☑ The **Order Drill Guide** window is already open.
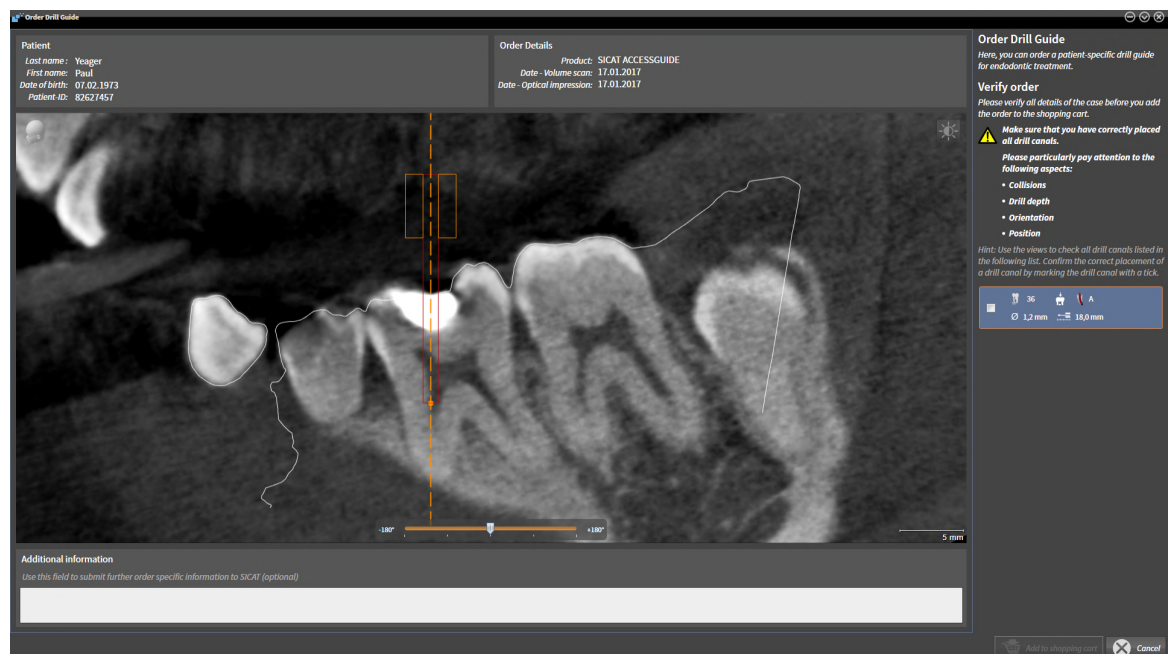
1. Check in the **Patient** section and **Order Details** section whether the patient information and scan information are correct.

2. Verify that you have correctly placed all drill channels.

3. To validate verification of a drill channel, mark the corresponding Endo planning object in the **Verify order** area.

    ► SICAT Endo marks the Endo planning object.

4. Place a check mark.

    ► SICAT Endo shows a green check mark.

5. Repeat the steps for all drill channels that are included in your order.

6. If desired, enter additional information for SICAT in the **Additional information** field.

7. Click on the **Add to shopping cart** button.

► SICAT Endo places the desired planning data for the **SICAT ACCESSGUIDE** in the SICAT shopping cart.

► The **Order Drill Guide** window closes.

► SICAT Endo opens the SICAT Suite shopping cart.

> **i** You can only add an order to the shopping cart if you have verified all planned drill channels and validated verification for each drill channel.

> **i** If you find a fault when verifying the drill channels but you have already validated verification by setting at least one check mark, please click on the **Cancel** button and repeat the order verification steps.

> **i** As long as there is an order in the shopping cart, you can no longer overwrite optical impressions, EndoLines and the drill channels of a plan. This is only possible once more when you have completed or deleted the order. If you overwrite or delete optical impressions, EndoLines or drill channels of a plan, you cannot re-order the same surgical guide.

> **i** You can cancel the order by clicking on **Cancel**.

Continue with the section *Checking the shopping cart and completing the order [▶Page 240]*.

36.2 OPENING THE SHOPPING CART

> **i**   The **Shopping Cart** icon shows the number of elements in the shopping cart.

☑ The shopping cart contains at least one product.

- ■ If the shopping cart is not yet open, click the **Shopping Cart** button on the **Navigation bar**.

▶ The **Shopping Cart** window opens.

Continue with the following action:

- ■ *Checking the shopping cart and completing the order [*▶*Page 240]*

36.3 CHECKING THE SHOPPING CART AND COMPLETING THE ORDER

☑ The **Shopping Cart** window is already open. Information on this can be found in the section *Opening the shopping cart [▶Page 239]*.
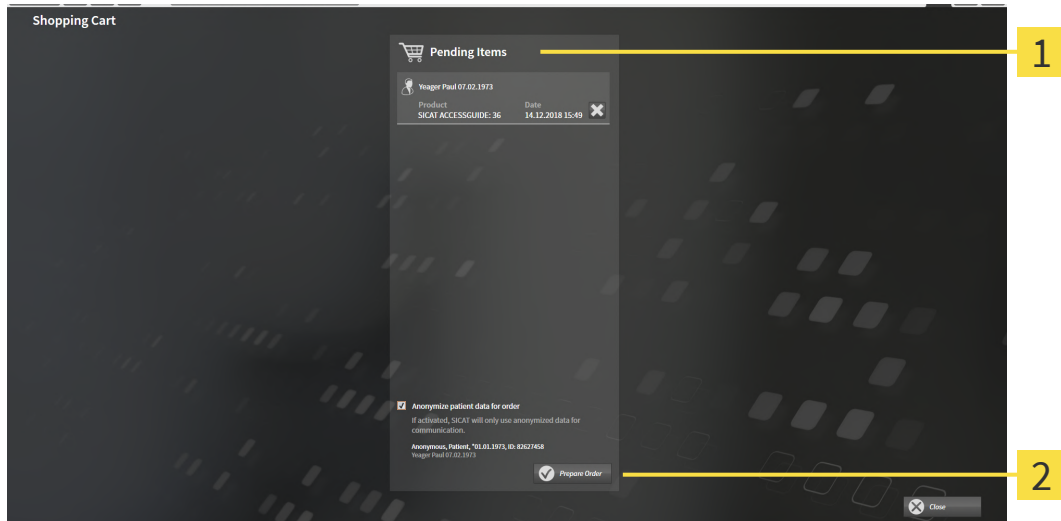
1 | **Pending Items** list

2 | **Prepare Order** button

1. Check in the **Shopping Cart** window whether the desired products are included.

2. Activate or deactivate the **Anonymize patient data for order** check box.

3. Click on the **Prepare Order** button.

▶ SICAT Suite sets the status of the orders to **Preparing** and establishes a connection to the SICAT server via the SICAT WebConnector.

▶ Changes to the order are only possible in the SICAT Portal with an active Internet connection.

> **i** Patient records for which you are preparing an order are locked until you have finalized your order.

Continue with one of the following actions:

- *Completing an order using an active Internet connection [▶Page 241]*

- *Completing an order without an active Internet connection [▶Page 245]*

36.4 COMPLETING AN ORDER USING AN ACTIVE INTERNET CONNECTION

> **i** In certain versions of Windows, you have to set a standard browser in order for the ordering process to work.

☑ The computer on which SICAT Suite is running has an active Internet connection.

☑ The **Allow access to the Internet for placing orders** checkbox is activated. Information on this can be found in the section *Using general settings [▶Page 249]*.

☑ The SICAT Portal was automatically opened in your browser.

1. Register or log in to the SICAT portal using your username and password if you have not already done so.

   ► The ordering overview opens and shows the products contained in the order, along with the corresponding prices, grouped according to patients.

2. Follow the instructions in the section *Performing ordering steps in the SICAT Portal [▶Page 242]*.

► SICAT Suite prepares the order data for uploading.

► As soon as the preparations are complete, SICAT WebConnector will transfer the order data via an encrypted connection to the SICAT server.

► The status of the order in the shopping cart will change to **Uploading**.

> **i** SICAT Suite will display orders until they are fully uploaded. This also applies to orders that are uploaded on another computer if several computers are using the active patient database. You can pause, continue and cancel the uploading of orders in the shopping cart that have been started on the current computer.

> **i** If you log off from Windows while uploading the orders, SICAT WebConnector will pause the process. The software will continue uploading automatically after you log back on.

36.5 PERFORMING ORDERING STEPS IN THE SICAT PORTAL

After you have performed ordering steps in SICAT Suite, the SICAT Portal will open in your standard web browser. In the SICAT Portal, you can change your orders, select qualified providers for production and view the prices of the products.

To perform ordering steps in the SICAT Portal, proceed as follows:

1. Register or log in to the SICAT portal using your username and password if you have not already done so.

2. Check whether the desired products are included.

3. If necessary, remove specific patients along with all corresponding products from the ordering overview. When completing the order, SICAT Suite will apply changes that you have made in the SICAT Portal.

4. Check whether the billing address and delivery address are correct. Change these where necessary.

5. Select the desired shipping method.

6. Accept the general terms and conditions and send off the order.

> **i** You can remove patients and all corresponding appliances from the SICAT Portal by selecting a patient and clicking on the button to remove the patient. In the shopping cart, you will again have full access to the composition of the products.

36.6 THE SICAT WEBCONNECTOR

> The SICAT WebConnector requires specific ports for communication with the SICAT server. Information on this can be found in the section *System requirements [▶Page 10]*.

> In certain versions of Windows, you have to set a standard browser in order for the ordering process to work.

If the computer, on which SICAT Suite is running, has an active Internet connection, SICAT Suite will transfer your orders in the background in encrypted format via the SICAT WebConnector. SICAT Endo will show the status of the transfer directly in the shopping cart and can pause the SICAT WebConnector. The SICAT WebConnector will continue the transfer even if you have closed SICAT Suite. If the order cannot be uploaded as desired, you can open the user SICAT WebConnector interface.

OPENING THE "SICAT SUITE WEBCONNECTOR" WINDOW

■ In the notifications area, click the **SICAT Suite WebConnector** icon in the task bar.

▶ The **SICAT Suite WebConnector** window opens:
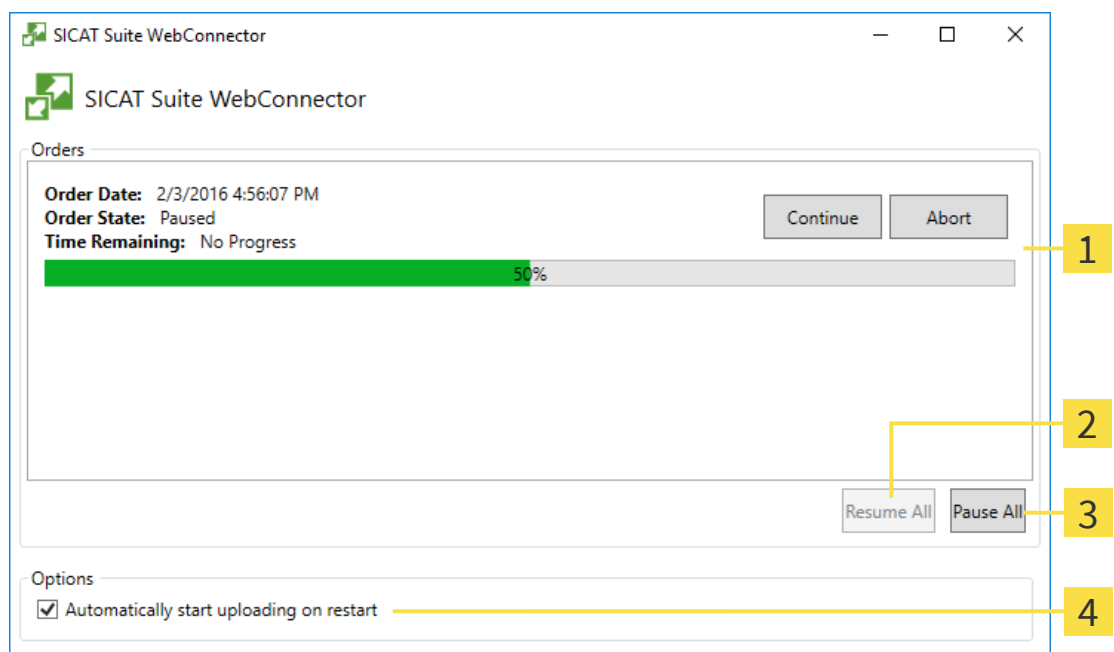
1	**Orders** list	**3**	**Stop all** button
2	**Continue all** button	**4**	**Continue uploading automatically after restart** check box

The **Orders** list shows the queue of orders.

PAUSING AND CONTINUING THE UPLOAD

You can pause the upload process. This may be sensible, for example, if your Internet connection is overloaded. The settings only affect upload processes in the SICAT WebConnector. Upload processes via a web browser are not affected.

☑ The **SICAT Suite WebConnector** window is already open.

1. Click on the **Stop all** button.

   ► The SICAT WebConnector pauses the uploading of all orders.

2. Click on the **Continue all** button.

   ► The SICAT WebConnector continues the uploading of all of the orders.

DEACTIVATING AUTOMATIC CONTINUATION AFTER A RESTART

You can prevent the SICAT WebConnector from automatically continuing uploads after restarting Windows.

☑ The **SICAT Suite WebConnector** window is already open.

■ Deactivate the **Continue uploading automatically after restart** check box.

► If you restart your computer, the SICAT WebConnector will no longer automatically continue uploading your orders.

36.7 COMPLETING AN ORDER WITHOUT AN ACTIVE INTERNET CONNECTION

If the computer on which SICAT Suite is running cannot connect to the SICAT server, SICAT Suite will open the **SICAT Suite - No connection to SICAT server** window. The window will indicate one of the following causes for the problem:

- **There is no Internet connection. SICAT WebConnector cannot connect to the SICAT server**

- **SICAT Portal is not available**

- **The "SICATWebConnector" service is not installed**

- **The "SICATWebConnector" service is not running**

- **An unknown error has occured. SICAT WebConnector cannot connect to the SICAT server**

This chapter only shows screenshots for the scenario that no Internet connection is available.

Below the cause, possible steps for solving the problem will be shown.

If you have deactivated the **Allow access to the Internet for placing orders** checkbox in the settings on the **General** tab, the **Sending the order from another computer** window opens directly.

As an alternative to troubleshooting or if you have disabled access to the Internet, you can upload an order via a web browser on another computer with an active Internet connection. For orders via web browser, SICAT Suite will export all products in the shopping cart at once and create one sub-folder per patient. Each sub-folder contains one XML file with the information regarding the order and a ZIP archive with the data SICAT needs for production. In the SICAT Portal, you can then successively upload the XML file and the ZIP archive. The transfer will be encrypted.

To complete the order without an active Internet connection, proceed as follows:

☑ The computer on which SICAT Suite is running does not have an active Internet connection.

☑ A window will appear with the following message: **Unable to connect to the SICAT server**
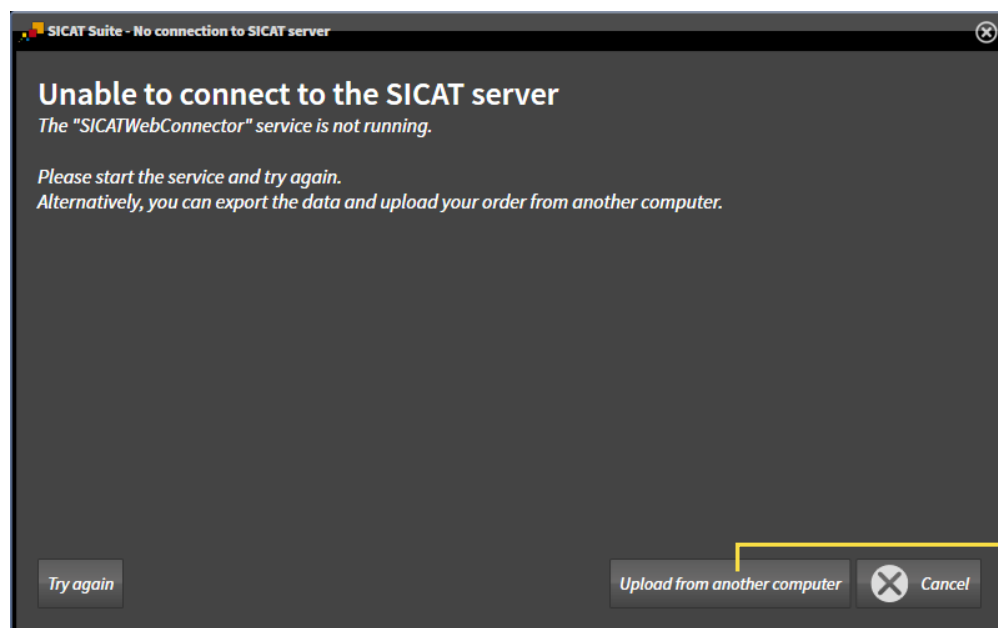
1   **Upload from another computer** button

1. Click on the **Upload from another computer** button.

▶ The **Sending the order from another computer** window opens:
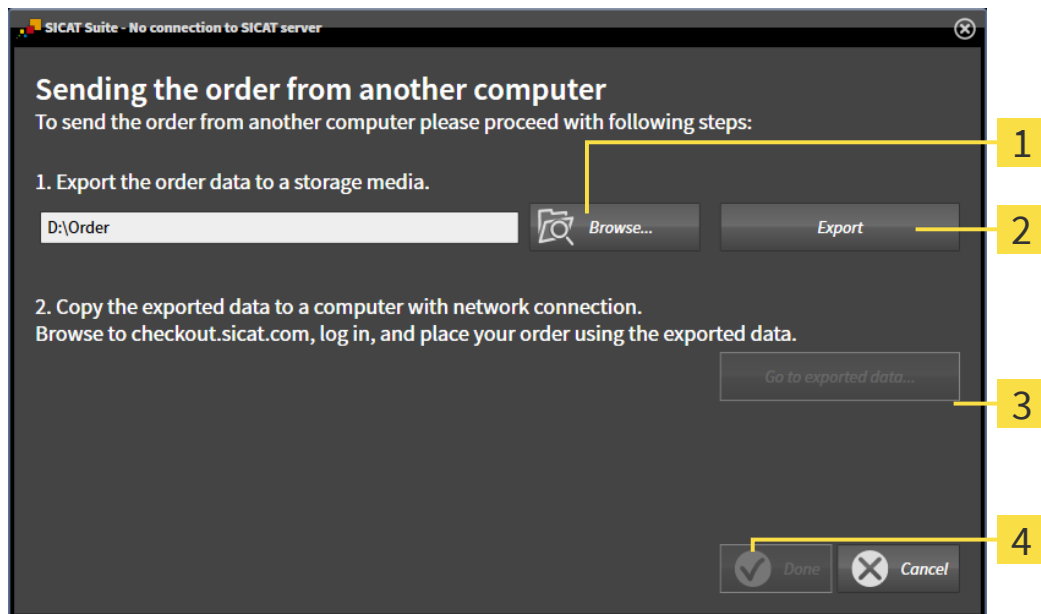
1	**Browse** button	**3**	**Go to exported data** button
2	**Export** button	**4**	**Done** button

2. Click on the **Browse** button.

   ▶ A Windows Explorer window opens.

3. Select an existing directory or create a new directory and click on **OK**. Please note that the path to the directory must not be longer than 160 characters.

4. Click on the **Export** button.

   ▶ SICAT Suite will export all data required for ordering the shopping cart contents to the selected folder. SICAT Suite will create a sub-folder for each patient.

5. Click on the **Go to exported data** button.

   ▶ A Windows Explorer window opens and shows the directory with the exported data:
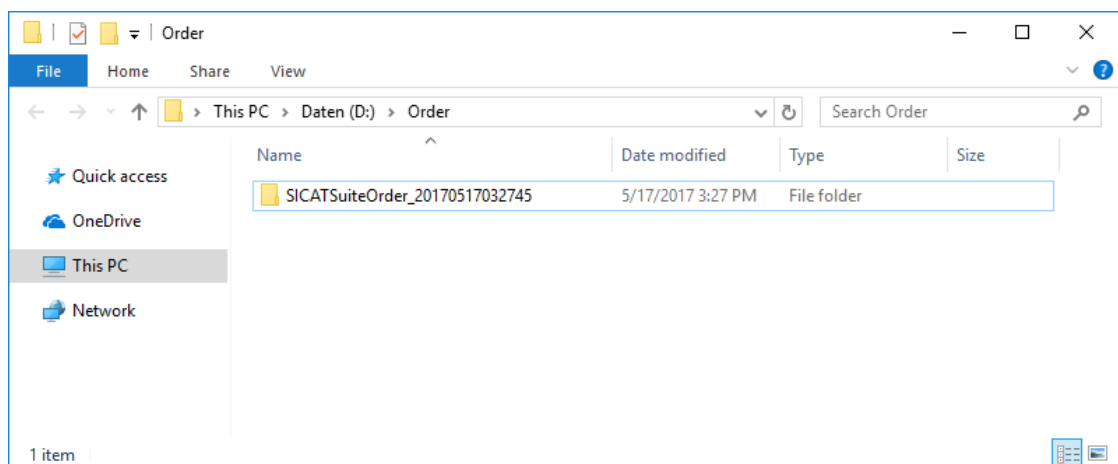
6. Copy the folder that contains the data of the required appliances to a computer with an active Internet connection, for example using a USB stick.

7. Click on **Done** in the **Sending the order from another computer** window.

    ▶ SICAT Suite closes the **Sending the order from another computer** window.

    ▶ SICAT Suite removes all products included in the order from the shopping cart.

8. Open a web browser on the computer with the active Internet connection and open the www.sicat.com web page.

9. Select the link for the SICAT portal.

    ▶ The SICAT portal opens.

10. Register or log in to the SICAT portal using your username and password if you have not already done so.

11. Click on the link to upload the order.

12. Select the desired order on the computer with the active Internet connection. This is an XML file whose name starts with **SICATSuiteOrder**.

    ▶ The ordering overview opens and shows the patients contained therein, the corresponding product and the price.

13. Follow the instructions in the section *Performing ordering steps in the SICAT Portal [▶Page 242]*.

14. Click on the link to upload the planning data for the product.

15. Select the corresponding product data on the computer with the active Internet connection. This is a Zip archive that is located in the same folder as the previously uploaded XML file and whose file name starts with **SICATSuiteExport**.

▶ Once you have executed the order, your browser will transfer the archive with the product data to the SICAT server via an encrypted connection.

> **ⓘ** SICAT Suite does not automatically delete exported data. When an ordering process is completed, you should delete exported data manually for security reasons.

37 SETTINGS

You can change or view general settings in the **Settings** window. After you have clicked on the **Settings** icon, the option bar will show the following tabs on the left-hand side of the **Settings** window:

■ **General** - Information on this can be found in the section *Using general settings [▶Page 249]*.

■ **Patient Database** - You can define the connection to a patient database. Information on this can be found in the section *Patient database [▶Page 67]*.

■ **Licenses** - Information on this can be found in the section *Licenses [▶Page 56]*.

■ **Practice** – Viewing or changing the logo and the information text of your practice, for example for use on print-outs. Information on this can be found in the section *Using practice information [▶Page 253]*.

■ **SIDEXIS 4** - Only relevant if SIDEXIS 4 is installed on your system.

■ **Hub** - Activating or deactivating Hub use. Information on this can be found in the section *Activating and deactivating Hub use [▶Page 254]*.

■ **Visualization** – Changing general visualization settings. Information on this can be found in the section *Changing visualization settings [▶Page 256]*.

If you change the settings, SICAT Endo will apply the changes immediately and saves the settings in your user profile.

37.1 USING GENERAL SETTINGS

To open the general settings, proceed as follows:

1. Click on the **Settings** icon in the **Navigation bar**.

   ► The **Settings** window opens.

2. Click the **General** tab.

   ► The **General** window opens:
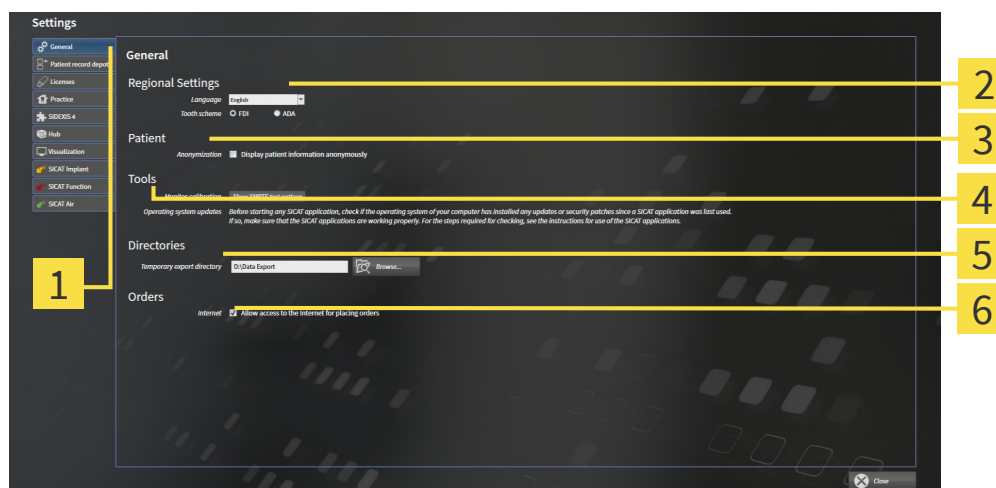
1	**General** tab	**4**	**Tools** area
2	**Regional Settings** area	**5**	**Directories** area
3	**Patient** area	**6**	**Orders** area

You can change the following settings:

■ You can change the language of the user interface in the **Language** list in the **Regional Settings** area.

■ You can change the current in the tooth scheme in the **Regional Settings** area under **Tooth scheme**.

■ You can change the status of the **Display patient information anonymously** check box in the **Patient** area. If the check box is selected, SICAT Suite will display the attributes of the patient record in the **Navigation bar** as **Patient** for **Last name**, **Anonymous** for **First name** and **01.01.** with the year of birth for **Date of birth**. In the **SICAT Suite Home** window, SICAT will hide the **Recent patient records** list.

■ In the **Directories** area, you can enter a folder in the **Temporary export directory** field in which SICAT Suite is to save order information. You must have full access to this folder.

■ You can change the status of the **Allow access to the Internet for placing orders** check box in the **Orders** area. If the checkbox is activated, SICAT Suite connects to the Internet to place orders.

Besides viewing or changing general settings, you can open the SMPTE test image to calibrate your monitor:

■   Click on the **Show SMPTE test pattern** button under **Tools**, **Monitor calibration** to calibrate your monitor. Information on this can be found in the section Monitor calibration with the SMPTE test image.

> **i**   The supported tooth schemes are FDI and ADA.

37.2 MONITOR CALIBRATION WITH THE SMPTE TEST IMAGE

> ⚠️ **CAUTION**
>
> **Insufficient environmental visualization conditions could result in incorrect diagnosis and treatment.**
>
> 1. Only perform planning if the environmental conditions allow for sufficient visualization quality. For example, check for appropriate lighting.
> 2. Check whether the display quality is sufficient using the SMPTE test image.

The suitability of your monitor for displaying data in SICAT applications depends on four key properties:

- Brightness
- Contrast
- Local resolution (linearity)
- Distortion (aliasing)

The SMPTE test image is a reference image, which helps you check the following properties of your monitor:
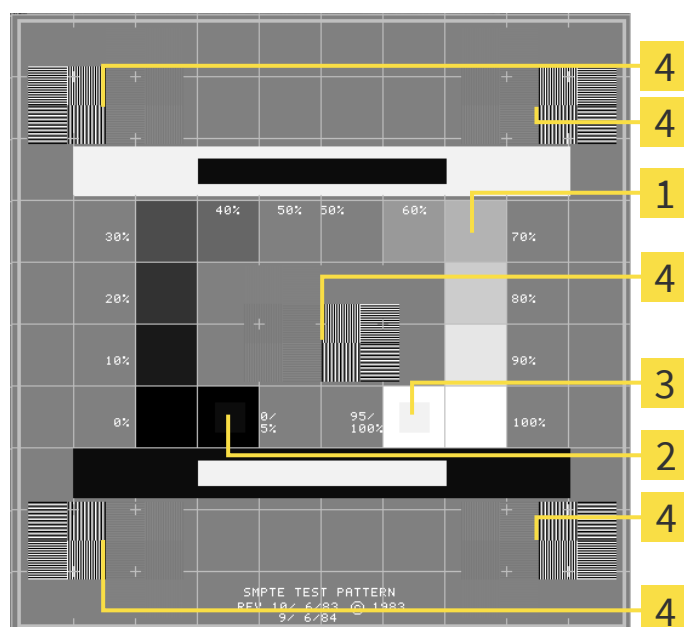
1	Gray scale squares	**3**	100% square
2	0% square	**4**	Squares containing a sample bar with a high contrast

CHECKING BRIGHTNESS AND CONTRAST

In the middle of an SMPTE test image there is a series of squares, showing the gray scale progression from black (0% brightness) to white (100% brightness):

- The 0% square contains a smaller square to show the difference in brightness between 0% and 5%.
- The 100% square contains a smaller square to show the difference in brightness between 95% and 100%.

To check or configure your monitor, proceed as follows:

☑ The SMPTE test image is already open.

■ Check whether you can see the visual difference between the inner square and outer square in the 0% square and 100% square. Change the settings of your monitor where necessary.

> **i** Several monitors can only show the difference in brightness in the 100% square, but not the 0% square. You can reduce ambient light to improve the ability to distinguish between the different brightness levels in the 0% square.

CHECKING THE LOCAL RESOLUTION AND DISTORTION

In the corners and the middle of the SMPTE test image, there are 6 squares showing a sample bar with a high contrast. In terms of local resolution and distortion, you should be able to differentiate between horizontal and vertical lines with different widths, which change between black and white:

■ From wide to narrow (6 pixels, 4 pixels, 2 pixels)

■ Horizontal and vertical

To check or configure your monitor, proceed as follows:

■ Check in the 6 squares containing a sample bar with a high contrast whether you can see the differences between all of the lines. Change the settings of your monitor where necessary.

CLOSING THE SMPTE TEST IMAGE

To close the SMPTE test image, proceed as follows:

■ Press the **ESC** key.

► The SMPTE test image closes.

37.3 USING PRACTICE INFORMATION

The applications in SICAT Suite use the information displayed here to customize outputs or PDF files.

To open the practice information, proceed as follows:

1. Click on the **Settings** icon in the **Navigation bar**.

   ► The **Settings** window opens.

2. Click the **Practice** tab.

   ► The **PRACTICE** window opens:
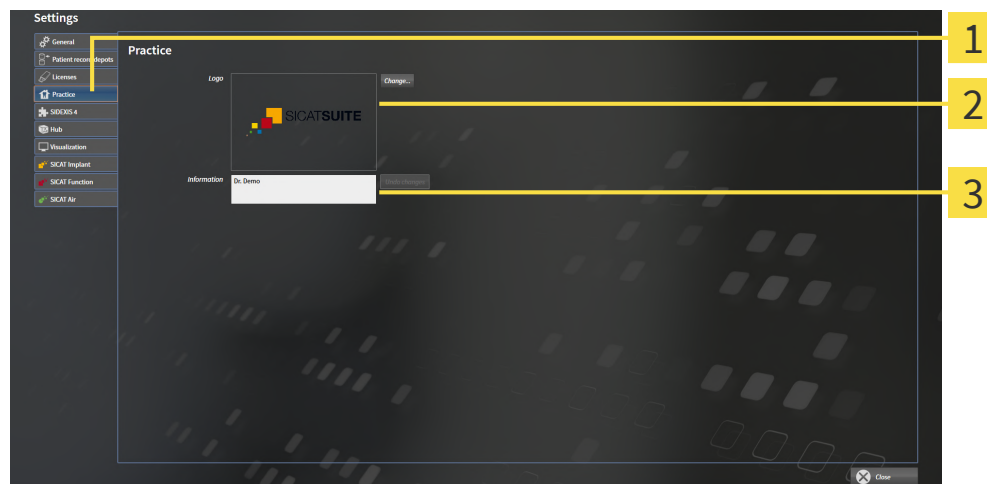
1	**Practice** tab
2	**Logo** area
3	**Information** area

You can change the following settings:

- You can set the logo of your practice in the **Logo** area. You can select the logo of your practice using the **Change** button. SICAT Suite copies the selected file to your SICAT Suite user directory.

- You can enter a text which identifies your practice, for example the name and address, in the **Information** area. You can increase the number of lines to a maximum of five by pressing the **Enter** key. You can undo changes to the information text by clicking the **Undo changes** button.

37.4 ACTIVATING AND DEACTIVATING HUB USE

In the settings, you can activate and deactivate Hub use and check the connection settings. In the default setting, Hub use is deactivated.

ACTIVATING HUB USE

☑ The license for using the Hub is activated. Information on this can be found in the section *Licenses [▶Page 56]*.

1. Click on the **Settings** icon in the **Navigation bar**.

   ► The **Settings** window opens.

2. Click on the **Hub** tab.

   ► The **Hub** window opens:
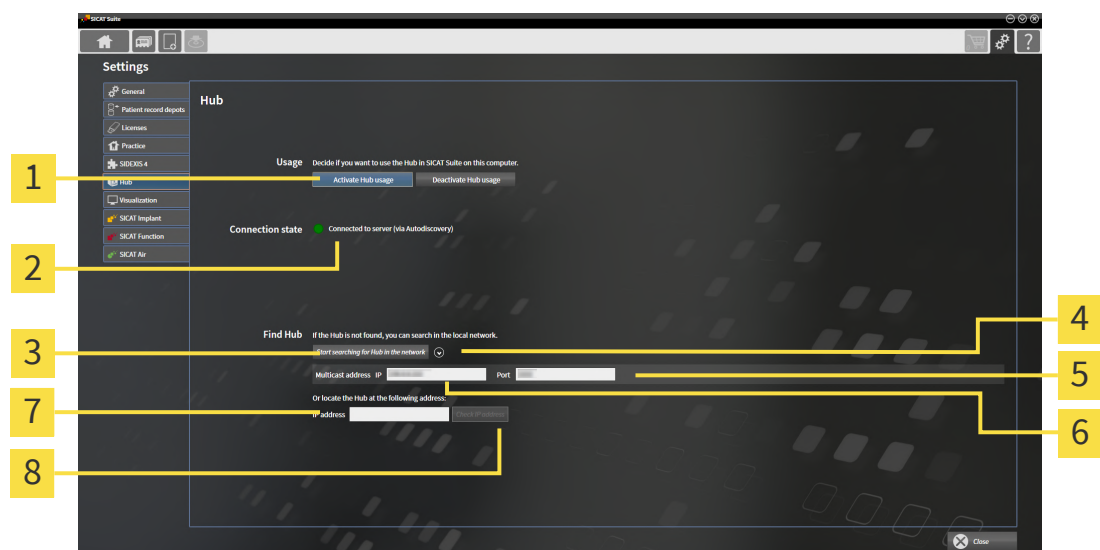
1	**Activate Hub usage** and **Deactivate Hub usage**	**5**	Input field **Port**
2	**Connection state**	**6**	Input field **Multicast address IP**
3	**Start searching for Hub in the network** button	**7**	Input field **IP address**
4	Show and hide	**8**	**Check IP address** button

3. Click on the **Activate Hub usage** button.

   ► SICAT Suite attempts to connect to the Hub.

   ► If a green icon appears next to **Connection state**, SICAT Suite was able to connect to the Hub.

   ► If a red icon appears next to **Connection state**, SICAT Suite was not able to connect to the Hub.

4. If SICAT Suite was not able to connect to the hub, check whether the multicast address set on the Hub differs from the one shown here:
   – Click on the 🔲 icon next to the **Start searching for Hub in the network** button.
   – In the **Multicast address** field, enter the multicast address set on the Hub. By default, the multicast address is 239.0.0.222.

– In the **Port** field, enter the port set on the Hub. By default, the port is 2222.
– Click on the **Start searching for Hub in the network** button. When SICAT Suite finds the Hub, the green icon is displayed and the Hub can be used.

5. If SICAT Suite was not able to connect to the Hub using a multicast address, try connecting by directly entering the Hub's IP address:
– Enter the Hub's IP address in the field **IP address** and click on the **Check IP address** button. If SICAT Suite finds the Hub under the specified IP address, the Hub can be used.

6. If SICAT Suite was not able to connect to the Hub using either a multicast address or the Hub's IP address, contact customer support for the Hub.

DEACTIVATING HUB USE

1. Click on the **Settings** icon in the **Navigation bar**.

2. Click on **Hub** in the **Settings** window.

   ▶ The **Hub** window opens.

3. Click on the **Deactivate Hub usage** button.

   ▶ SICAT Suite deactives Hub use.

37.5 CHANGING VISUALIZATION SETTINGS

⚠ **CAUTION**	**Insufficient visualization quality could result in incorrect diagnosis and treatment.**
	Before using a SICAT application, for example with the SMPTE test image, check whether the display quality is sufficient.

⚠ **CAUTION**	**Insufficient environmental visualization conditions could result in incorrect diagnosis and treatment.**
	1. Only perform planning if the environmental conditions allow for sufficient visualization quality. For example, check for appropriate lighting.
	2. Check whether the display quality is sufficient using the SMPTE test image.

Visualization settings determine the visualization of the volume, diagnosis objects and planning objects in all SICAT applications.

To open the **Visualization** window, proceed as follows:

1. Click on the **Settings** icon.

   ► The **Settings** window opens.

2. Click the **Visualization** tab.

   ► The **Visualization** window opens:
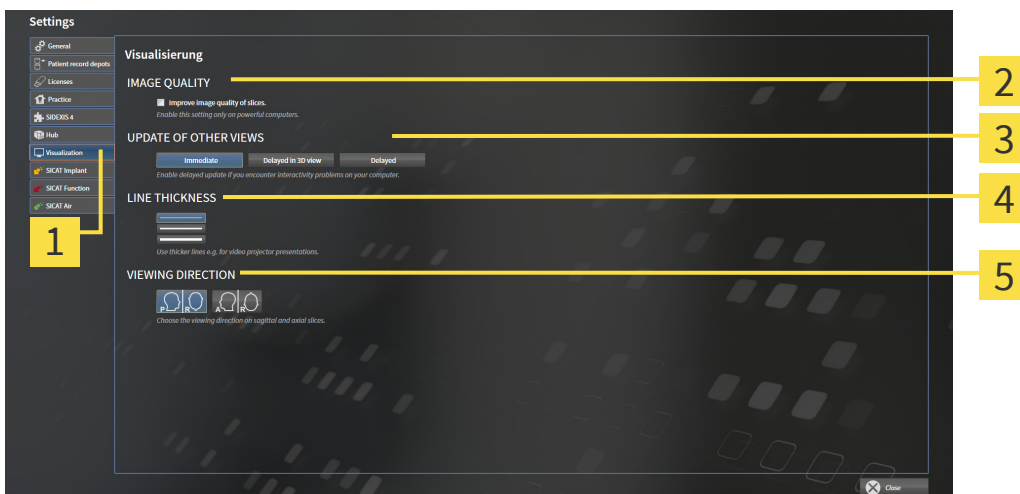
1	**Visualization** tab	**4**	**LINE THICKNESS** area
2	**IMAGE QUALITY** area	**5**	**VIEWING DIRECTION** area
3	**UPDATE OF OTHER VIEWS** area		

The settings are:

- **Improve image quality of slices** – Improves the image quality of slices as the software averages adjacent slices. Activate this setting only on high-performance computers.

- **UPDATE OF OTHER VIEWS** – Delayed updates improve the interactivity of the active view but causes delays in the updating of other views. Activate delayed updates only if you detect interactivity problems on your computer.

- **LINE THICKNESS** – Changes the thickness of lines. Thicker lines are useful for presentations on projectors.

- **VIEWING DIRECTION** – Switches the viewing directions of the **Axial** slice view and **Sagittal** slice view.

38 SUPPORT

SICAT offers you the following support options:

- PDF documents

- Contact information

- Information on the installed SICAT Suite and SICAT applications

Continue with the following action:

- *Opening the support options [▶Page 259]*
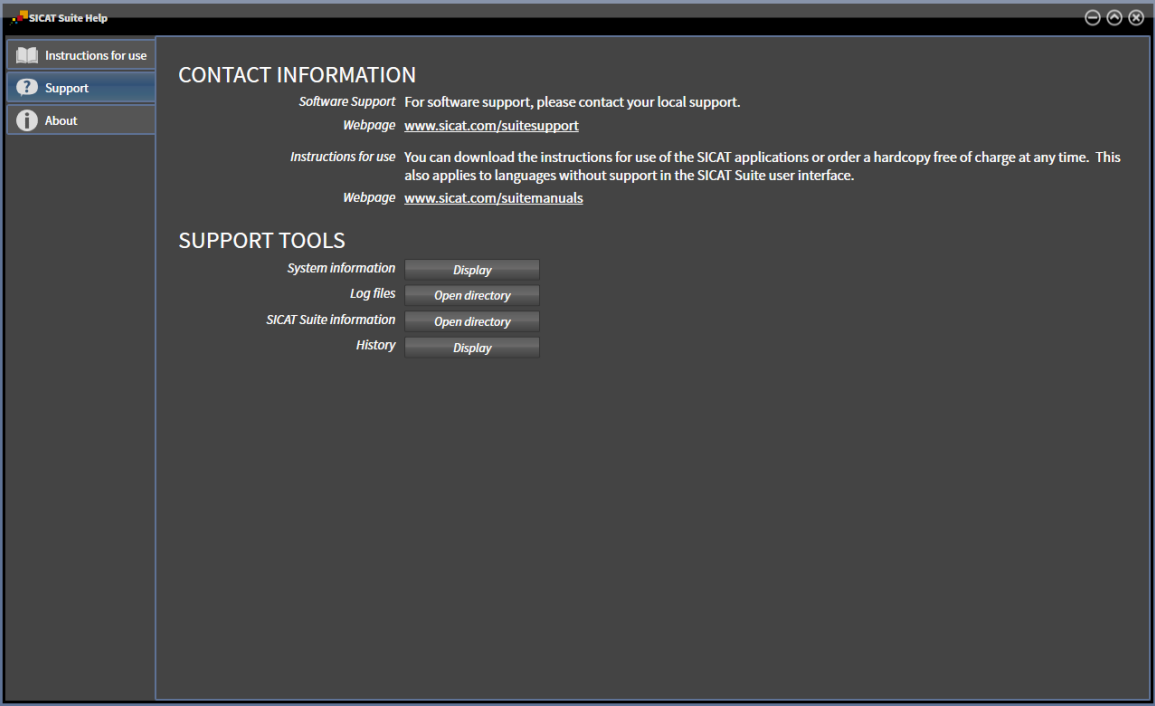
38.1 OPENING THE SUPPORT OPTIONS

You can open the **Support** window by clicking the **Support** icon in the **Navigation bar** or pressing the F1 key.

The SICAT Suite **Support** window comprises the following tabs:

- **Instructions for use** - Information on this can be found in the section *Opening the instructions for use [▶Page 55].*

- **Support** - Information on this can be found in the section *Contact information and support tools [▶Page 260].*

- **About** - Information on this can be found in the section Info.

38.2 CONTACT INFORMATION AND SUPPORT TOOLS

The **Support** window contains all of the relevant information and tools to enable SICAT Support to help you:
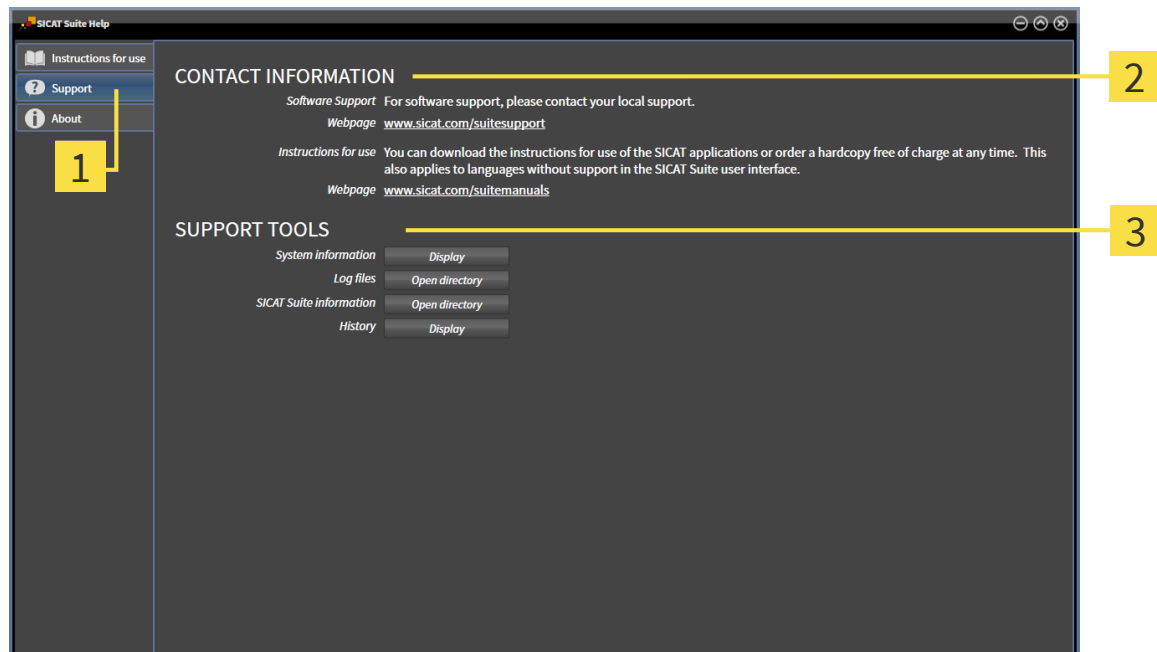
	Support tab		**SUPPORT TOOLS** area
2	**CONTACT INFORMATION** area		

The **CONTACT INFORMATION** area contains information about where you can find the instructions for use.

The following tools are available in the **SUPPORT TOOLS** area:

- Click on the **Display** button in the **System information** area and SICAT Endo will open the system information of the operating system.

- Click on the **Open directory** button in the **Log files** area and SICAT Endo will open the log directory of SICAT Suite in a Windows Explorer window.

- Click on the **Open directory** button in the **SICAT Suite information** area and **SICAT Suite information** will export information on the current installation in a text file.

- Click on **Show messages** in the **SICAT Suite information** area and SICAT Endo will show the message window.

38.3 ABOUT

The **About** tab displays information on SICAT Suite and all installed SICAT applications on several tabs:
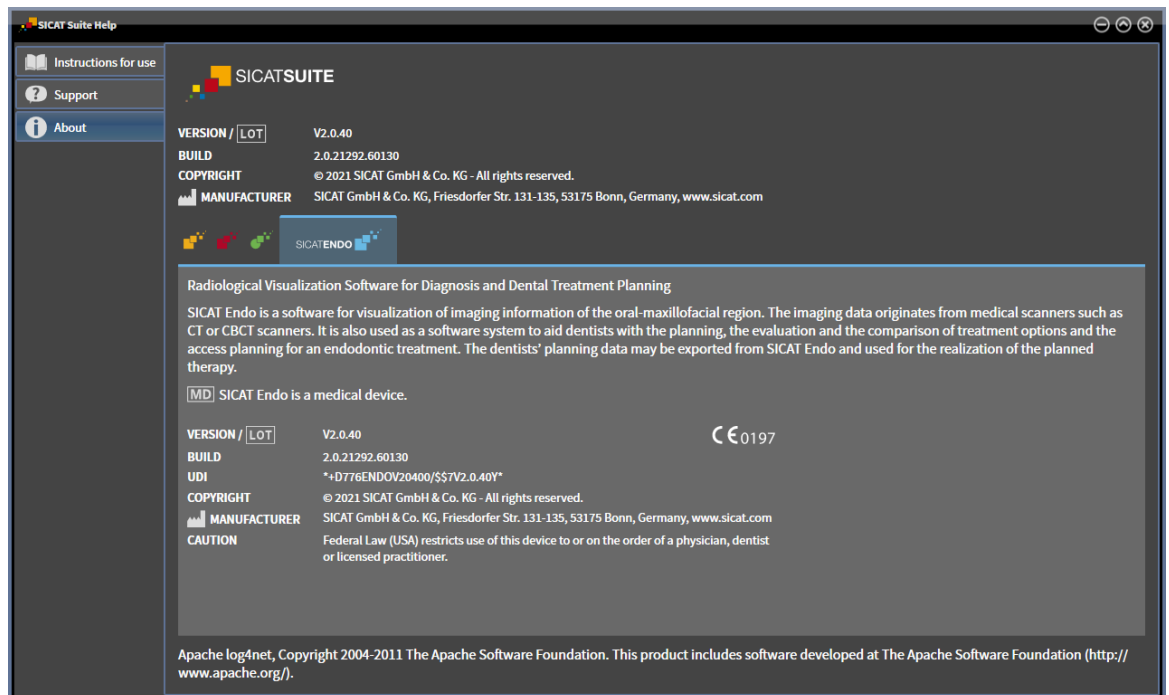
39 OPENING READ-ONLY DATA

You can open data as read-only.

Which data you can view in the stand-alone version without being able to make and save changes depends on the status of your license:

TYPE OF SICAT ENDO LICENSE	VIEWING WITHOUT CHANGES POSSIBLE?
None	Yes, for SICAT data
Viewer	Yes
Full version	Yes, if the patient record is locked

You can only view DICOM data if you have activated a full version license of SICAT Endo.

See also

▶ Working with patient records [▶ 93]

40 CLOSING SICAT ENDO

To close SICAT Endo, proceed as follows:

- Click on the **Close** button in the area of the active patient record.

▶ SICAT Suite saves the active patient record.

▶ SICAT Suite closes all SICAT applications.

▶ SICAT Suite closes the active patient record.

41 CLOSING SICAT SUITE

■ Click on the **Close** button in the top right-hand corner of SICAT Suite.

▶ If the full version of SICAT Suite is running, it has write authorization and a study is opened, it will save all planning projects.

▶ SICAT Suite closes.

42 KEYBOARD SHORTCUTS

> ℹ️ If you move the mouse pointer over certain functions, SICAT Endo displays the keyboard shortcut in brackets next to the designation of the function.

The following keyboard shortcuts are available in all SICAT applications:

KEYBOARD SHORTCUTS	DESCRIPTION
A	Add an angle measurement
D	Add a distance measurement
F	Focus on an active object
Ctrl + C	Copy the contents of the active view to the clipboard
Ctrl + Z	Undo the last object action
Ctrl + Y	Redo the most recently undone object action
Del	Remove the active object or active object group
ESC	Cancel the current action (such as adding a measurement)
F1	Open the **Support** window, if a SICAT application is active, open the instructions for use

43 UNINSTALLING SICAT SUITE

> The SICAT Suite uninstallation program maintains active licenses on your computer. Therefore, SICAT Suite warns you that it will not automatically delete licenses before the uninstallation. If you no longer wish to use SICAT Suite on this computer, deactivate the licenses before uninstallation. Information on this can be found in the section *Returning workstation licenses to the license pool [▶Page 64]*.

> Before uninstalling SICAT Suite, make sure that the SICAT WebConnector has uploaded all orders in full as the uninstallation program will automatically close the SICAT WebConnector. Information on this can be found in the section *The SICAT WebConnector [▶Page 243]*.

To uninstall SICAT Suite, proceed as follows:

☑ The SICAT WebConnector has successfully uploaded all orders.

1. Click on **Programs and features** in the Windows **Control panel**.

   ▶ The **Programs and features** window opens.

2. Select the **SICAT Suite** entry, which contains the version of SICAT Suite, from the list.

3. Click on the **Uninstall** button and confirm the prompt.

   ▶ The uninstallation program starts.

   ▶ After the uninstallation is completed, the **CONFIRMATION** window opens.

4. Click on the **Finish** button.

▶ The SICAT Suite uninstallation program will close.

> To open the SICAT Suite uninstallation program, you can also start the SICAT Suite installation program on a computer, on which SICAT Suite is already installed.

> The SICAT Suite uninstallation program will call the uninstallation programs of some software prerequisites, which were installed together with SICAT Suite. If other installed applications still need the software prerequisites, they will be retained.

44 UNINSTALLING THE SICAT SUITE PATIENT DATABASE

To uninstall SICAT Suite Patient Database, proceed as follows:

☑ SICAT Suite has already been uninstalled.

1. Click on **Programs and features** in the Windows **Control panel**.

   ▶ The **Programs and features** window opens.

2. Select the entry **SICAT Suite Patient Database** from the list. This entry contains the version number of the SICAT Suite Patient Database.

   ▶ The SICAT Suite Patient Database uninstallation program starts. The **OPTIONS** window opens:
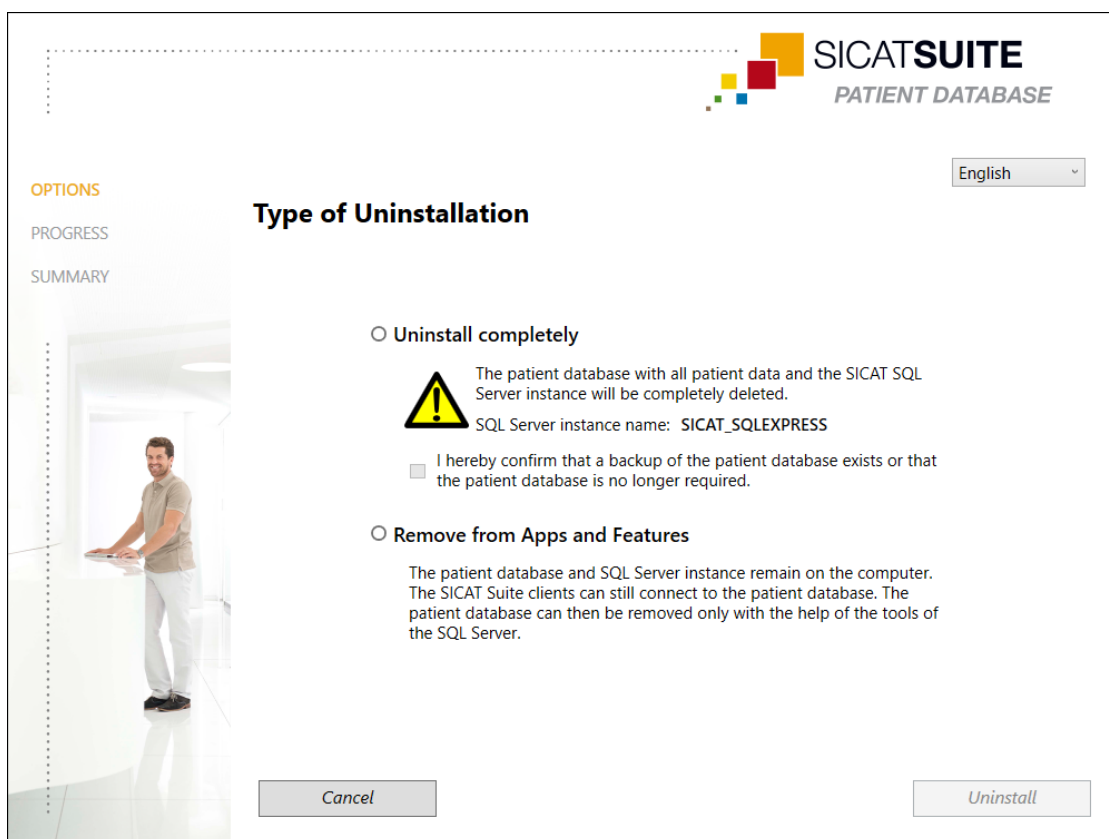
3. Select the check box **Uninstall completely** to completely uninstall the SICAT Suite Patient Database or select the check box **Remove from Apps and Features** to only remove the SICAT Suite Patient Database entry from **Programs and features**.

4. If you want to uninstall the SICAT Suite Patient Database completely and have saved the patient data or no longer need it, enable the check box **I hereby confirm that a backup of the patient database exists or that the patient database is no longer required**.

5. Click on the **Uninstall** button and confirm the prompt.

   ▶ The **PROGRESS** window opens.

   ▶ The SICAT Suite Patient Database is uninstalled.

   ▶ When the uninstallation has been completed, the **SUMMARY** window opens.

6. Click on the **Finish** button.

▶ The SICAT Suite Patient Database uninstallation program closes.

45 SAFETY INSTRUCTIONS

3D X-RAY SCANS

⚠️ **CAUTION**	**Unsuitable X-ray devices may result in an incorrect diagnosis and treatment.**
	Only use 3D X-ray scans from X-ray devices that are cleared as medical equipment.

⚠️ **CAUTION**	**Unsuitable 3D X-ray scans may result in an incorrect diagnosis and treatment.**
	Always verify the quality, integrity, and correct orientation of the displayed 3D data.

⚠️ **CAUTION**	**X-ray devices without DICOM conformity could result in incorrect diagnosis and treatment.**
	Only use 3D volume data from X-ray devices with DICOM conformity declared.

⚠️ **CAUTION**	**The use of other data than 3D X-ray scans as source of information for planning a measurement-based therapy may result in an incorrect diagnosis and treatment.**
	Use 3D X-ray scans for diagnosis and planning when using the measurement feature.

INTRAORAL SCANS

⚠️ **CAUTION**	**3D X-ray scans that are unsuitable for registering intraoral scans may result in an incorrect diagnosis and treatment.**
	1. Only use 3D X-ray scans containing little or no artefacts.
	2. Only use 3D X-ray scans with sufficiently high resolution.

⚠️ **CAUTION**	**Intraoral scans that do not match the patient and the 3D X-ray scan or whose record time is too far away from the record time of the 3D X-ray scan may result in an incorrect diagnosis and treatment.**
	Make sure that the patient and 3D X-ray scan of an intraoral scan match and that their record time is not too far away from the record time of the 3D X-ray scan.

⚠️ **CAUTION**	**Incorrect orientation of the intraoral records relative to the 3D X-ray scan may result in an incorrect diagnosis and treatment.**
	1. Check that the registered intraoral scans are correctly aligned to the 3D X-ray scans.
	2. If required, rotate the intraoral scans to orient them correctly.

⚠ **CAUTION**	**Intraoral scans that have not been registered correctly with the 3D X-ray scans may result in an incorrect diagnosis and treatment.** Check that the intraoral records have been correctly registered with the 3D X-ray scans.
⚠ **CAUTION**	**Devices for intraoral scans that are not certified as a medical device may result in incorrect diagnosis and treatment.** Make sure to use only devices that are certified as a medical device for intraoral scans.
⚠ **CAUTION**	**Insufficient integrity or quality of intraoral scans may result in an incorrect diagnosis and treatment.** Check the integrity and quality of the imported intraoral scans.
⚠ **CAUTION**	**Insufficient quality of the intraoral records or 3D X-ray scans may cause the mechanism for registering the inraoral records to fail.** Only use intraoral scans and 3D X-ray scans that allow for a correct registration.
⚠ **CAUTION**	**Insufficient quality and precision of intraoral scans may result in an incorrect diagnosis and treatment.** Only use intraoral scans of sufficient quality and precision for the intended diagnosis and treatment.
⚠ **CAUTION**	**Incorrect positions or orientations of the intraoral scans may result in an incorrect diagnosis and treatment.** After registration, check for correct position and orientation of the intraoral scans on the teeth in the 3D X-ray scan.

DISPLAY CONDITIONS

⚠ **CAUTION**	**Insufficient visualization quality could result in incorrect diagnosis and treatment.** Before using a SICAT application, for example with the SMPTE test image, check whether the display quality is sufficient.
⚠ **CAUTION**	**Insufficient environmental visualization conditions could result in incorrect diagnosis and treatment.** 1. Only perform planning if the environmental conditions allow for sufficient visualization quality. For example, check for appropriate lighting. 2. Check whether the display quality is sufficient using the SMPTE test image.

DATA MANAGEMENT

⚠️
CAUTION

Incorrect assignment of patient name or 3D scan could result in confusion of patient scans.

Verify that the 3D scan that is to be imported or already loaded in a SICAT Suite application is associated with the correct name of the patient and the correct scan information.

⚠️
CAUTION

Deleting original data may result in data being lost.

Do not delete the original data following the import.

⚠️
CAUTION

The absence of a backup mechanism for the Patient Record Depots could result in patient data being irreversibly lost.

Make sure that a regular data backup is created of all Patient Record Depots.

⚠️
CAUTION

When deleting patient records, all 3D scans, planning projects and PDF files contained in these patient records will be deleted as well.

Only delete patient records if you are sure you will never need any contained 3D scans, planning projects and PDF files again.

⚠️
CAUTION

Deleted patient records, studies, 3D scans, and planning projects cannot be recovered.

Only delete patient records, studies, 3D scans, and planning projects if you are sure you will never need those data again.

⚠️
CAUTION

When deleting 3D scans, all dependent planning projects will be deleted as well.

Only delete 3D scans if you are sure you will never need any dependent planning project again.

QUALIFICATIONS OF OPERATING PERSONNEL

⚠️
CAUTION

The use of this software by unqualified personnel may result in an incorrect diagnosis and treatment.

The use of the software is restricted to qualified professionals.

SAFETY

⚠ **CAUTION**	**Security leaks in your information system environment could result in unauthorized access to your patient data and put the privacy or integrity of your patient data at risk.** 1. Make sure policies are established within your organization to prevent security threats to your information system environment. 2. Install and run an up-to-date virus scanner. 3. Make sure the pattern files of the virus scanner are updated on a regular basis.
⚠ **CAUTION**	**Unauthorized access to your workstation could result in risks to the privacy and integrity of your patient data.** Limit the access to your workstation to authorized individuals only.
⚠ **CAUTION**	**Problems in terms of cyber-security could result in unauthorized access to your patient data and risks in relation to the security or integrity of your patient data.** If you suspect problems in relation to the cyber-security of your SICAT application, contact support immediately.

SOFTWARE INSTALLATION

⚠ **CAUTION**	**Changes to the software may mean that the software will not start or will not function as intended.** 1. Do not make any changes to the software installation. 2. Do not delete or change any of the components in the software installation directory.
⚠ **CAUTION**	**If your system does not fulfill the system requirements, this may mean that the software will not start or will not function as intended.** Check whether your system meets the minimum software and hardware requirements before installing the software.
⚠ **CAUTION**	**Insufficient authorizations may mean that the software installation or software update fails.** Make sure you have sufficient privileges on your system if you install or update the software.

⚠️ **CAUTION**	**Changes to the operating system may mean that the SICAT applications will not start or will not function as intended.** 1. Prior to starting the SICAT applications, always check whether the operating system of your computer has installed updates or security updates since you last used the SICAT applications. 2. If the operating system of your computer has installed updates or security updates, perform the steps required for testing the SICAT applications as described in the instructions for use. 3. If the behavior of the SICAT applications differs from the behavior described in the instructions for use, stop using of the software and contact SICAT support immediately.

ORDERS

⚠️ **CAUTION**	**Incorrect data in an order may result in an incorrect order.** If you complete an order, ensure that you select and transfer the correct data for the order.

⚠️ **CAUTION**	**An incorrect order might lead to the wrong treatment.** 1. Check your order before sending it. 2. Confirm the correct planning of your order.

OPTICAL IMPRESSIONS

⚠️ **CAUTION**	**The use of other data as 3D X-ray scans as a lone source of information may result in an incorrect diagnosis and treatment.** 1. Use 3D X-ray scans as a preferred source of information for diagnosis and planning. 2. Use other data, such as optical impressions, only as an auxiliary source of information.

⚠️ **CAUTION**	**Inappropriate optical impression devices could result in incorrect diagnosis and treatment.** Only use optical impression data from devices cleared as medical devices.

⚠️ **CAUTION**	**Optical impression data that does not match patient and date of 3D X-ray data could result in incorrect diagnosis and treatment.** Make sure the patient and date of the imported optical impression data match the patient and date of the visualized 3D X-ray data.

⚠️ **CAUTION**	**Insufficient integrity or quality of optical impressions may result in an incorrect diagnosis and treatment.** Check the integrity and quality of the optical impressions imported.

⚠️ **CAUTION**	**Insufficient integrity and precision of optical impressions may result in an incorrect diagnosis and treatment.** Only use optical impressions of a sufficient quality and precision for the intended diagnosis and treatment.
⚠️ **CAUTION**	**Excessive artifacts, insufficient resolution or the lack of points for registration may mean that the registration process for optical impressions fails. Examples of excessive artifacts in 3D X-ray scans include movement artifacts and metal artifacts.** Only use optical impression data and 3D X-ray data that allow for an adequate registration.
⚠️ **CAUTION**	**The selection of markings in the registration process for optical impressions that do not correspond to one another may result in an incorrect diagnosis and treatment.** When you register optical impressions, carefully select corresponding markings in the 3D X-ray scans and optical impressions.
⚠️ **CAUTION**	**The incorrect registration of optical impressions for 3D X-ray scans may result in an incorrect diagnosis and treatment.** Check that the registered optical impressions are correctly aligned to the 3D X-ray scans.

NETWORK

⚠️ **CAUTION**	**Saving SICAT application data in an unreliable or incompatible network file system could result in data loss** Together with your network administrator, make that SICAT application data can be safely stored in the desired network file system.
⚠️ **CAUTION**	**The shared use of SICAT Suite and the SICAT applications contained therein with other devices within a computer network or a storage area network could result in previously unknown risks for patients, users and other persons.** Ensure that rules are compiled within your organization to determine, analyze and assess risks in relation to your network.
⚠️ **CAUTION**	**Changes to your network environment may result in new risks for your network environment. Examples include changes to your network configuration, the connection of additional devices or components to your network, the disconnection of devices or components from your network and the updating or upgrading of network devices or components.** Perform a network risk analysis after any changes to the network.

TOOTH SCHEME

⚠️

CAUTION

Incorrect tooth number allocation could result in incorrect diagnosis and treatment.

Check that the selected tooth numbers and the actual anatomical tooth numbers match.

DRILL DEPTH

⚠️

CAUTION

An incorrect drilling depth might lead to the wrong treatment.

Make sure that the planned drilling depth and the selected drill match.

PLANNING OBJECTS

⚠️

CAUTION

Using the 3D view to display measurements and planning objects may result in incorrect diagnosis and treatment.

Use the 3D view for guidance only and regard it as an additional source of information.

46 ACCURACY

The following table shows the accuracy values in all SICAT applications:

Measurement accuracy for distance measurements	< 100 μm
Measurement accuracy for angle measurements	< 1 degree
Representation accuracy	< 20 μm

GLOSSARY

3D X-ray scan

A 3D X-ray scan is a volumetric X-ray image.

ADA

American Dental Association

Application

SICAT applications are programs belonging to SICAT Suite.

CPR

Curved Planar Reformation, two-dimensional image reconstruction from 3D X-ray scans that is used for the simplified representation of complex structures.

Crosshairs

Crosshairs are lines of intersection with other slice views.

Drill channel

Path for drilling planned on the basis of the EndoLine that can be visualized and edited in the software application.

EndoLine

An EndoLine is a multi-functional measuring line, which serves to mark the root canal to be treated and to locate the root apex.

FDI

Fédération Dentaire Internationale, World Dental Federation

Frames

In the 3D view, frames show the positions of the 2D slice views.

Hub

An external memory that acts as a server and enables data exchange between different devices in a local network.

Intraoral scan

An intraoral scan is a 2D X-ray scan of individual teeth that is recorded using a dental film behind the tooth and an X-ray source outside of the mouth and features a high level of detail.

Message window

The message window shows messages on completed procedures in the bottom right corner of the screen.

Navigation bar

The navigation bar in the upper part of SICAT Suite contains the most important icons in SICAT Suite. If a patient record is active, the navigation bar allows switching between patient records and different applications.

Optical impressions

An optical impression is the result of a 3D surface scan of teeth, impression material or plaster casts.

Patient record

A patient record contains all 3D scans and planning projects that belong to a certain patient. SICAT Suite saves patient records in patient databases.

Patient record depots

A Patient Record Depot contains patient records. SICAT Suite up to version 2.0.20 saves Patient Record Depots in folders on a local file system or network file system.

Planning project

A planning project is comprised of planning data from a SICAT application based on a 3D X-ray scan.

SICAT Portal

SICAT Portal is a website, which you can use to order appliances from SICAT, amongst other things.

SIXD

File format to exchange optical impressions.

SMPTE

Society of Motion Picture and Television Engineers

Spotlight

Circular highlighting of an image area for checking the overlay of intraoral scan and 3D projection during the registration of intraoral scans.

SSI

File format to exchange optical impressions.

STL

Surface Tessellation Language, standard file format to exchange mesh data, which may contain optical impressions, for example.

Study

A study consists of a 3D X-ray scan and the corresponding planning project.

INDEX

EXPLANATIONS OF LABELING

SYMBOLS

⚠ Caution! Observe the accompanying documents.

📖 Observe the electronic instructions for use on www.sicat.com/suitemanuals.

BUILD Build number

UDI Unique Device Identifier

🏭 Manufacturer

LOT Lot number

MD Medical device

CE 0197 CE marking including number of the notified body
TÜV Rheinland LGA Products GmbH, Tillystraße 2, 90431 Nürnberg, Germany

LOT NUMBER OF THE SOFTWARE

The lot number indicated in the software. Information on this can be found in the section *About [▶Page 261]*.

V2.0.40

DATE OF MANUFACTURE

The software's date of manufacture can be inferred from the build number displayed in the software. Information on this can be found in the section *About [▶Page 261]*.

Example of a build number:

2.0.18001.38120

[1] 18 [2] 001

1 Year of manufacture of the software (18 means 2018)

2 Day of manufacture of the software (001 means 1 January)

CONTACT

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