SICAT**IMPLANT**

SICAT IMPLANT *VERSION 2.0.40*

Instructions for use | English | Standalone

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1 INTENDED PURPOSE AND INDICATIONS FOR USE

SICAT Implant is a software application for the visualization of imaging information of the oral-maxillo-facial region. The imaging data originates from medical scanners such as CT or CBCT scanners. SICAT Implant is intended for use as planning and simulation software to aid qualified dental professionals in the placement of dental implants and the planning of surgical treatments. The dental professionals' planning data may be exported from SICAT Implant and used as input data for CAD (Computer-Aided Design) or Rapid Prototyping Systems.

SICAT Implant supports the planning of dental implants. Therefore, the indications/medical conditions to be treated/diagnosed are the same as for dental implants:

- single missing tooth

- partially edentulous jaw

- fully edentulous jaw

CONTRAINDICATIONS

There are no contraindications.

However, SICAT Implant is used within an entire 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 Implant is used within an entire 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 Implant, these are dentists.

2 CLINICAL BENEFIT

The use of SICAT Implant 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 different dental implant dimensions, positions, and orientations can be planned and exported for treatment.

Using SICAT Implant in accordance with the intended purpose assures that the patient receives a treatment 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

- 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

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 241]*.

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 293]*

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 Implant 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 290]*.

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 74]*.

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 63]*.

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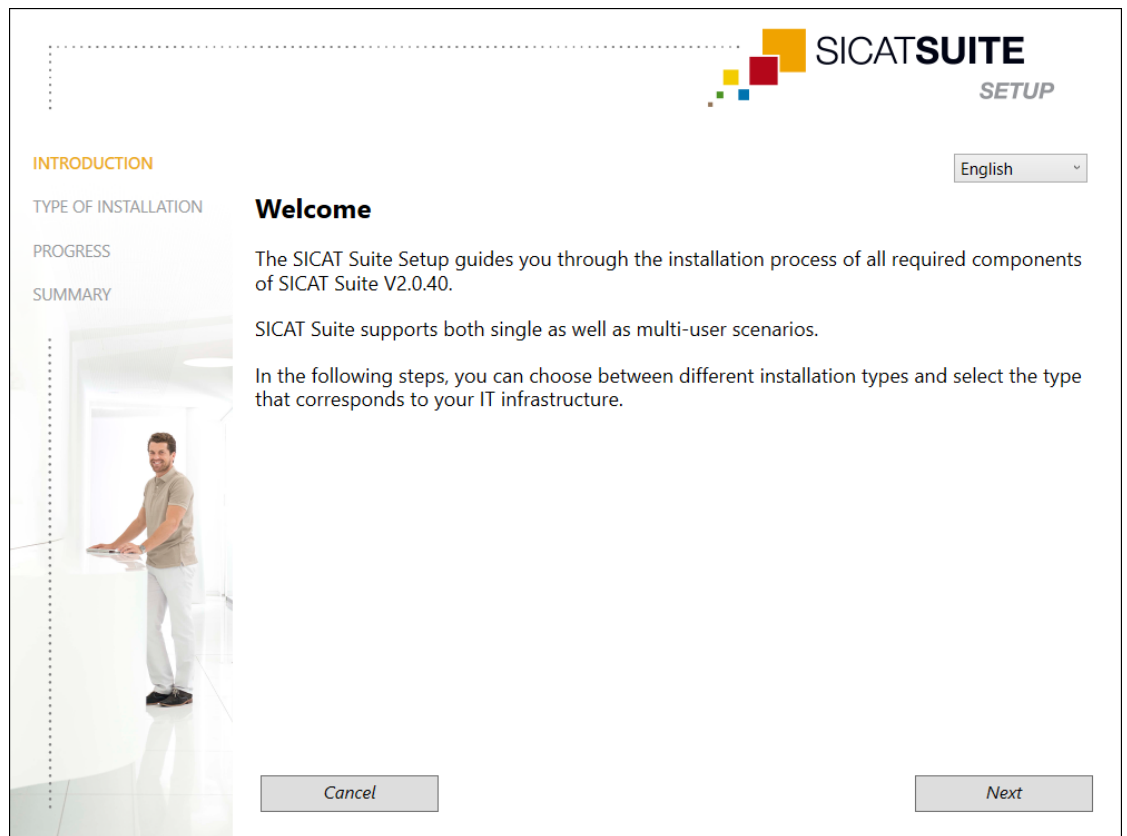
5. Select the desired language for the SICAT Suite set-up in the top right-hand corner of the **INTRO-DUCTION** window and click on **Next**.

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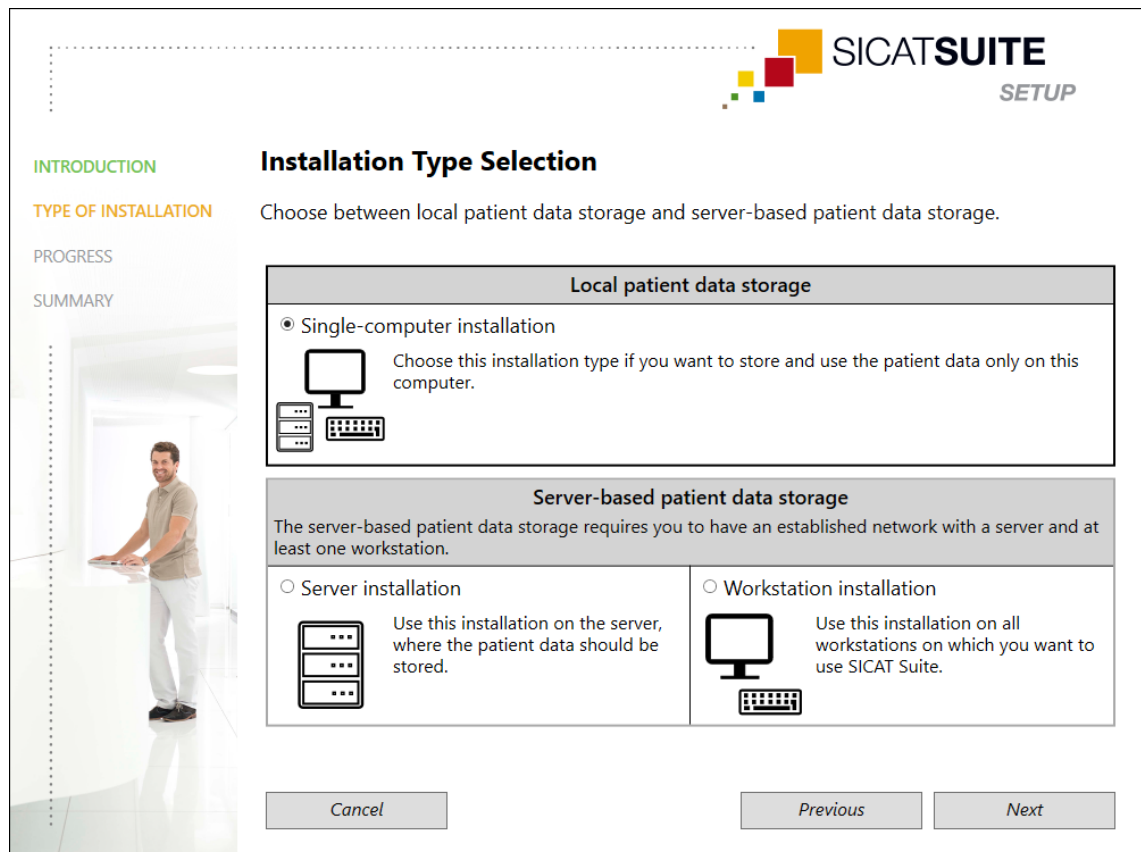
1. In the **TYPE OF INSTALLATION** window, select the check box **Single-computer installation** in the section **Local patient data storage** and click on **Next**.

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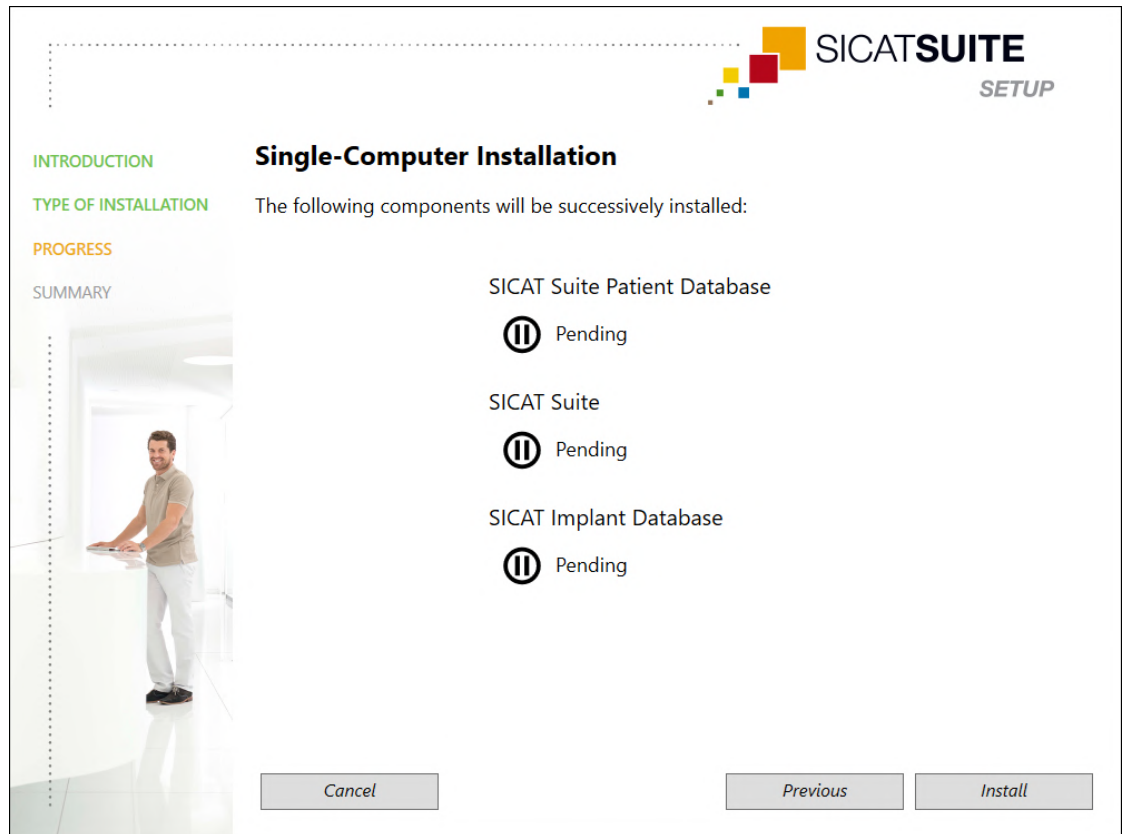
▶ The software components that need to be installed will be displayed.

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 [▶Page 40]

▶ 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:
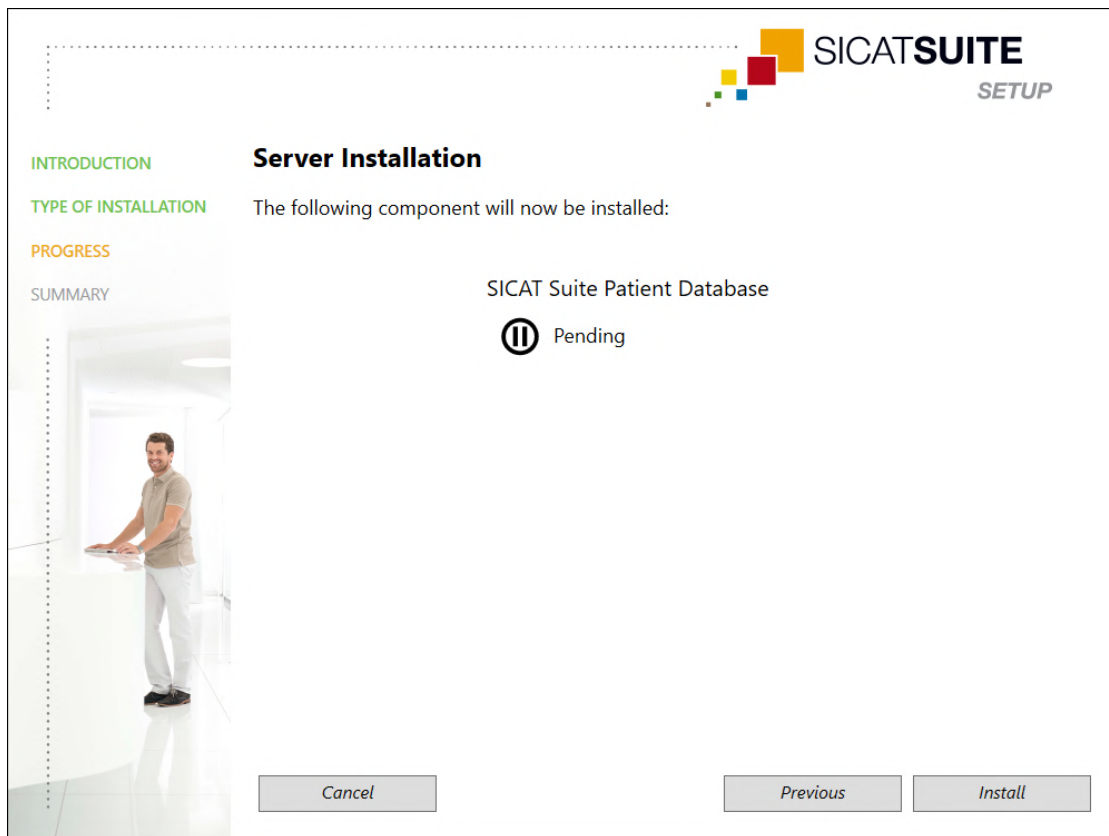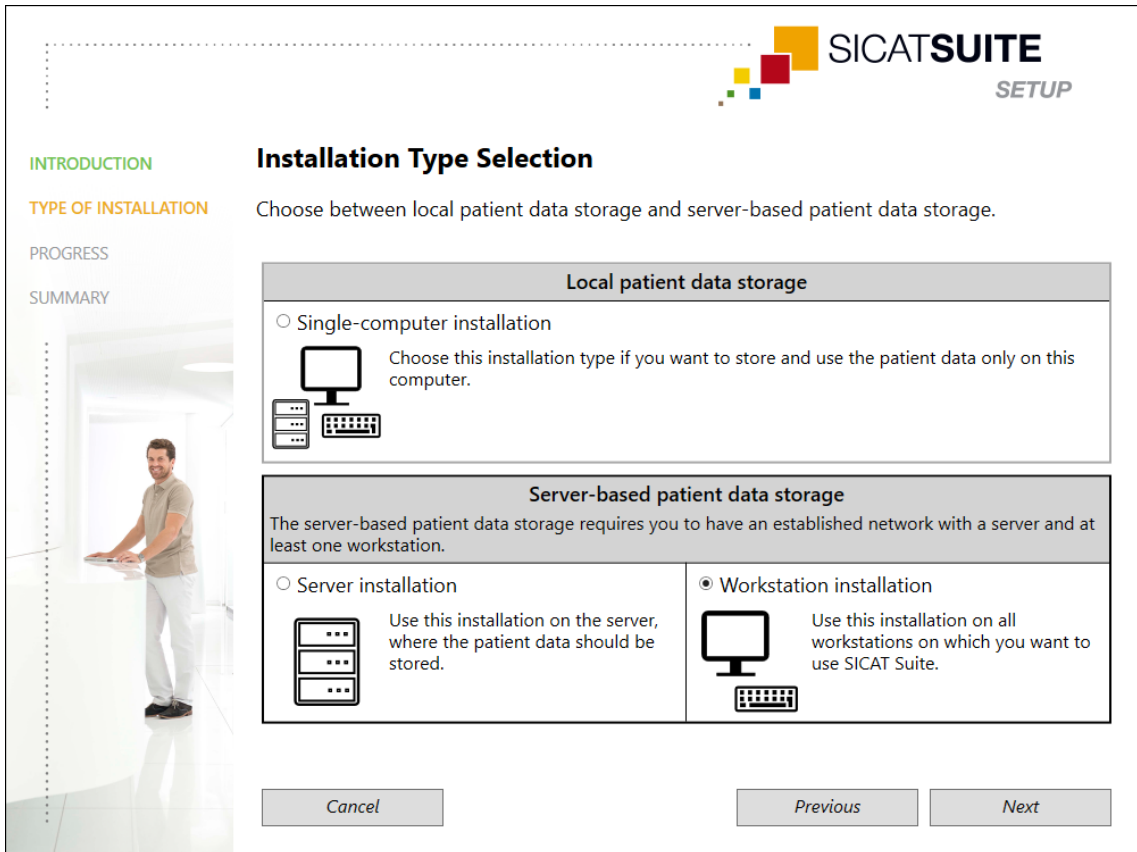
► The software component that needs to be installed will be displayed.

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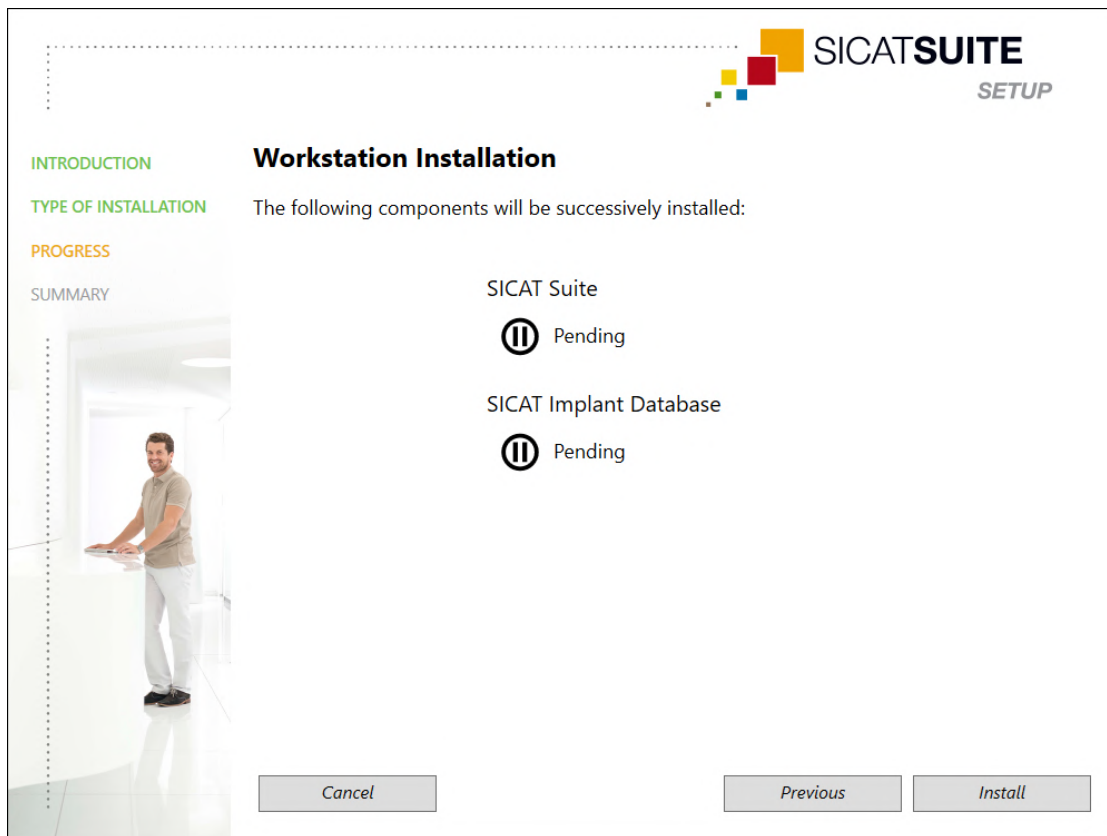
▶ The software components that need to be installed will be displayed.

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 [▶Page 40]

▶ 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:
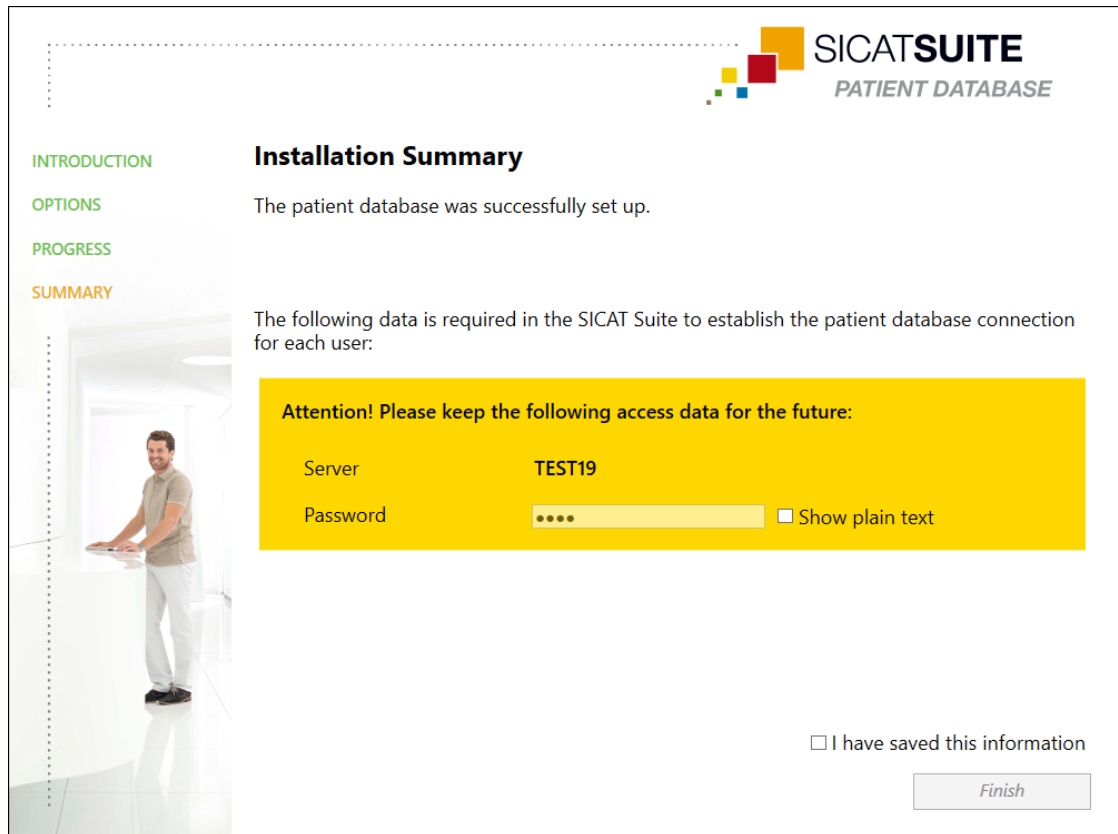
► Your credentials for the SICAT Suite Patient Database are shown in the lower part of the window.

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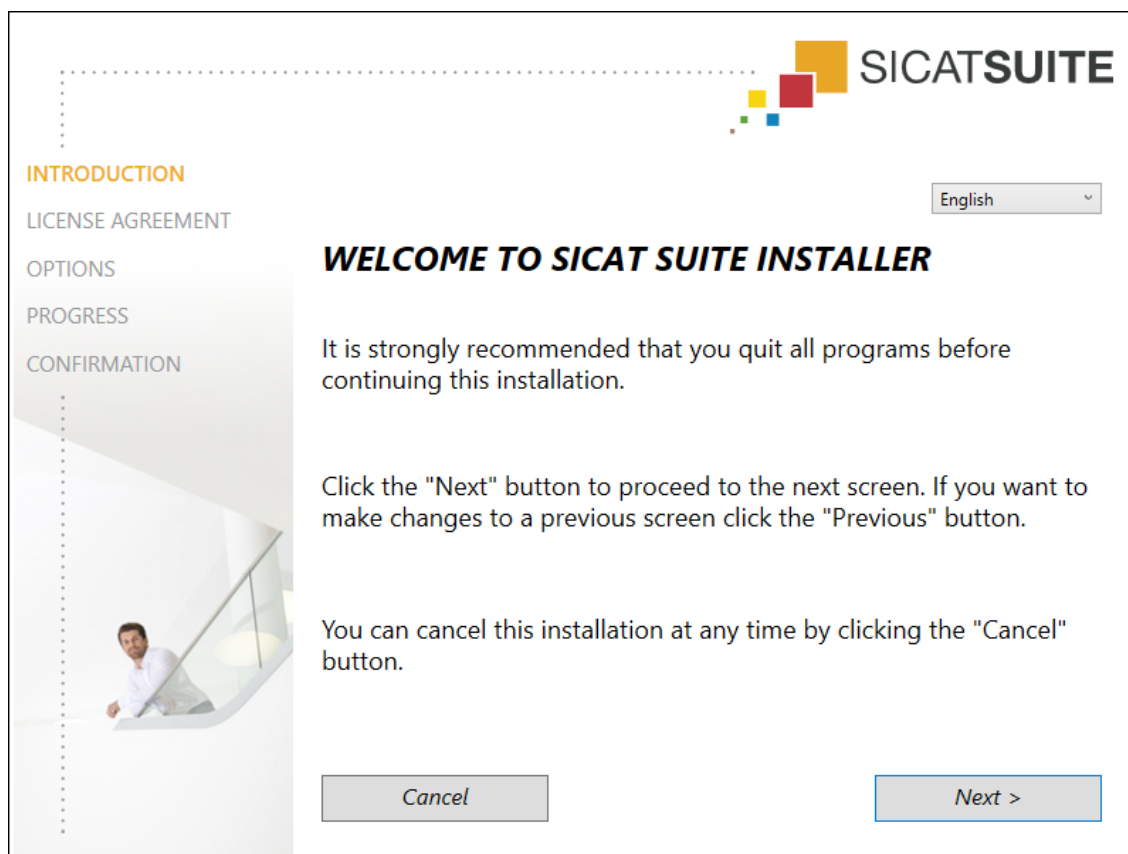
1. Select the desired language for the SICAT Suite installer in the top right-hand corner of the **INTRO-DUCTION** window and click on **Next**.

▶ The **LICENSE AGREEMENT** window opens:

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

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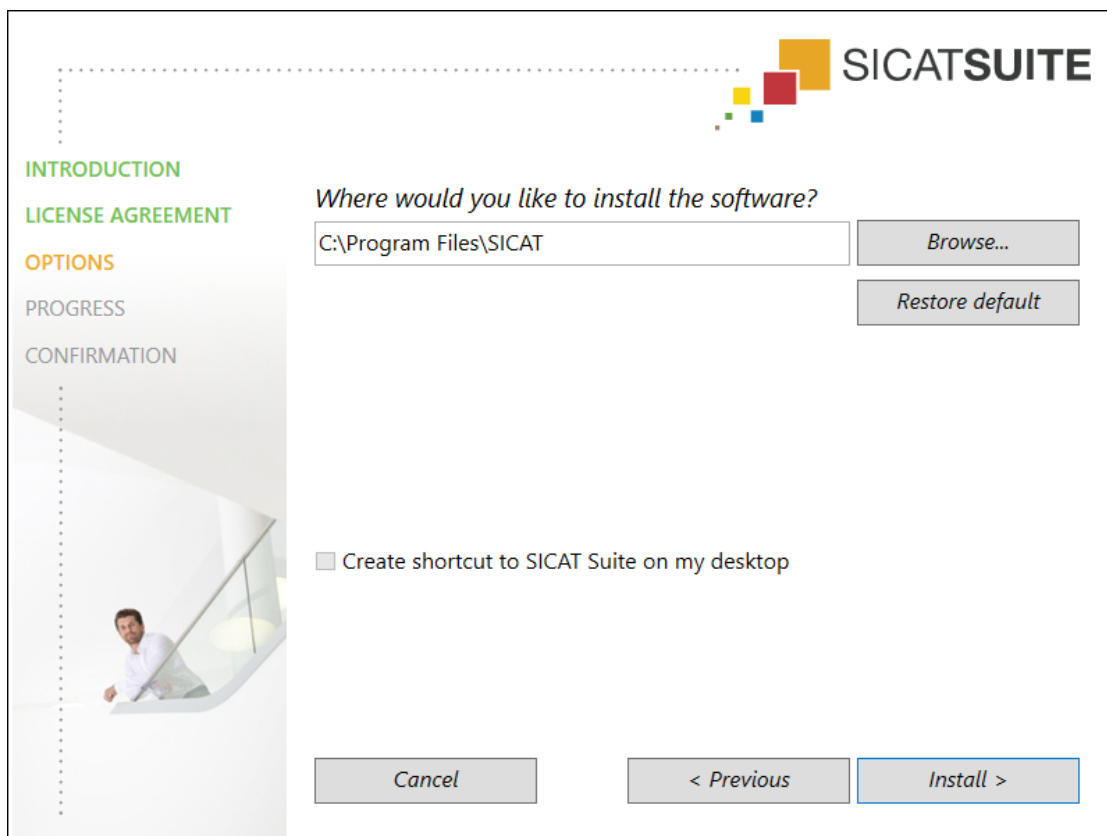
3. To change the folder in which the SICAT Suite installer will install SICAT Suite on the hard disk, click on the **Browse** button.

   ▶ 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.

10.5 INSTALLING SICAT IMPLANT DATABASE

> ⚠️
> **CAUTION**
>
> **Any changes to the SICAT Implant Database could mean that SICAT Implant does not work as intended.**
>
> 1. Do not make any changes to the SICAT Implant Database installation.
> 2. Do not delete or change any of the components in the SICAT Implant Database installation directory.

> ⚠️
> **CAUTION**
>
> **Insufficient authorizations could cause the SICAT Implant Database installation or update to fail.**
>
> Make sure you have the proper authorizations on your system when installing or updating the SICAT Implant Database.

The installation of the SICAT Implant Database starts automatically after the installation of SICAT Suite has been completed.

☑ SICAT Suite has already been installed.

☑ The SICAT Implant Database has not been installed.

☑ The SICAT Implant Database installer was started by the SICAT Suite set-up.
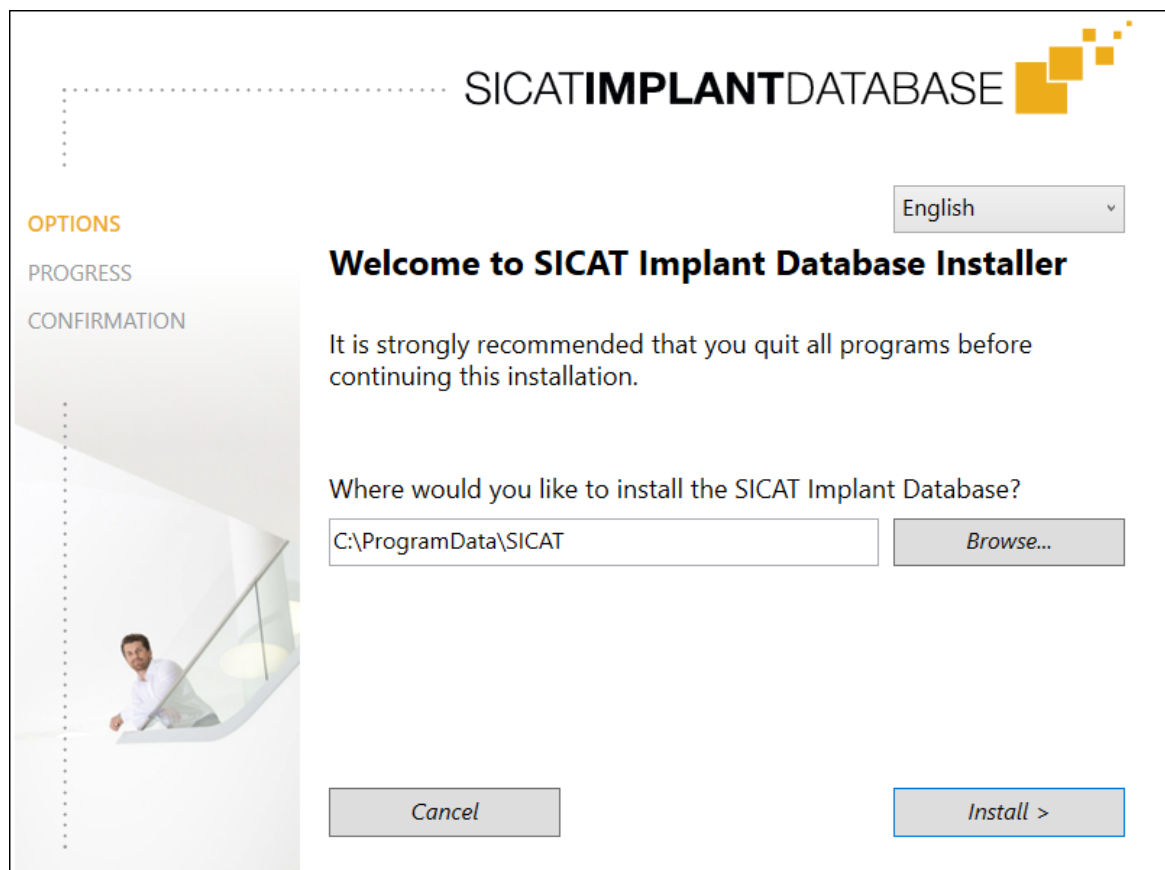
1. Select the desired language for the SICAT Implant Database installer in the top right-hand corner of the **OPTIONS** window.

2. To change the folder in which the SICAT Implant Database installer will install the SICAT Implant Database on the hard disk, click on the **Browse** button.

   ► The **Select folder** window opens.

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

    ▶ The SICAT Implant Database installer adds the path to the selected folder in the input field.

4. Click on the **Install** button.

    ▶ SICAT Implant Database is installed.

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

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

    ▶ The SICAT Implant Database 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 Implant operates without any errors. Perform the corresponding test steps. If you notice deviations during a test step, prevent further use of SICAT Implant 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 77]*.

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 86]*.

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

SETTINGS

1. Make sure that the FDI tooth scheme is active. Information on this can be found in the section *Using general settings [▶Page 267]*.

2. Make sure that the "PR" viewing direction is active. Information on this can be found in the section *Changing visualization settings [▶Page 274]*.
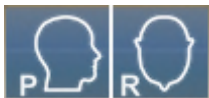
3. Make sure that the safety margins around implants are set as indicated below. Information on this can be found in the section *Defining safety margins [▶Page 279]*.

    – Minimum lateral distance: 1.5 mm

    – Minimum apical distance: 2.0 mm

4. Make sure that the pilot drill channels of implants are set as indicated below. Information on this can be found in the section *Defining channels [▶Page 280]*.

    – Pilot drill channel diameter: 2.0 mm

    – Length: 15.0 mm

5. Make sure that the crosshairs and frames are shown. Information on this can be found in the section *Moving, hiding and showing crosshairs and frames [▶Page 141]*.

PANORAMA WORKSPACE

1. Switch to the **Panorama** workspace. Information on this can be found in the section *Switching workspaces [▶Page 129]*.

2. Reset the layout of the workspace. Information on this can be found in the section *Adjusting and resetting the layout of workspaces [▶Page 130]*.

3. Reset the views. Information on this can be found in the section *Resetting views [▶Page 148]*.

4. Make sure that the display mode **Use default inspection window size** is activated in the **Panorama** view. Information on this can be found in the section *Moving, hiding, showing and maximizing the inspection window [▶Page 142]*.

5. Ensure that the values for **Brightness** and **Contrast** in the **Panorama** view correspond to the default value of 50 %. Information on this can be found in the section *Adjusting and resetting the brightness and contrast of the 2D views [▶Page 137]*.

6. In the **Object browser**, expand the **Implants** group.

7. Focus on implant 36 by double-clicking on the corresponding entry in the **Object browser**.

8. Compare the **Panorama** view with the following screenshot:
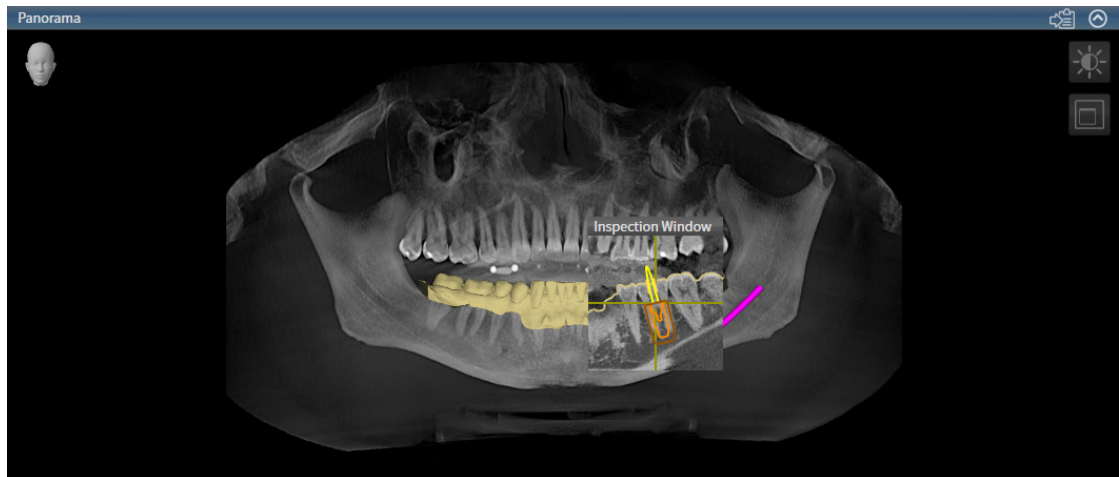
IMPLANT-ALIGNED WORKSPACE

1. Switch to the **Implant-Aligned** workspace. Information on this can be found in the section *Switching workspaces [▶Page 129]*.

2. Reset the layout of the workspace. Information on this can be found in the section *Adjusting and resetting the layout of workspaces [▶Page 130]*.

3. Reset the views. Information on this can be found in the section *Resetting views [▶Page 148]*.

4. Ensure that the values for **Brightness** and **Contrast** in the **Tangential**, **Cross-Sectional** and **Axial** views each correspond to the default value of 50%. Information on this can be found in the section *Adjusting and resetting the brightness and contrast of the 2D views [▶Page 137]*.

5. Activate implant 36 by clicking on the implant in the **Object browser** or in the views.

6. Compare the **Tangential**, **Cross-Sectional** and **Axial** views with the following screenshot. In particular, check the measured length value, the measured angle value and the position of the following objects relative to the imaging data: Distance measurement, angle measurement, optical impression, mandibular nerve, implant, safety margin, pilot drill channel and sleeve.

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.

ℹ️	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 UPDATING OR REPAIRING SICAT IMPLANT DATABASE

UPDATING SICAT IMPLANT DATABASE

⚠️ **CAUTION**	**Insufficient authorizations could cause the SICAT Implant Database installation or update to fail.** Make sure you have the proper authorizations on your system when installing or updating the SICAT Implant Database.

☑ SICAT Suite has already been installed.

☑ A previous version of the SICAT Implant Database is already installed.

☑ SICAT Suite has not been started.

1. Download the current version of the SICAT Implant Database for SICAT Implant V2.0 or higher from the SICAT website www.sicat.com. You can find the SICAT Implant Database in the menu by clicking on **Services** > **Downloads**.

2. Start the downloaded **SICATImplantDatabaseInstaller.exe** file. The file name contains the SICAT Implant Database version.

   ▶ The **OPTIONS** window opens.

3. Click on the **Upgrade** button.

   ▶ The SICAT Implant Database will be updated.

   ▶ After the update has been completed, the **CONFIRMATION** window opens.

4. Click on the **Finish** button.

   ▶ The SICAT Implant Database installer closes.

REPAIRING THE SICAT IMPLANT DATABASE

☑ SICAT Suite has already been installed.

☑ The SICAT Implant Database 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 Implant Database** item.

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

   ▶ The SICAT Implant Database installer starts.

   ▶ The **OPTIONS** window opens.

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

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

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

   ▶ The SICAT Implant Database installer closes.

14 SPECIAL FEATURES IN THIS VERSION

Depending on whether you use SICAT Implant 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 74]*. Information on managing patient records can be found in the section *Patient records [▶Page 96]*.

i	For information on saving patient records in the SICAT Suite Patient Database, please refer to the separately available instructions.

i	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 266]*.

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 Implant studies and save these changes:

- A SICAT Implant full version license must be activated.

- A connection to a patient database must be active.

- In a network environment with server-based patient data management, the patient record must not be edited by another user.

Otherwise, you cannot make or save any changes to SICAT Implant studies. If you have activated a SICAT Implant Viewer license, you can view 3D X-ray scans and SICAT Implant 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	Yes	Yes
Managing patient records	Yes	Yes	Yes
Data import	Yes	Yes	Yes
Help	Yes	Yes	Yes

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

FUNCTION	SICAT IMPLANT FULL VERSION LICENSE	SICAT IMPLANT VIEWER LICENSE	NO SICAT IMPLANT LICENSE
SICAT Implant settings	Yes	Yes	No
Making changes to SICAT Implant 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 Implant studies even if the application license is activated. An ongoing ordering process is one example of a cause of 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 59].

Further information is available in the section *Opening read-only data* [▶Page 285].

15 SUPPORTED SURGICAL GUIDES AND SLEEVE SYSTEMS

SICAT Implant supports the following surgical guides:

SURGICAL GUIDE	DESCRIPTION	FURTHER INFORMATION
SICAT **CLASSIC**GUIDE	Surgical guide based on a radiographic template that is worn by the patient when the 3D X-ray scan is taken. Fix the radiographic template to the stone model and send it to SICAT. The surgical guide will be designed and manufactured by SICAT.	For a detailed description, indications and contraindications, comprehensive workflow: https://www.sicat.com/ (section: "Implantology - Surgical guides")
SICAT **OPTI**GUIDE	Surgical guide based on an optical impression which you have registered in SICAT Implant with the 3D X-ray data. The surgical guide will be designed and manufactured by SICAT.	
SICAT **OPTI**GUIDE with stone model scan	Surgical guide based on an optical impression which is created from the stone model by SICAT. Send the stone model to SICAT for this purpose. The surgical guide will be designed and manufactured by SICAT.	
SICAT **DIGITAL**GUIDE	Digital surgical guide model based on an optical impression which you have registered in SICAT Implant with the 3D X-ray data. The surgical guide model will be designed by SICAT. The surgical guide will be manufactured in your practice or at a partner laboratory.	
SICAT **DIGITAL**GUIDE with stone model scan	Digital surgical guide model based on an optical impression which is created from the stone model by SICAT. Send the stone model to SICAT for this purpose. The surgical guide model will be designed by SICAT. The surgical guide will be manufactured in your practice or at a partner laboratory.	
CEREC Guide 2 and CEREC Guide 3	Surgical guide based on an optical impression which you have registered in SICAT Implant with the 3D X-ray data. The surgical guide will be designed and manufactured in your practice.	For a detailed description, indications and contraindications, comprehensive workflow: https://www.dentsplysirona.com (section "CEREC implantology")

SICAT Implant supports the planning of the following sleeve systems:

SLEEVE SYSTEM	DESCRIPTION	FURTHER INFORMATION
Fully guided surgical systems of various manufacturers	Allow for fully guided surgery, from initial drilling to implant placement.	SICAT Implant ensures that the respective master sleeve can only be planned according to the specifications of the corresponding implant manufacturer ("according to the manufacturer's protocol"). This concerns both the compatibility with the corresponding implants and the permissible discrete sleeve positions for the respective implant-sleeve combinations. Fully guided surgical systems currently supported by SICAT surgical guides: https://www.sicat.com/ (section „Downloads - Implantology") Fully guided surgical systems currently supported by CEREC Guide: https://www.dentsplysirona.com (section "CEREC Implantology") Further information about a manufacturer's specific fully guided surgical system: Manufacturer's website
SICAT Sleeve-in-Sleeve	Sleeve system consisting of an outer sleeve with an outer diameter of 5 mm and an inner diameter of 3.5 mm and a selection of inner sleeves with different inner diameters ranging from 1.6 mm to 2.9 mm. Enables guided drilling of one pilot hole and at least one extension hole into the jaw.	Each inner sleeve can be inserted into the outer sleeve. The outer sleeve can be planned to have any desired height. When ordering, you can select one or two inner sleeves.
SICAT Pilot Sleeve	The SICAT Pilot Sleeves have an outer diameter of 3 mm and various inner diameters ranging from 1.1 mm to 2.3 mm. Enables guided drilling of a pilot hole into the jaw.	The SICAT Pilot Sleeves can be planned to have any desired height.
CEREC Guide Drill Keys	Sleeve system consisting of three virtual sleeves with different diameters for planning, which correspond to the respective CEREC Guide Drill Keys minus the 1-mm high holder. CEREC Guide Drill Keys enable guided drilling of pilot and extension holes into the jaw.	The sleeves can be planned to have any desired height. Further information, in particular on the supported implant systems/surgical kits and on the planning parameters to be set (sleeve models and sleeve positions): https://www.dentsplysirona.com (section "CEREC Implantology")

The following table provides an overview of which sleeve systems are generally supported by which surgical guide:

SLEEVE SYSTEM	SICAT CLASSICGUIDE SICAT OPTIGUIDE SICAT DIGITALGUIDE	CEREC GUIDE
Fully guided surgical systems by various manufacturers	Yes	Yes (CEREC Guide 3, limited to certain manufacturers)
SICAT Sleeve-in-Sleeve	Yes	No
SICAT Pilot Sleeve	Yes	No
CEREC Guide Drill Keys	Yes	Yes (CEREC Guide 2)

16 THE STANDARD WORKFLOW OF SICAT IMPLANT

⚠ **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.
⚠ **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.
⚠ **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.

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

For information on how to install SICAT Suite and the SICAT Implant Database, please refer to *Installing SICAT Suite [*▶*Page 37]* and *Installing SICAT Implant Database [*▶*Page 40]*.

ACTIVATING FULL VERSION

1. If you have purchased a license for SICAT Implant, activate the license to unlock the full version. Information on this can be found in the section *Licenses [*▶*Page 63]*.

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 74]*.

> **ℹ** If you have not purchased a license for SICAT Implant, open a 3D X-ray scan in Viewer mode. Information on this is available in the section *Opening read-only data [*▶*Page 285]*.

START

Information on how to start SICAT Suite can be found in the section *Starting SICAT Suite [*▶*Page 56]*.

SETTINGS

Change the desired settings in the **Settings** area. Information on this can be found in the section *Settings [*▶*Page 266]*.

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 86]*.

2. To search for patient records and manage imported data, follow the instructions provided under *Patient records [*▶*Page 96]*.

3. To work with data from patient records, open a patient record in SICAT Implant. Information on this can be found in the section *Opening 3D X-ray scans or planning projects from the patient record summary [*▶*Page 103]*.

HOW TO PROCEED IN SICAT IMPLANT

OPEN 3D X-RAY SCAN

OPTIONALLY:
ADJUST VOLUME ORIENTATION AND PANORAMIC REGION

DEPENDING ON THE SURGICAL GUIDE:
IMPORT AND REGISTER OPTICAL IMPRESSIONS WITH
PROSTHETIC PROPOSAL, IF ANY

CASE OF MANDIBULAR POSTERIOR TEETH:
MARK MANDIBULAR NERVE

PLAN IMPLANTS AND SLEEVES

ORDER SICAT SURGICAL GUIDE

EXPORT FOR CEREC GUIDE

OPTIONALLY:
GENERATE PLANNING REPORT
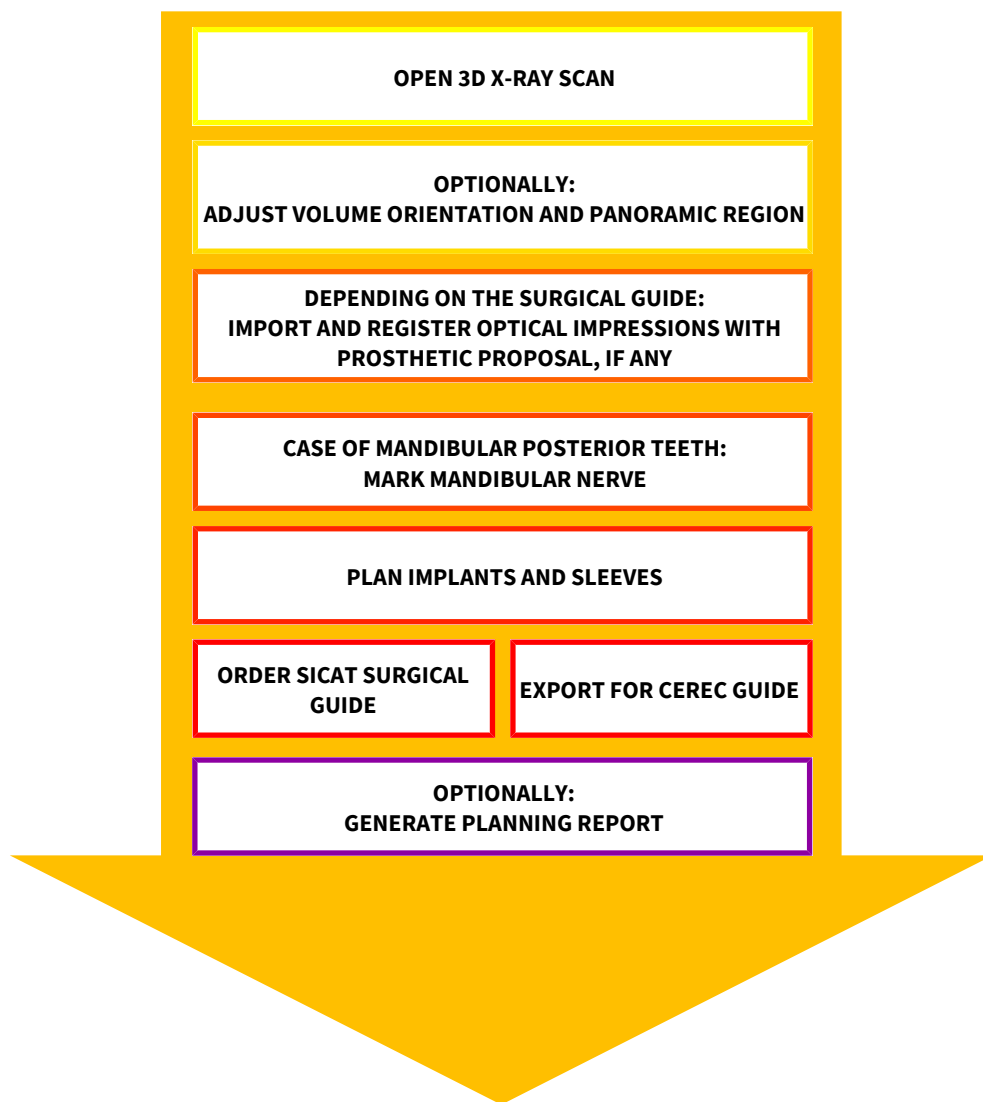
1. If necessary, adjust the volume orientation and panoramic region. Information on this can be found in the section *Adjusting volume orientation and panoramic region [▶Page 174]*.

2. If necessary for the desired surgical guide (see *Supported surgical guides and sleeve systems [▶Page 49]*) or if desired for implant planning, import and register the optical impressions with the 3D X-ray data including the prosthetic proposal, if available. Information on this can be found in the section *Optical impressions [▶Page 190]*.

3. If you are dealing with the case of mandibular posterior teeth, mark the corresponding mandibular nerve. Information on this can be found in the section *Marking and adjusting mandibular nerves [▶Page 205]*.

4. Plan the implants and, if necessary, abutments and sleeves. Select the desired surgical guide and the desired sleeve system. For further information see *Planning implants [▶Page 210]*, *Planning abutments [▶Page 225]* and *Planning sleeves [▶Page 232]*.

5. Order a SICAT surgical guide or export your planning to manufacture a CEREC Guide yourself. For further information about this see *Ordering process [▶Page 241]* and *Exporting for CEREC Guide [▶Page 253]*.

6. If you wish, you can create a planning report for your own documentation or for the surgery. Information on this can be found in the section *Creating planning reports [▶Page 259]*.

> **ℹ** If you wish, you can export data, for example to obtain a second opinion. For further information about this see *Managing plans [▶Page 158]* and *Data export [▶Page 263]*.

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 287]*.

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 62]*.

Further support is available in the **Support** area. Information on this can be found in the section *Support [▶Page 281]*.

17 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 59]*.

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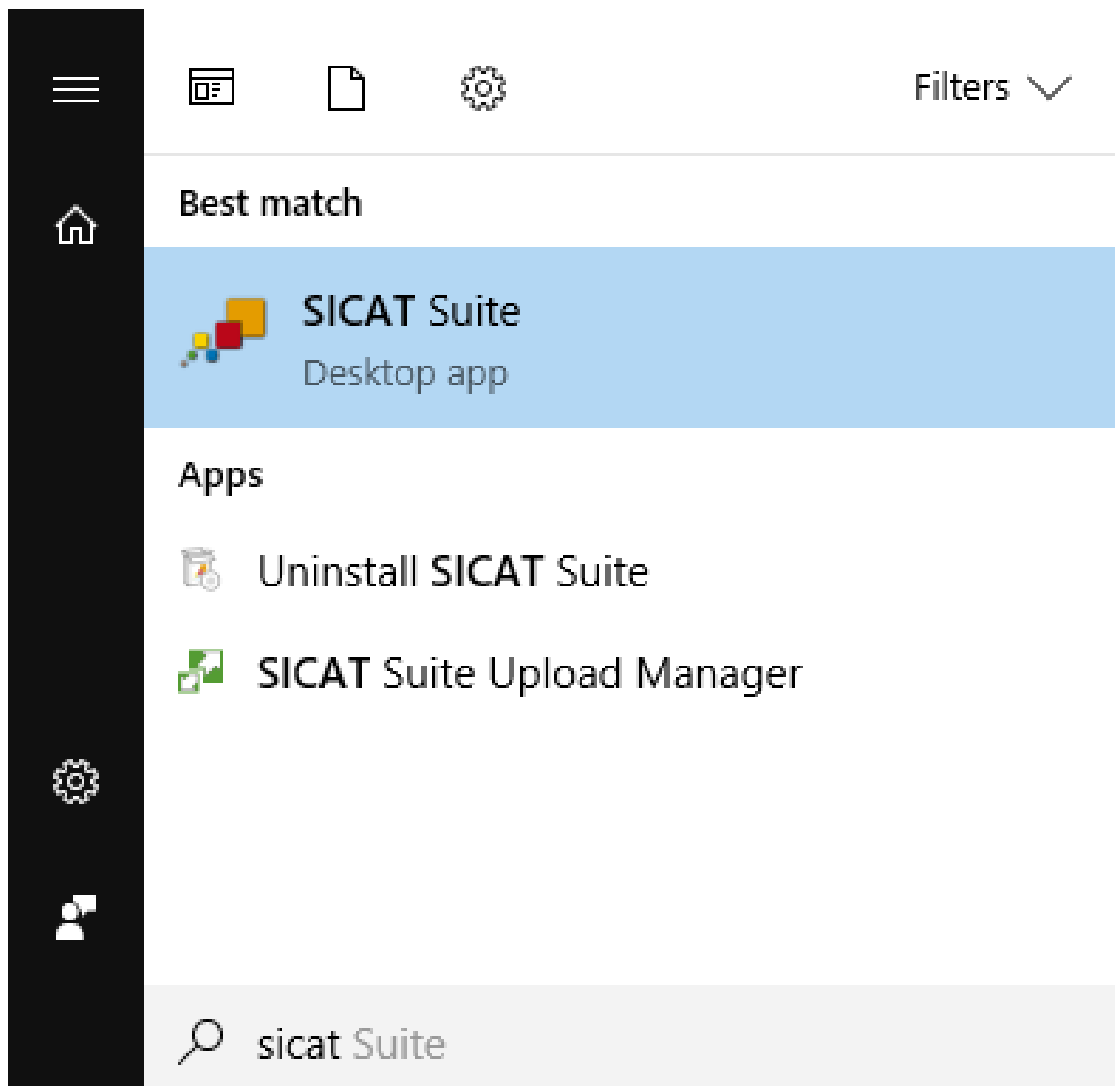
18 THE USER INTERFACE OF SICAT SUITE

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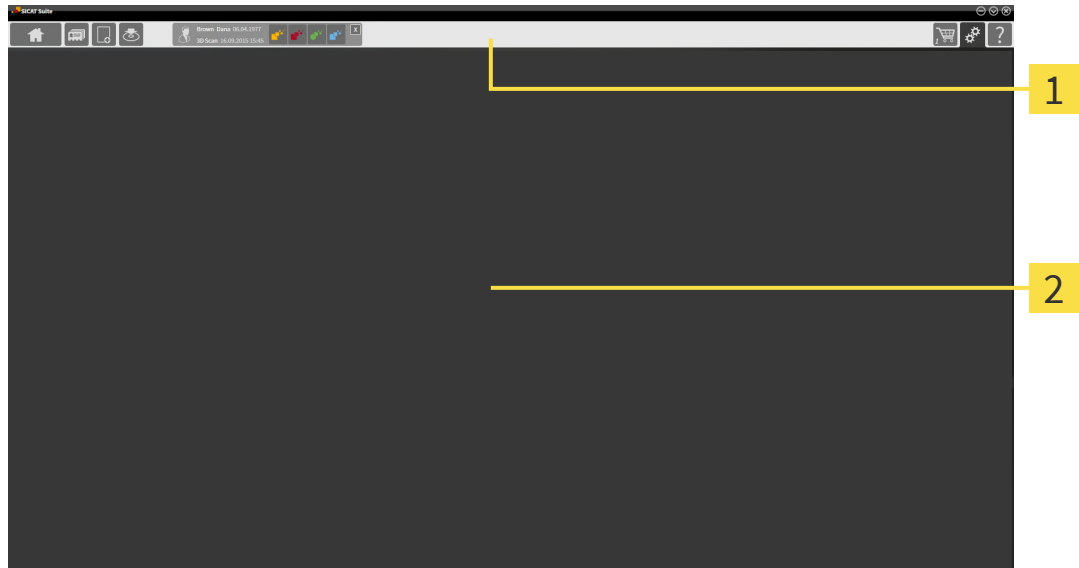
| 1 | **Navigation bar** |

| 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 59]*.

- **Patient records** - Information on this can be found in the section *Patient records [▶Page 96]*.

- **Add new data** - Information on this can be found in the section *Data import [▶Page 86]*.

- **Export data** - Information on this can be found in the section *Data export [▶Page 263]*.

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 100]*.

- **Applications** - Information on this can be found in the section *Switching between SICAT applications [▶Page 61]*.

The section on the right side contains the following tabs:

- **Shopping Cart** - Information on this can be found in the section *Ordering process [▶Page 241]*.

- **Settings** - Information on this can be found in the section *Settings [▶Page 266]*.

- **Support** - Information on this can be found in the section *Support [▶Page 281]*.

18.1 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:
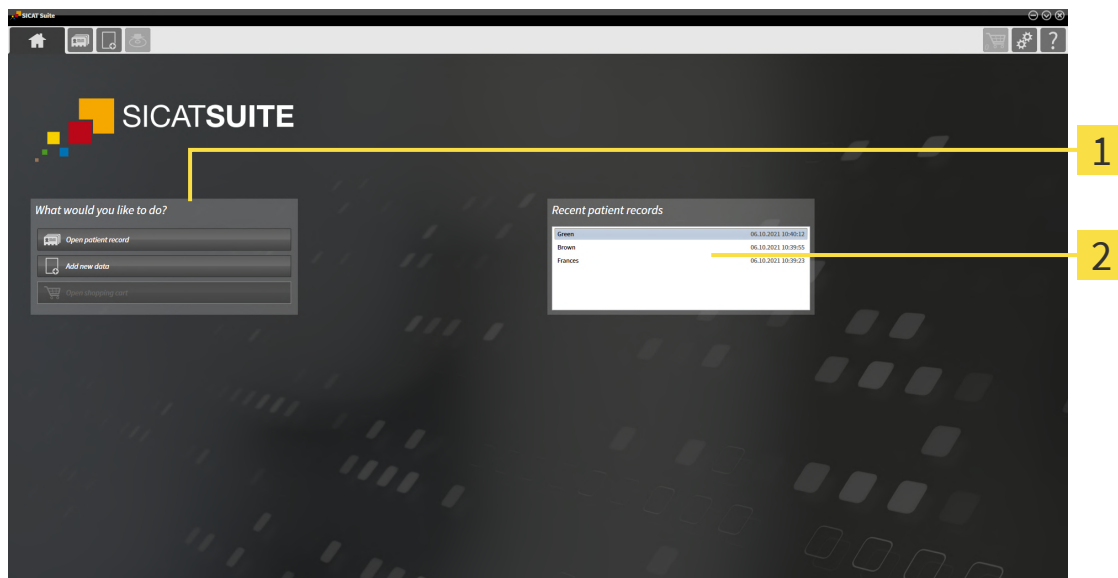
1   **What would you like to do** area

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 74]*.

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 96]*.

- **Add new data** - Information on this can be found in the section *Data import [▶Page 86]*.

- **Shopping Cart** - Information on this can be found in the section *Ordering process [▶Page 241]*.

- 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 [▷ 263]

19 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.

20 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:
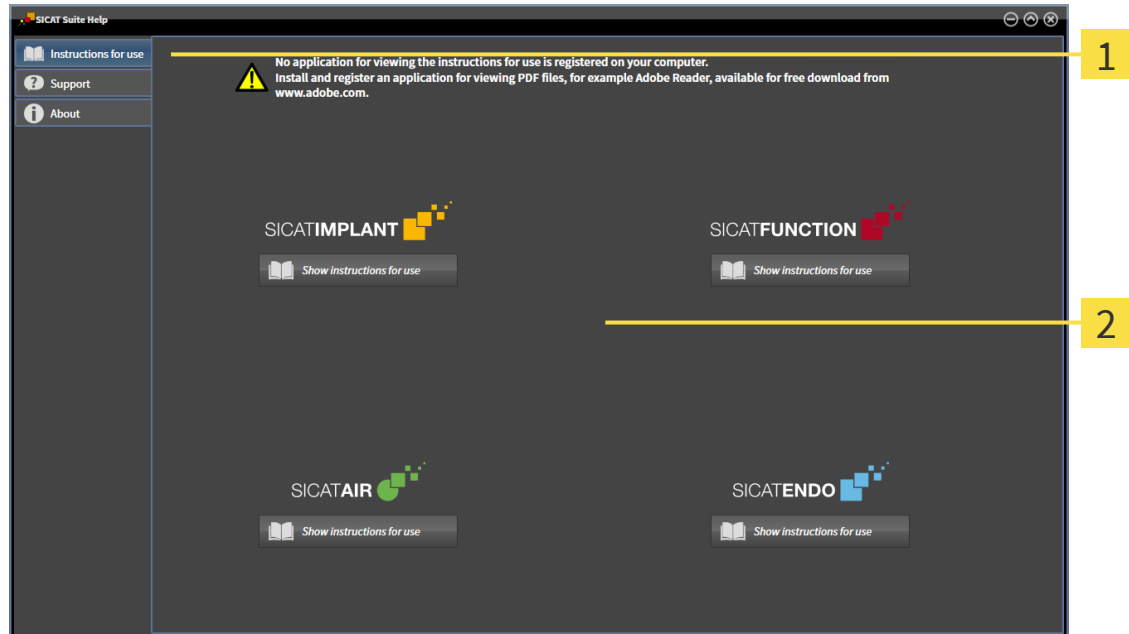
1 **Instructions for use** tab

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.

21 LICENSES

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

> 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 Implant license.

> 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.

> 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.

> 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 66]*.

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 67]*.

- 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 69]*.

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 71]*.

For information on how to activate network licenses, see *Activating network licenses [*▶*Page 72]*.

21.1 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:
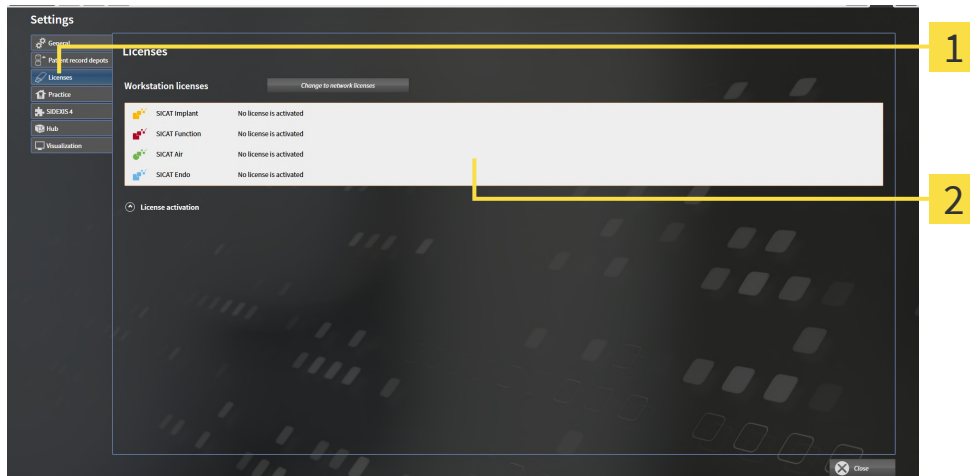
1 **Licenses** tab

2 **Licenses** window

Continue with one of the following actions:

- ■ *Activating workstation licenses using an active Internet connection [*▶*Page 67]*

- ■ *Activating workstation licenses manually or without an active Internet connection [*▶*Page 69]*

- ■ *Activating network licenses [*▶*Page 72]*

- ■ *Returning workstation licenses to the license pool [*▶*Page 71]*

21.2 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 66]*.

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

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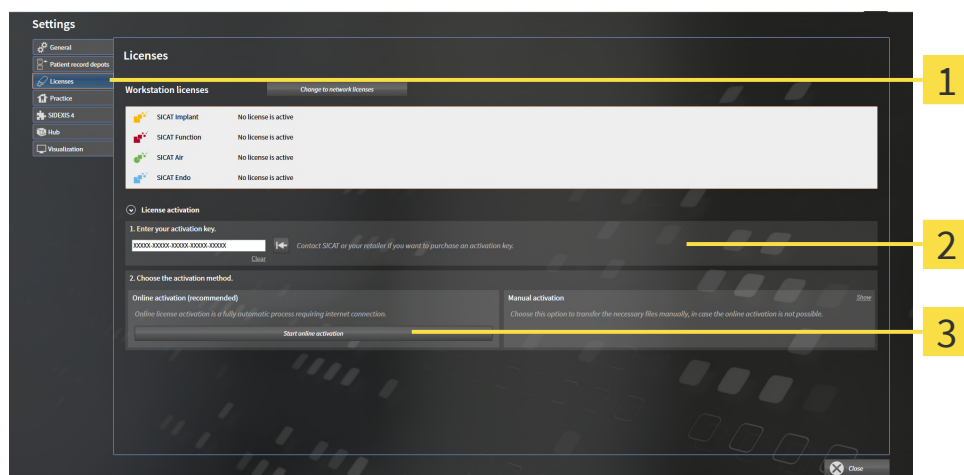
1 **License activation** button

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**.

> **i** 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.

21.3 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 66]*.

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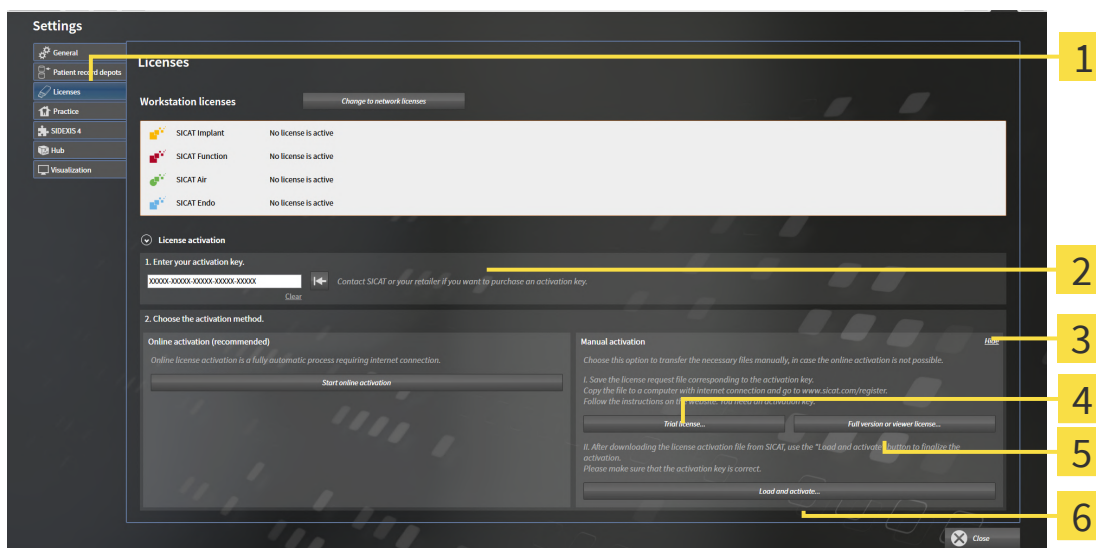
1	**License activation**	**4**	**Trial license** button
2	**Enter your activation key** area	**5**	**Full version or viewer license** button
3	**Show**	**6**	**Load and activate** button

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**.

21.4 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 66]*.
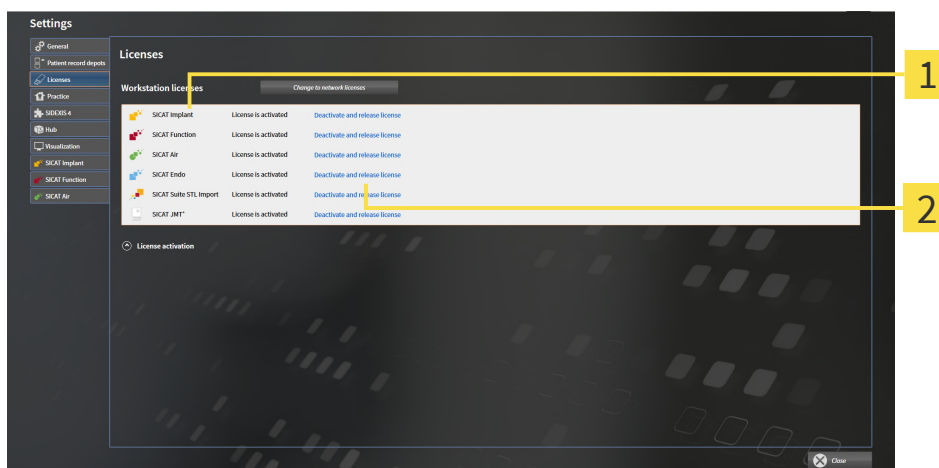
1 License status of SICAT applications and individual functions

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.

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

21.5 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 66]*.

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

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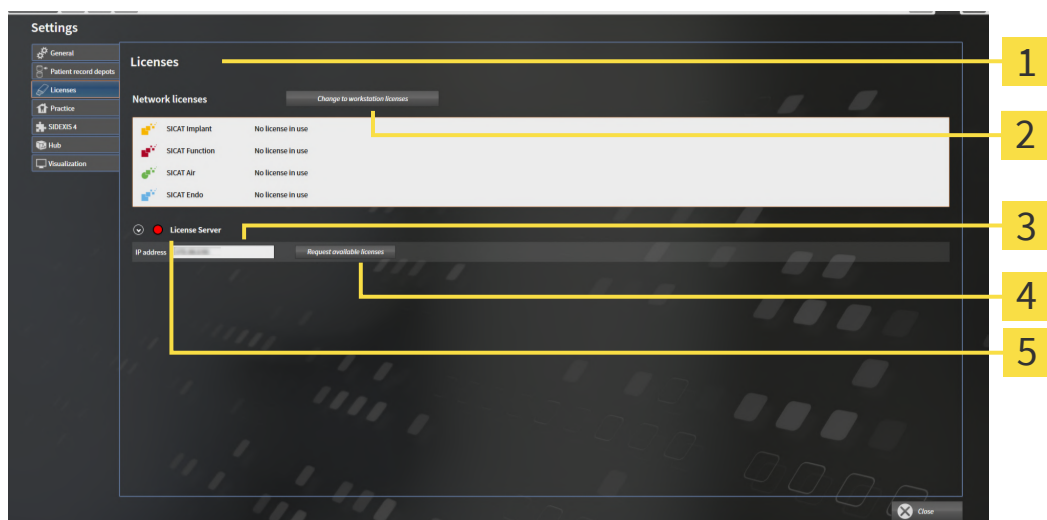
1	**Licenses** window	**4**	**Request available licenses** button
2	**Change to workstation licenses** button	**5**	Status indicator
3	**IP address** area		

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.

22 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.

i	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

i	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 96]*.

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 76]*

- *Adding a connection to a patient database [▶Page 77]*

- *Activating another patient database [▶Page 82]*

- *Removing a connection to a patient database [▶Page 83]*

22.1 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:
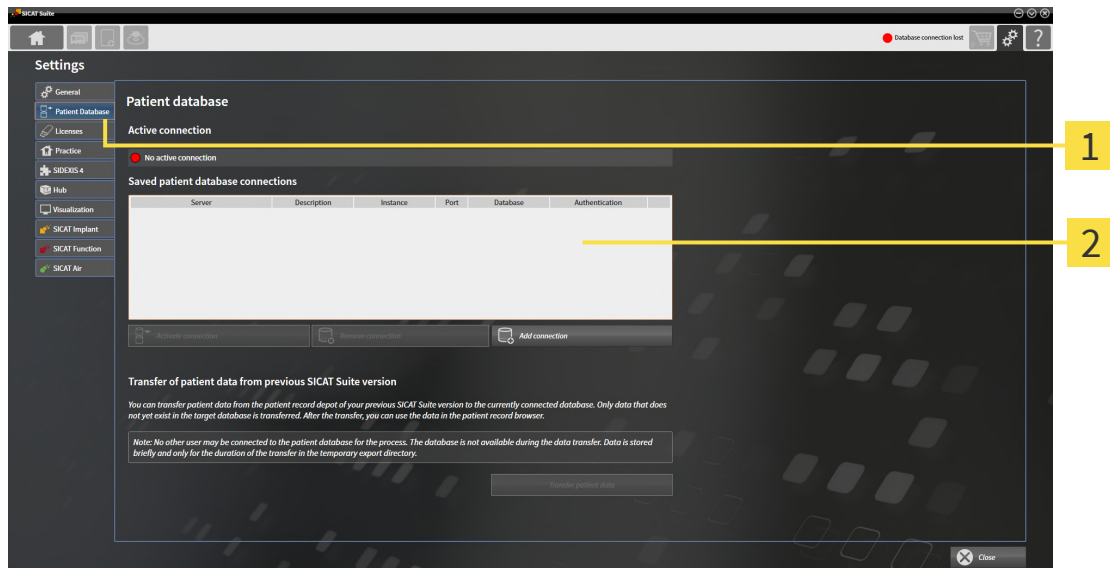
1 **Patient Database** tab

2 **Saved patient database connections** list

Continue with one of the following actions:

- *Adding a connection to a patient database [►Page 77]*

- *Activating another patient database [►Page 82]*

- *Removing a connection to a patient database [►Page 83]*

22.2 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.
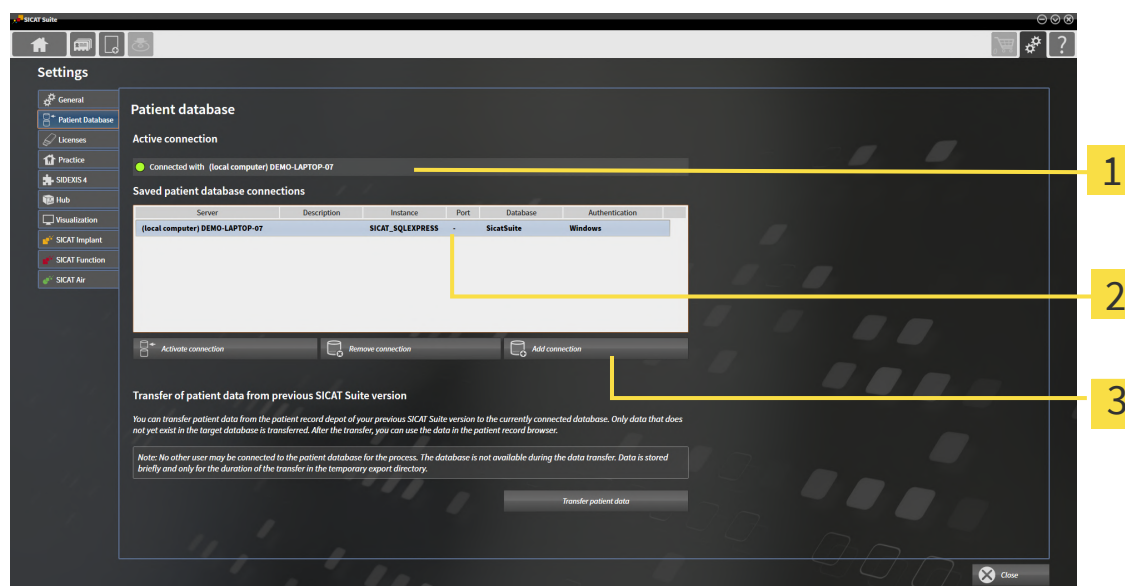
1 Active connection   **3** **Add connection** button

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:
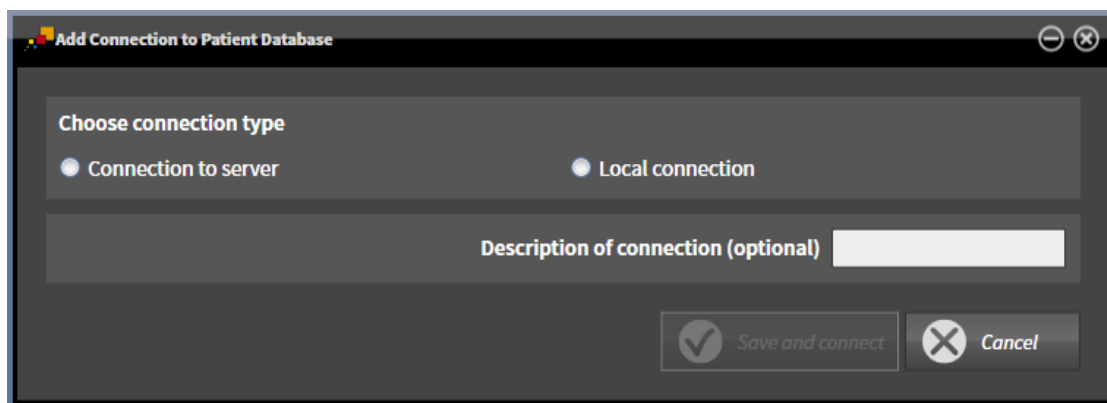
2. Select the type of connection according to the type of installation.

The following options are available for adding a connection:

- *Adding a local connection [▶Page 79]*

- *Adding a connection to a server [▶Page 80]*

22.2.1 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].*
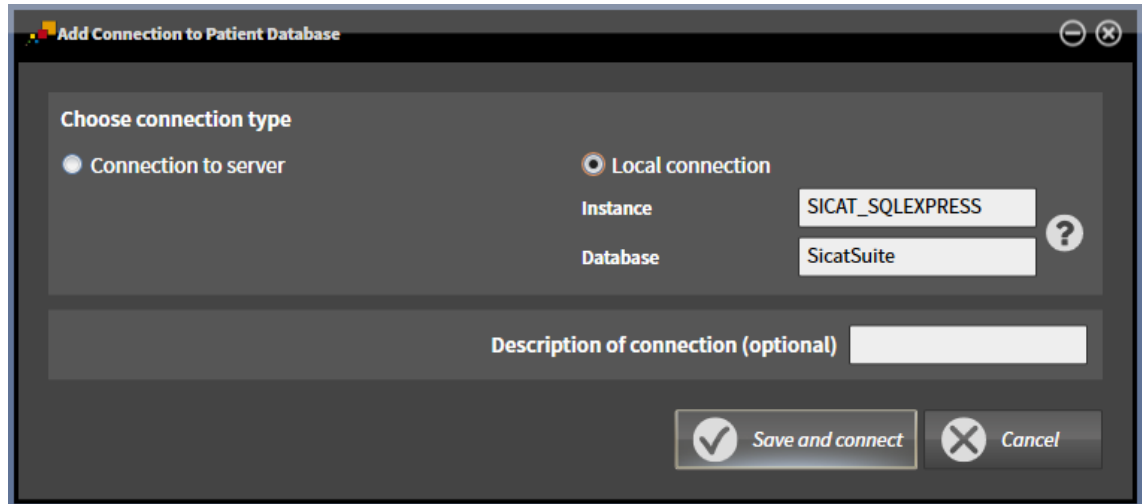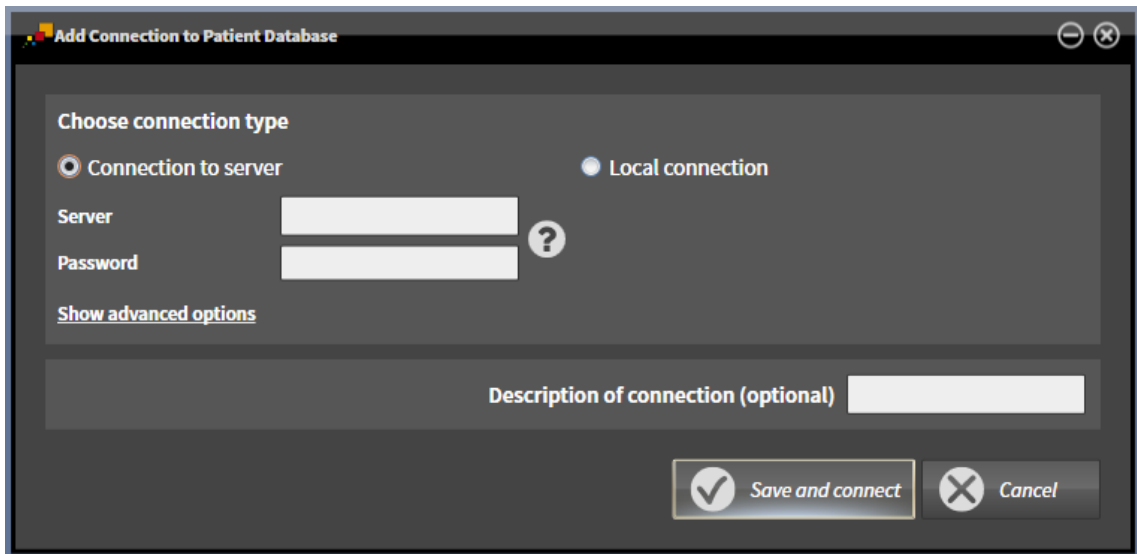
1. In the window **Add connection to patient database**, select the check box **Local connection**.
   - ▶ The connection details are displayed.
   - ▶ The input fields are pre-populated with default values that are used during installation.

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**.

22.2.2 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**.

22.3 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 77]*.

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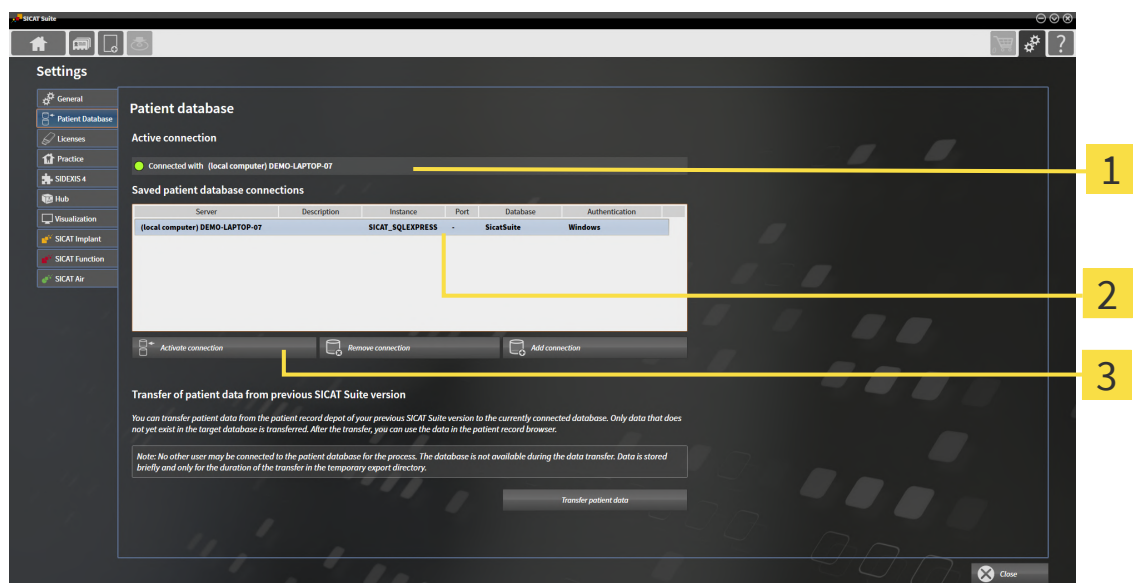
| **1** | Active connection | **3** | **Activate connection** button |
| **2** | **Saved patient database connections** list | | |

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**.

22.4 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 77]*.

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.
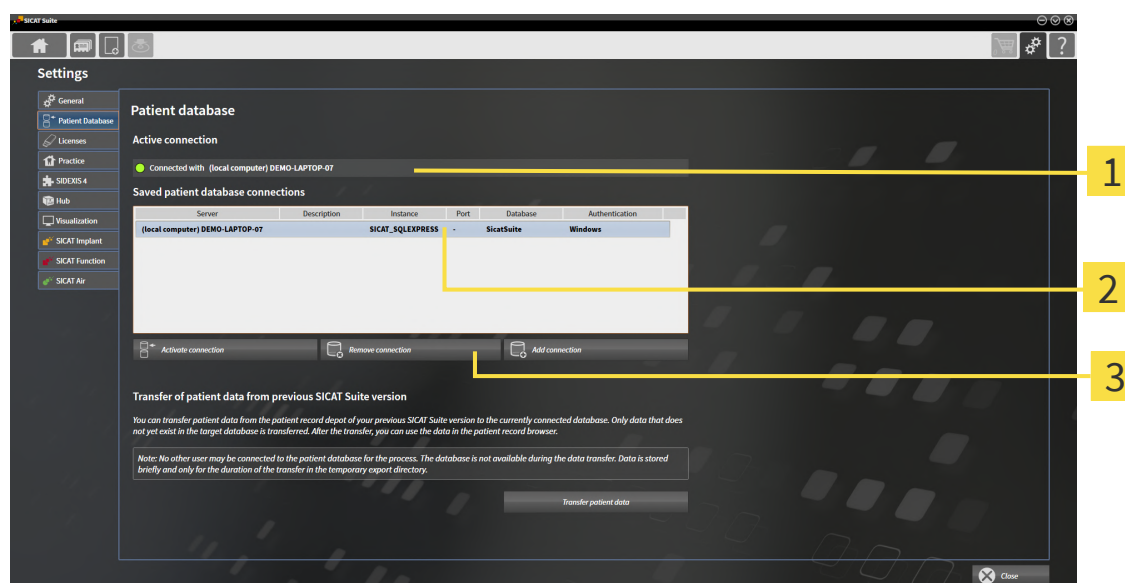
1	Active connection	**3**	**Remove connection** button
2	**Saved patient database connections** list		

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 **Remove connection** button.

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

22.5 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 77]*.

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

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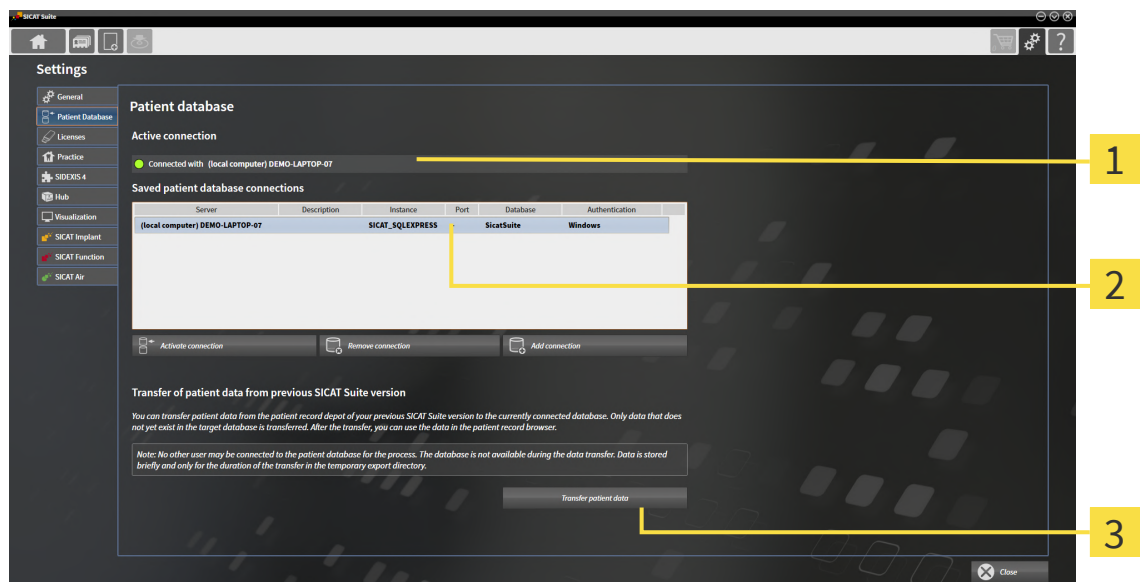
| 1 | Active connection | 3 | **Transfer patient data** button |
| 2 | **Saved patient database connections** list | | |

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 82]*.

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

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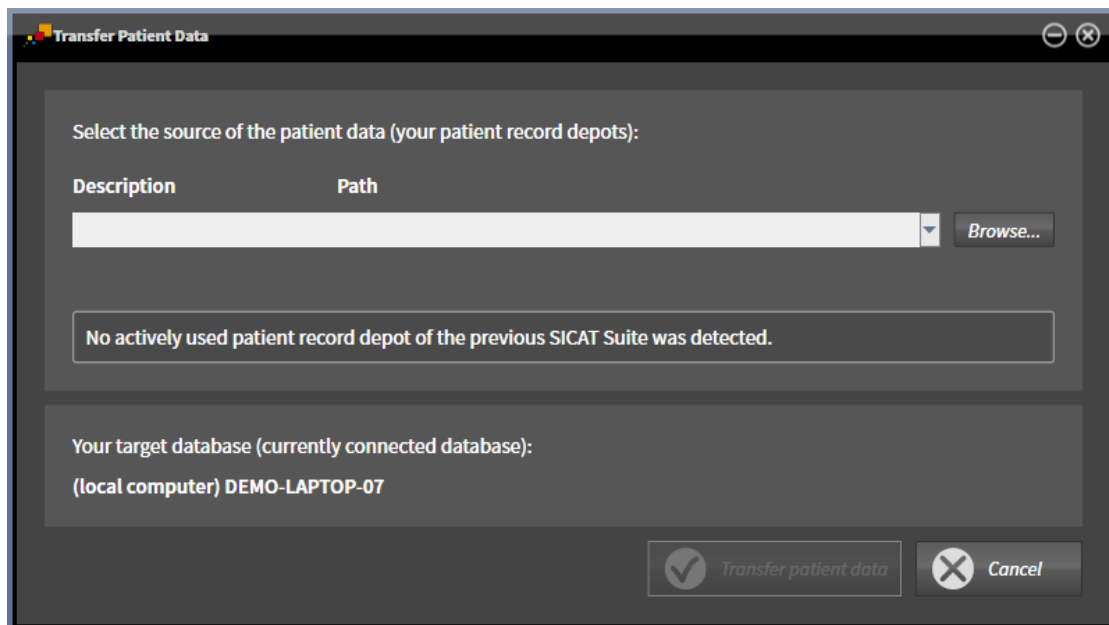
3. Click on the **Browse** button.

   ► 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.

23 DATA IMPORT

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

	Deleting original data may result in data being lost.
⚠️ **CAUTION**	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 88*])

- 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 89]*

- *Selecting an import option [▶Page 91]*

- *Allocating data to an existing patient record [▶Page 93]*

or

- *Creating a new patient record through data import [▶Page 92]*

23.1 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.

23.2 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:
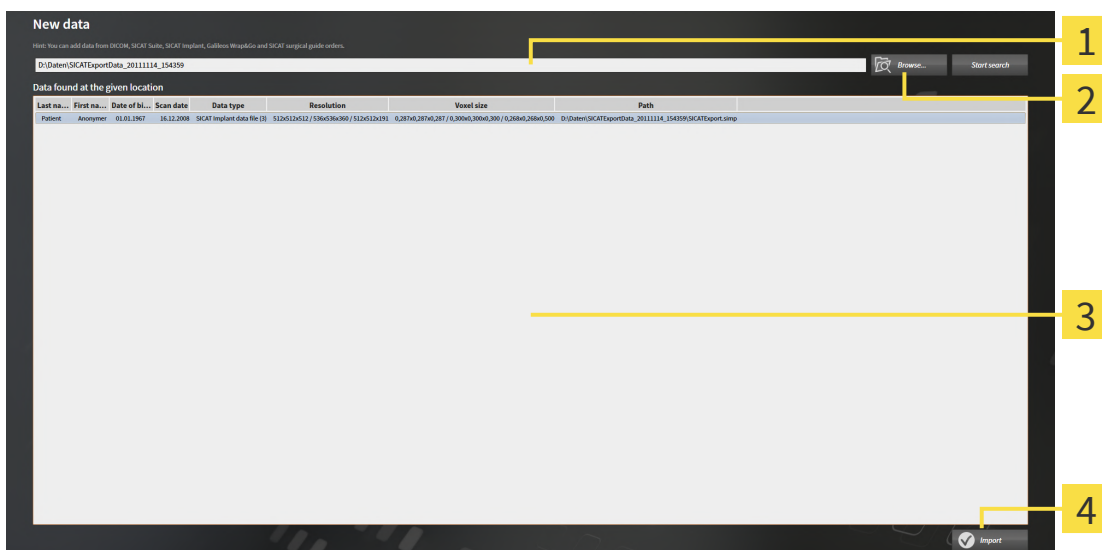
| **1** | **Where is the data located** field | **3** | **Data found at the given location** list |
| **2** | **Browse** button | **4** | **Import** button |

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 91]*.

23.3 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:

 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 86]*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 93]*

- *Creating a new patient record through data import [▶Page 92]*

23.4 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.
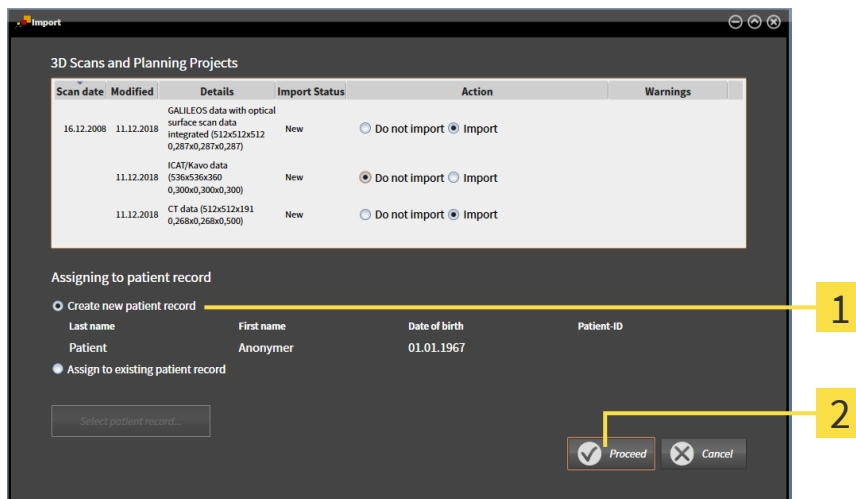
1 **Create new patient record** option

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 96]*.

23.5 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.
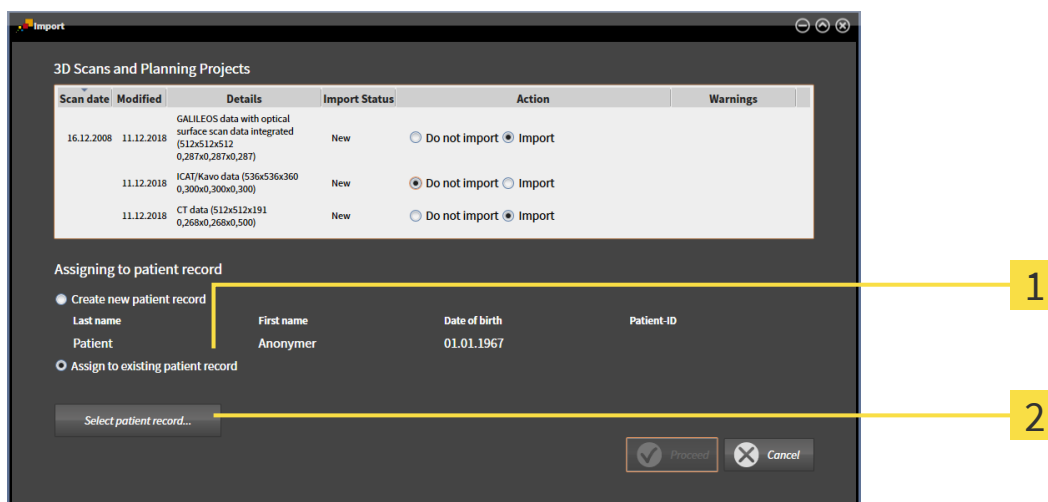
1 Option **Assign to existing patient record**

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:
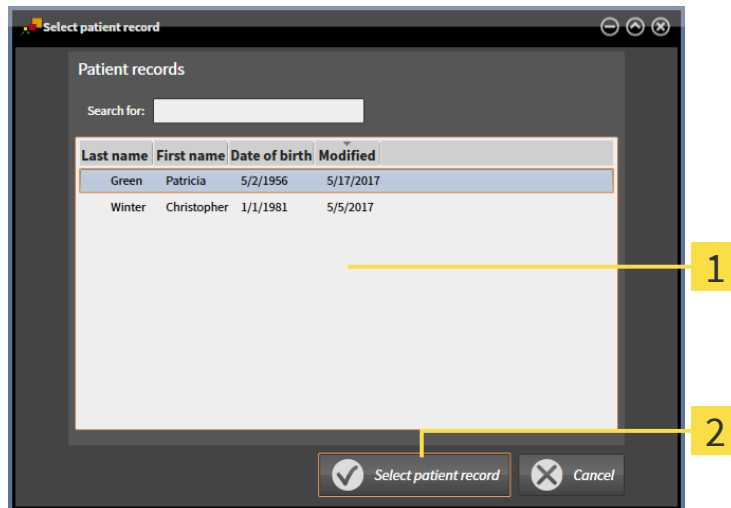
1 **Patient records** list

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.
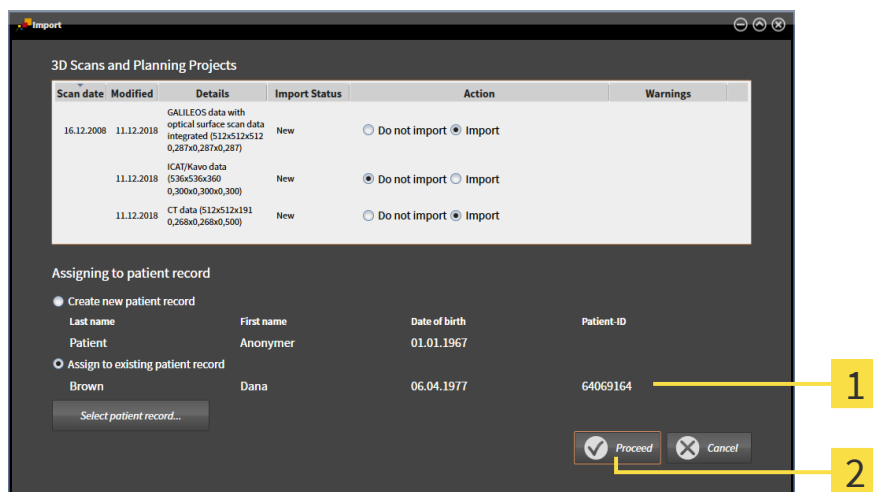
1 Attributes of the selected patient record

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 record, a warning message opens:
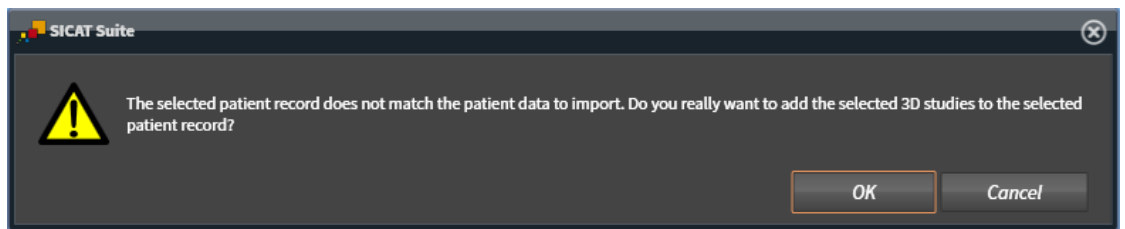
5. If you still want to import the data, click on **OK**.

▶ 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 Records in the **Patient records** list. Information on this can be found in the section *Patient records [▶Page 96]*.

24 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 97]*

- *Searching for and sorting patient records [▶Page 98]*

- *Opening 3D X-ray scans or planning projects from the patient record summary [▶Page 103]*

- *Working with patient records [▶Page 100]*

- *Changing the attributes of patient records [▶Page 102]*

- *Deleting patient records [▶Page 109]*

- *Deleting 3D X-ray scans or planning projects from patient records [▶Page 111]*

- *Unlocking patient records after lock has expired [▶Page 113]*

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

- *Data import [▶Page 86]*

- *Data export [▶Page 263]*

24.1 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:
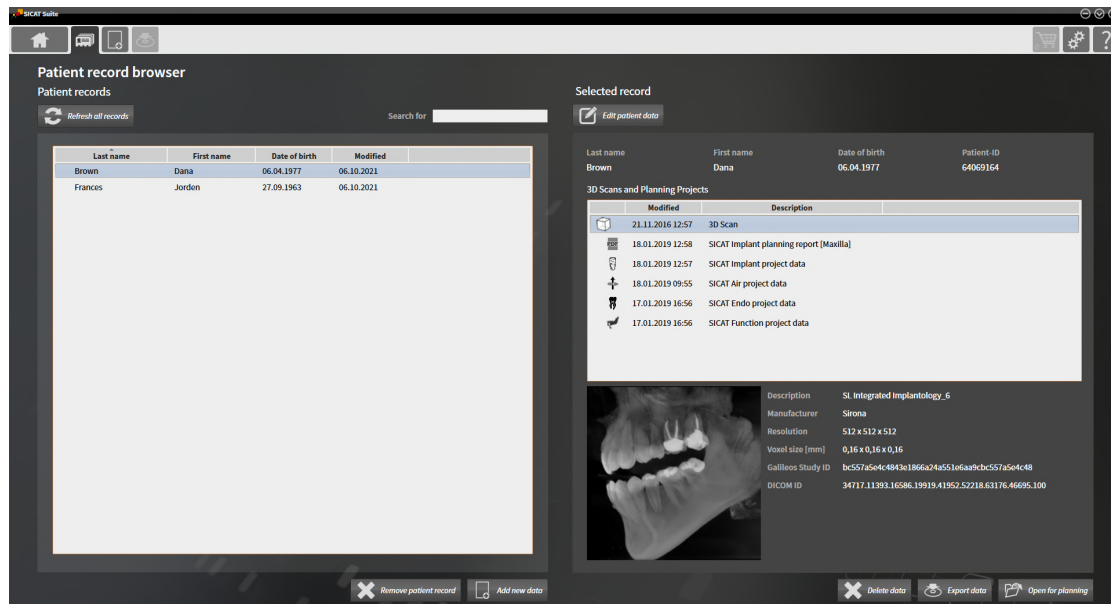
Continue with one of the following actions:

- ■ *Searching for and sorting patient records [▶Page 98]*

- ■ *Working with patient records [▶Page 100]*

- ■ *Changing the attributes of patient records [▶Page 102]*

- ■ *Opening 3D X-ray scans or planning projects from the patient record summary [▶Page 103]*

- ■ *Deleting patient records [▶Page 109]*

- ■ *Deleting 3D X-ray scans or planning projects from patient records [▶Page 111]*

- ■ *Unlocking patient records after lock has expired [▶Page 113]*

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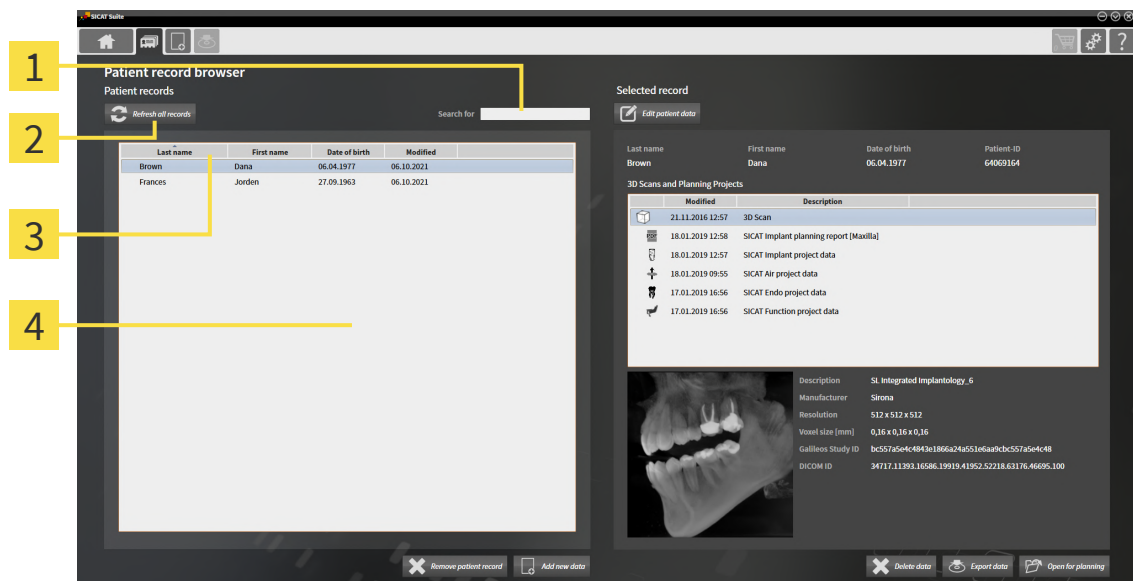
1	**Search for** field	**3**	Column headers with attributes
2	**Refresh all records** button	**4**	**Patient records** list

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 96]*.

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 97]*.

■ 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.

> **i** 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 97]*.

■ 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 97]*.

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.

24.3 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 97]*.
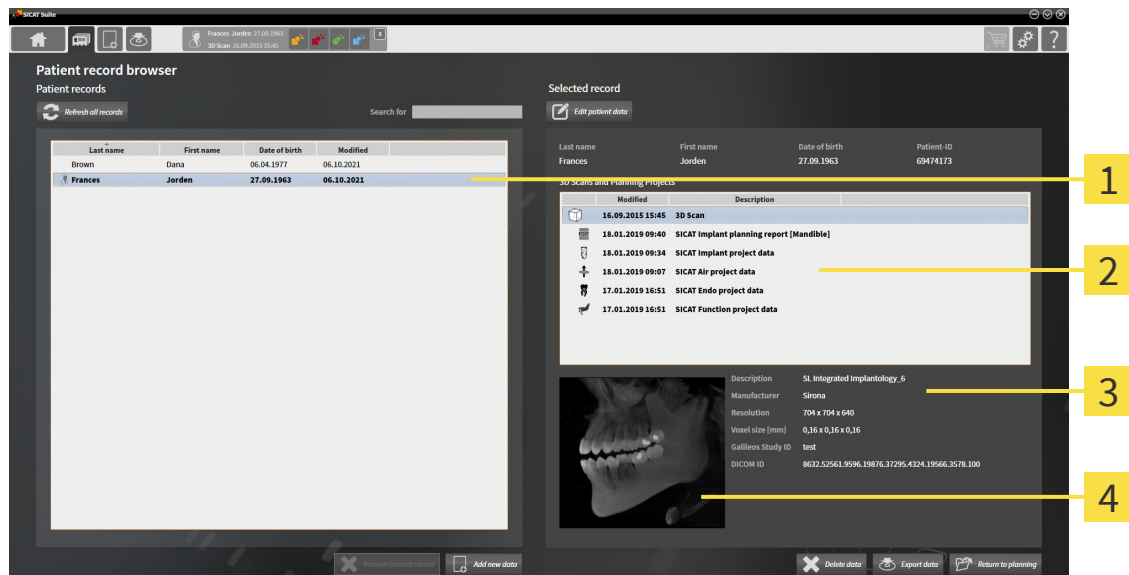
1	**Patient records** list	**3**	**Details** area
2	**3D Scans and Planning Projects** list	**4**	**Overview** area

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 96]*.

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 102]*

- *Deleting 3D X-ray scans or planning projects from patient records [▶Page 111]*

- *Deleting patient records [▶Page 109]*

- *Data export [▶Page 263]*

- *Unlocking patient records after lock has expired [▶Page 113]*

24.4 CHANGING THE ATTRIBUTES OF PATIENT RECORDS

> ℹ️ 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 97]*

☑ 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.

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

> ℹ️ 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.

24.5 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 285]* and *Patient records [▶Page 96]* and *Working with patient records [▶Page 100]*.

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 97]*.
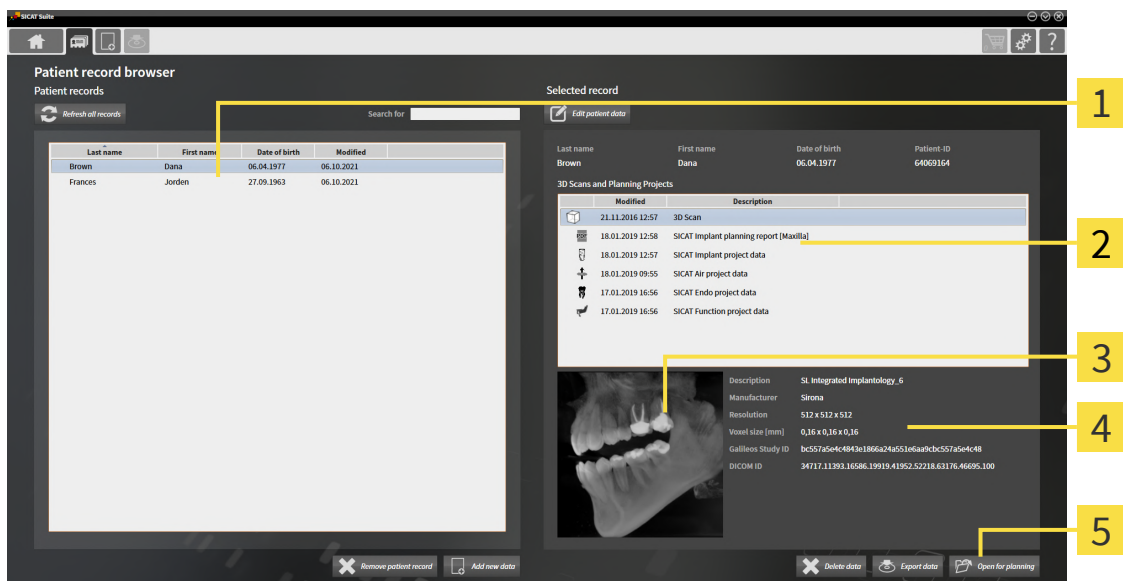
1	**Patient records** list		4	**Details** area
2	**3D Scans and Planning Projects** list		5	**Open for planning** or **Open to view** button
3	**Overview** area			

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.

> **ℹ** 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.

24.6 SICAT IMPLANT 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** shows information about SICAT Implant studies if you have selected a SICAT Implant study in the **3D Scans and Planning Projects** area.
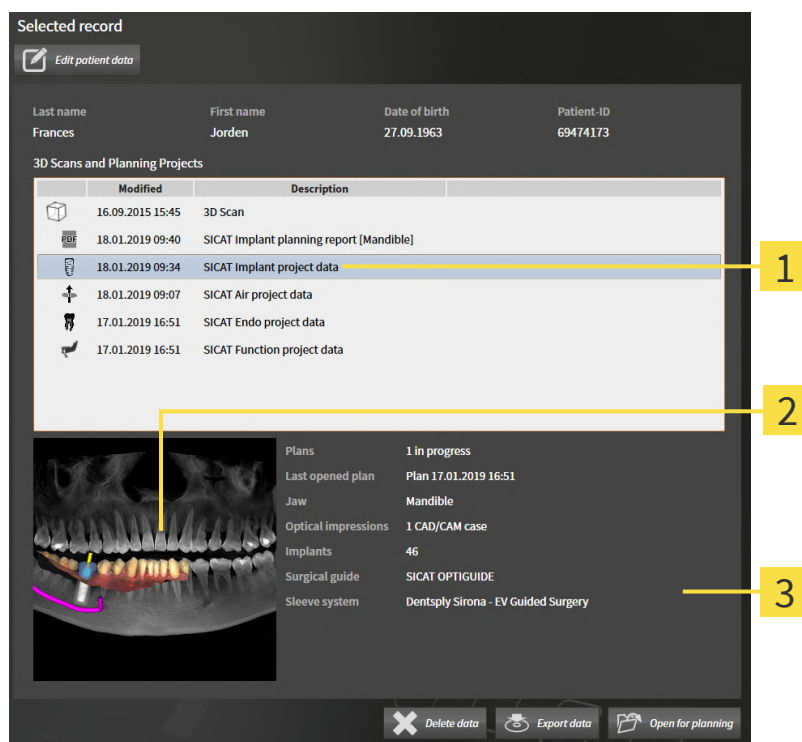
1   Selected SICAT Implant study

2   **Overview** area

3   **Details** area

The **Overview** area shows the **Panorama** view:
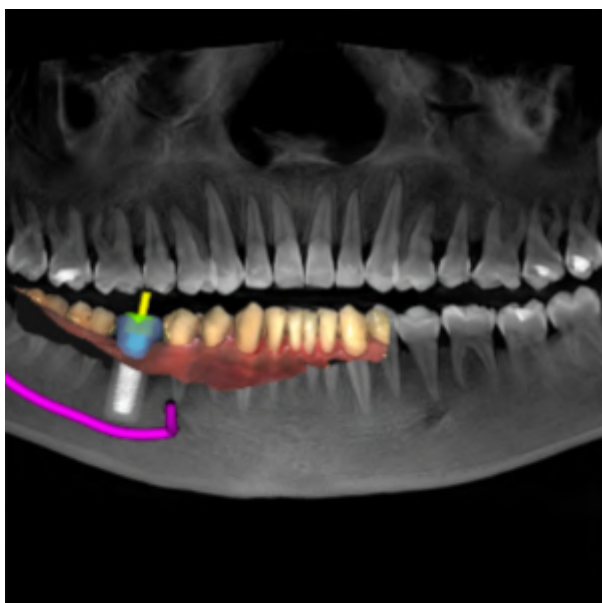
The **Details** section displays the following information:

- Number and status of the plans

- Information about the last opened plan
    - Name
    - Jaw
    - Number of imported CAD/CAM cases
    - Tooth positions of the planned implants
    - Planned surgical guide
    - Planned sleeve system

24.7 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.

24.8 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 97]*.

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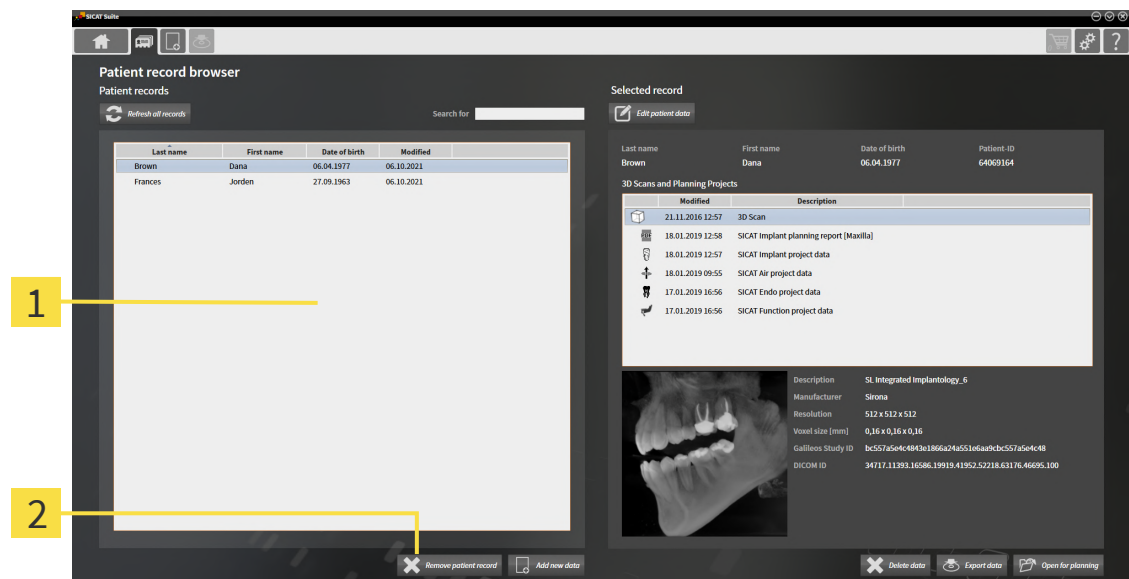
1 **Patient records** list

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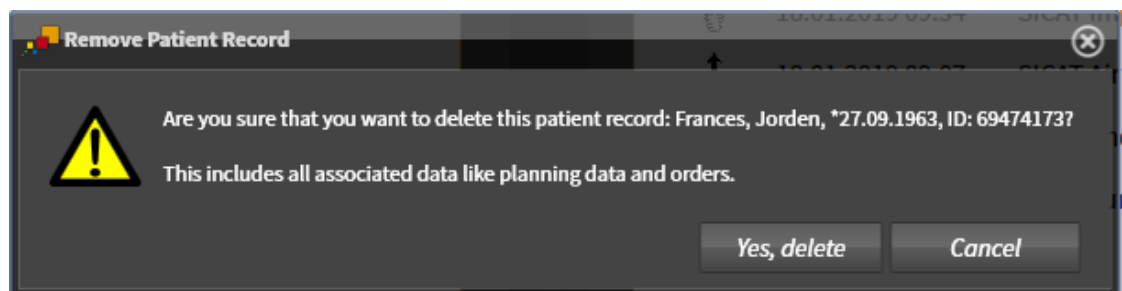
3.   Click on **Yes, delete** in the confirmation message if you wish to delete the selected data.

▶ 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.

24.9 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 97]*.

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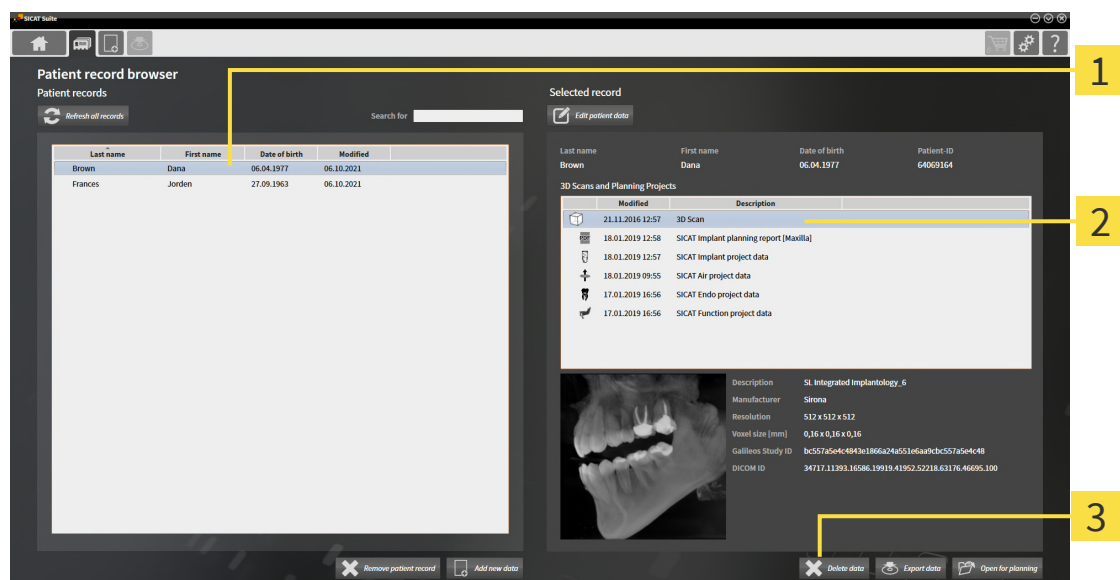
1 **Patient records** list

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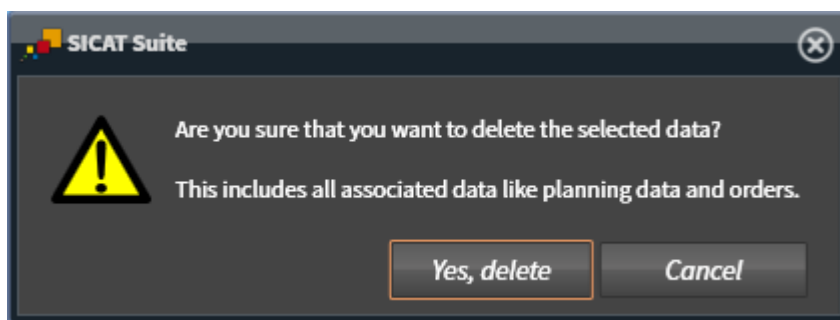
4. Click on **Yes, delete** in the confirmation message if you wish to delete the selected data.

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

24.10 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 97]*

☑ 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:
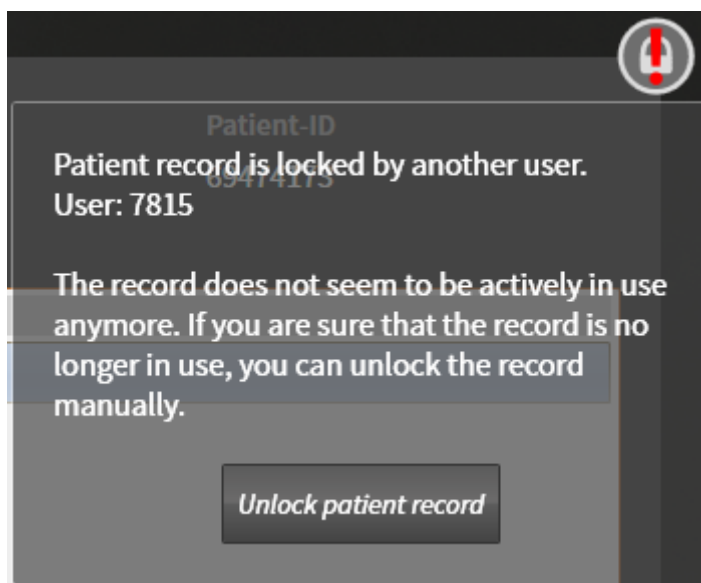
   ▶ It will indicate the name of the user who is currently causing the patient record to be locked.

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.

25 THE SICAT IMPLANT USER INTERFACE

The SICAT Implant user interface comprises the following parts:
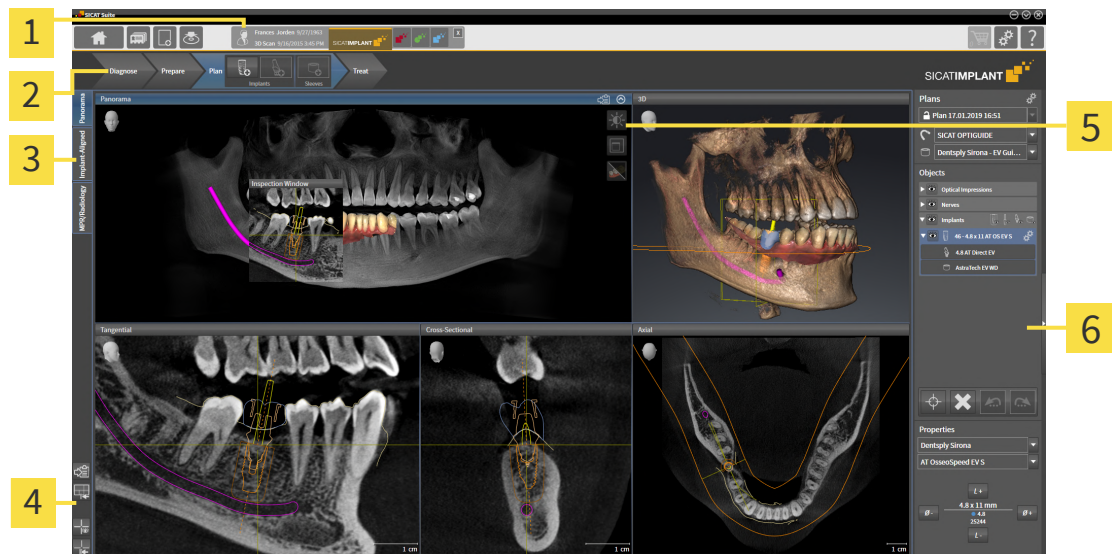
1	Open patient file with information about the 3D X-ray scan and buttons for selecting the SICAT applications	**5**	**View toolbar**
2	**Workflow toolbar**	**6**	**Object bar**
3	Buttons to change workspaces		
4	**Workspace toolbar**		

- The **Workflow toolbar** consists of various workflow steps, which include the main tools of the application workflow. This includes tools which you can use to add and import diagnosis objects and planning objects. Information on this can be found in the section *Workflow toolbar [▶Page 115]*.

- The **Workspace area** is the part of the user interface below the **Workflow toolbar**. It displays the active workspace of SICAT Implant. Each workspace contains a specific combination of views. Information on this can be found in the section *Workspaces [▶Page 124]*.

- 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 133]* and *Adjusting the 3D view [▶Page 150]*.

- The **Object bar** contains tools for the management of diagnosis objects and planning objects. For further information about this see *Object bar [▶Page 117]* and *SICAT Implant objects [▶Page 122]*.

- 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 141]*, *Resetting views [▶Page 148]*, *Adjusting and resetting the layout of workspaces [▶Page 130]* and *Creating screenshots of workspaces [▶Page 131]*.

25.1 WORKFLOW TOOLBAR

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

1. **Diagnose**
2. **Prepare**
3. **Plan**
4. **Treat**

EXPANDING AND COLLAPSING WORKFLOW STEPS

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

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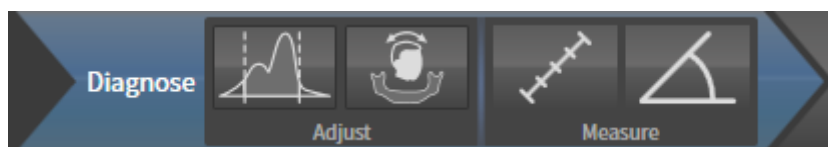
The following tools are available in the **Diagnose** workflow step:

- **Adjust gray values** - Information on this can be found in the section *Adjusting gray scale values [▶Page 172]*. 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 176]* and *Adjusting the panoramic region [▶Page 181]*.

- **Add distance measurement (D)** - Information on this can be found in the section *Adding distance measurements [▶Page 185]*.

- **Add angle measurement (A)** - Information on this can be found in the section *Adding angle measurements [▶Page 186]*.

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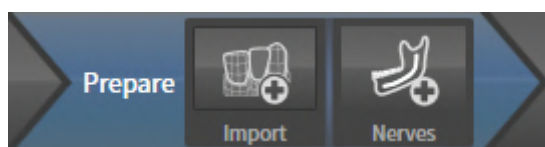
The following tools are available in the **Prepare** workflow step:

- **Import and register optical impressions** - Information on this can be found in the section *Optical impressions [▶Page 190]*.

- **Mark mandibular nerve** - Information on this can be found in the section *Marking and adjusting mandibular nerves [▶Page 205]*.

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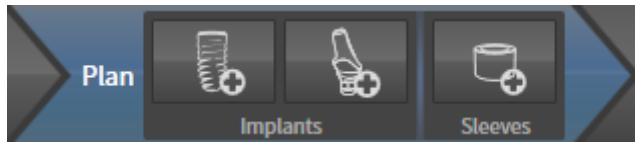
The following tools are available in the **Plan** workflow step:

- **Add implants** - Information on this can be found in the section *Adding implants [▶Page 212]*.

- **Add abutment to the (active) implant** - Information on this can be found in the section *Adding abutments [▶Page 226]*.

- **Add sleeve to the (active) implant** - Information on this can be found in the section *Adding sleeves [▶Page 233]*.

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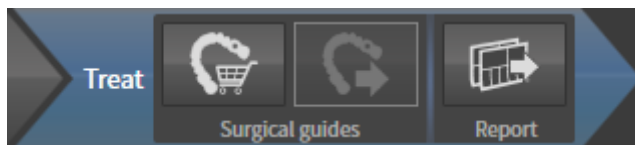
The following tools are available in the **Treat** workflow step:

- **Order SICAT surgical guide** - Information on this can be found in the section *Placing SICAT surgical guides in the shopping cart [▶Page 242]*.

- **Export for CEREC Guide** - Information on this can be found in the section *Exporting for CEREC Guide [▶Page 253]*.

- **Create planning report** - Information on this can be found in the section *Creating planning reports [▶Page 259]*.

25.2 OBJECT BAR
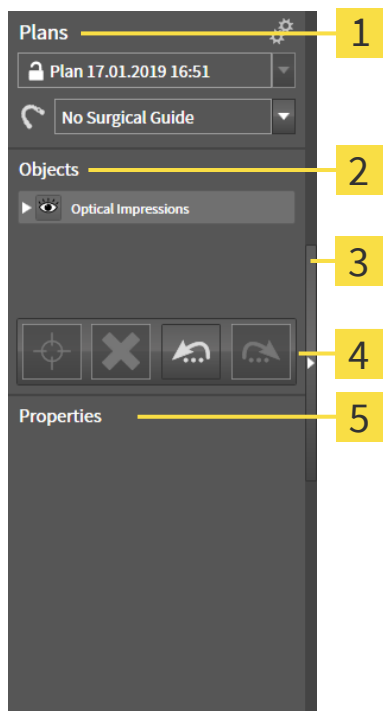
1	**Plans** area	**4**	**Object toolbar**
2	**Object browser**	**5**	**Properties** area
3	**Hide object bar** button or **Show object bar** button		

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

■ SICAT Implant manages diagnosis objects and planning objects in plans. In the **Plans** area, you can switch and manage plans as well as change the surgical guide and the sleeve system of the currently opened plan. For further information about this see *Switching and managing plans [▶Page 118]* and *Changing surgical guide and sleeve system [▶Page 236]*.

■ The **Object browser** shows a categorized list of all diagnosis objects and planning objects that you have added or imported to the currently opened plan. The **Object browser** groups objects automatically. For example, the **Measurements** group contains all measurement objects. You can expand or collapse 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 119]*.

■ The **Object toolbar** contains tools for focusing objects, removing objects or object groups and undoing or redoing object actions or object group actions. Information on this can be found in the section *Managing objects with the object toolbar [▶Page 121]*.

■ In the **Properties** area, you can view the main properties of the active object and change them for certain objects.

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 Implant can be found in the section *SICAT Implant objects [▶Page 122]*.

25.3 SWITCHING AND MANAGING PLANS

Your treatment planning is always based on a plan that contains diagnosis objects and planning objects. You can see the currently opened plan in the **Plans** area:
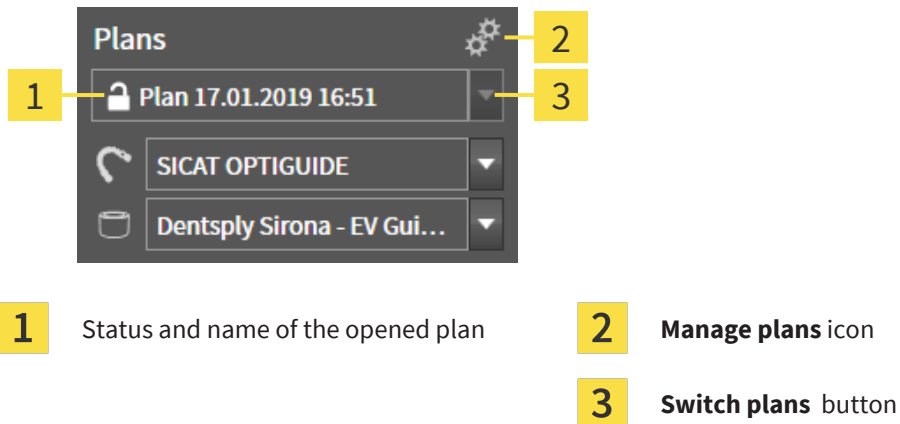
1	Status and name of the opened plan	2	**Manage plans** icon
		3	**Switch plans** button

SWITCHING PLANS

☑ There are two or more plans in the study.

1. Click on the **Switch plans** button.
    ► SICAT Implant displays a list with plans.

2. Click on the plan you want to open.

► SICAT Implant saves and closes the previously opened plan.

► SICAT Implant opens the selected plan.

MANAGING PLANS

The **Manage Plans** icon opens the **Manage Plans** window. Further information is available in the section *Managing plans [►Page 158]*.

> ℹ️ **Changing surgical guide and sleeve system**
> Information on how to change the surgical guide and the sleeve system is available in the section *Changing surgical guide and sleeve system [►Page 236]*.

25.4 MANAGING OBJECTS WITH THE OBJECT BROWSER

COLLAPSING AND EXPANDING OBJECT GROUPS

To collapse or expand an object group, proceed as follows:
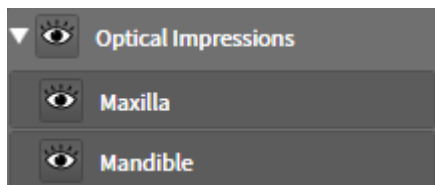
☑ The desired object group is currently expanded.

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 Implant deactivates a previously activated object or object group.
- ► SICAT Implant activates the desired object or the desired object group.
- ► SICAT Implant highlights the object or object group in **Object browser** and the views in a certain color.

> ℹ️ In the views, you can also activate certain objects by clicking on the objects.

HIDING AND SHOWING OBJECTS AND OBJECT GROUPS

> ℹ️ 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 Implant hides the object or object group.

► SICAT Implant 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 Implant shows the object or object group.

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

For information on hiding and showing safety margins, channels, abutments, and sleeves, see:

- *Hiding and showing safety margins [▶Page 222]*
- *Hiding and showing channels [▶Page 223]*
- *Hiding and showing abutments [▶Page 231]*
- *Hiding and showing sleeves [▶Page 240]*

25.5 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 119]*.

☑ The object can be focused.

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

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

▶ SICAT Implant displays the active object in the views.

> **i** You can also focus on objects by double-clicking them in the **Object browser**. In addition, you can focus on specific objects by double-clicking them in the views.

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 119]*.

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

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

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

▶ SICAT Implant 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.

25.6 SICAT IMPLANT OBJECTS

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

- Optical impressions with restorations
- Nerves
- Implants with abutments and sleeves

"OPTICAL IMPRESSIONS" OBJECT GROUP
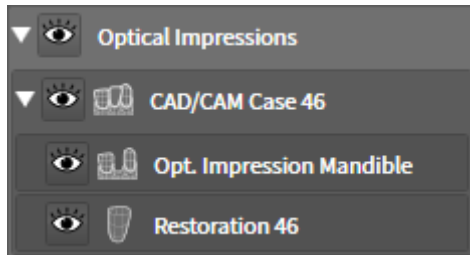
In SICAT Implant, you can import several CAD/CAM cases. For each imported CAD/CAM case, SICAT Implant shows a subordinate **CAD/CAM case** object group with the corresponding tooth positions in the **Optical Impressions** object group in the **Object browser**. A **CAD/CAM case** object group may contain the following objects:

- **Opt. Impression Maxilla**
- **Opt. Impression Mandible**
- One or more **Restoration** objects with corresponding tooth positions

For an active CAD/CAM case, SICAT Implant shows the import date and the format in the **Properties** area. For an active optical impression, the scan date and the scan system are shown in the **Properties** area.

If you remove one of the objects of a CAD/CAM case, SICAT Implant removes the corresponding CAD/CAM case. The removal of CAD/CAM cases cannot be undone.

"NERVES" OBJECT GROUP
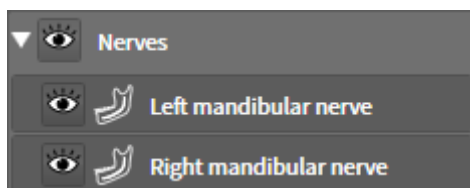
When you mark a mandibular nerve, SICAT Implant shows the **Nerves** object group in the **Object browser**. The **Nerves** object group may contain the following objects:

- **Left mandibular nerve**
- **Right mandibular nerve**

When focusing on nerves, the focus is placed on the last active nerve point.

> **i** When a nerve is hidden, some functions for planning the nerve are disabled. Show the nerve to enable these functions again.

"IMPLANTS" OBJECT GROUP
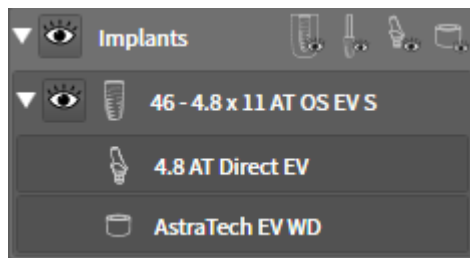
For each planned implant, SICAT Implant shows a subordinate **Implant** object group with the tooth position, the implant diameter in millimeters, the implant length in millimeters and the implant line in the **Implants** object group in the **Object browser**. An **Implant** object group may contain the following objects:

- Abutment with angulation in degrees for angulated abutments, platform and abutment line

- Sleeve

When focusing on implants and abutments, the focus is placed on the occlusal point of the implant. When focusing on sleeves, the focus is placed on the center of the sleeve.

> **i** When an implant is hidden, some functions for planning the implant, its abutment and its sleeve are disabled. Show the implant to enable these functions again.

26 WORKSPACES

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

SICAT Implant features three different workspaces:

- **Panorama** workspace - Information on this can be found in the section *Overview of the panoramic workspace [▶Page 125]*.

- **Implant-Aligned** workspace - Information on this can be found in the section *Overview of the Implant-Aligned workspace [▶Page 127]*.

- **MPR/Radiology** workspace - Information on this can be found in the section *Overview of the MPR/ Radiology workspace [▶Page 128]*.

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

- *Switching workspaces [▶Page 129]*.

- *Adjusting and resetting the layout of workspaces [▶Page 130]*.

- *Adjusting the views [▶Page 133]*.

- There are additional possibilities to adjust the **3D** view. Information on this can be found in the section *Adjusting the 3D view [▶Page 150]*.

- You can document the contents of the active workspace. Information on this can be found in the section *Creating screenshots of workspaces [▶Page 131]*.

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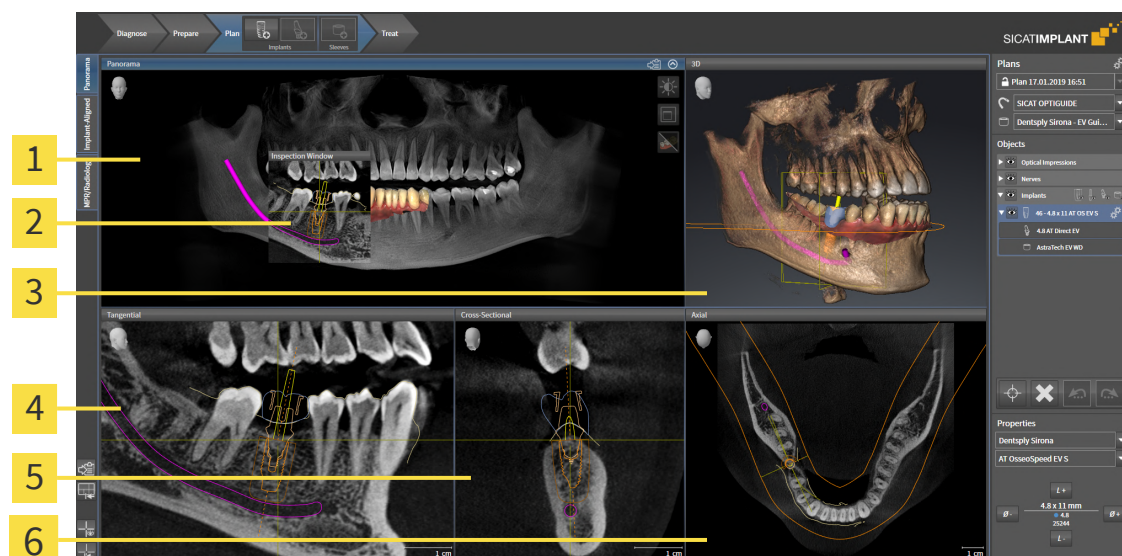
1	**Panorama** view	**4**	**Tangential** view
2	**Inspection Window**	**5**	**Cross-Sectional** view
3	**3D** view	**6**	**Axial** view

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 181]*.

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 142]*.

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 274]*.

You can find information on the functions of the views in the sections *Adjusting the views [*▶*Page 133]* and *Adjusting the 3D view [*▶*Page 150]*.

26.2 OVERVIEW OF THE IMPLANT-ALIGNED WORKSPACE
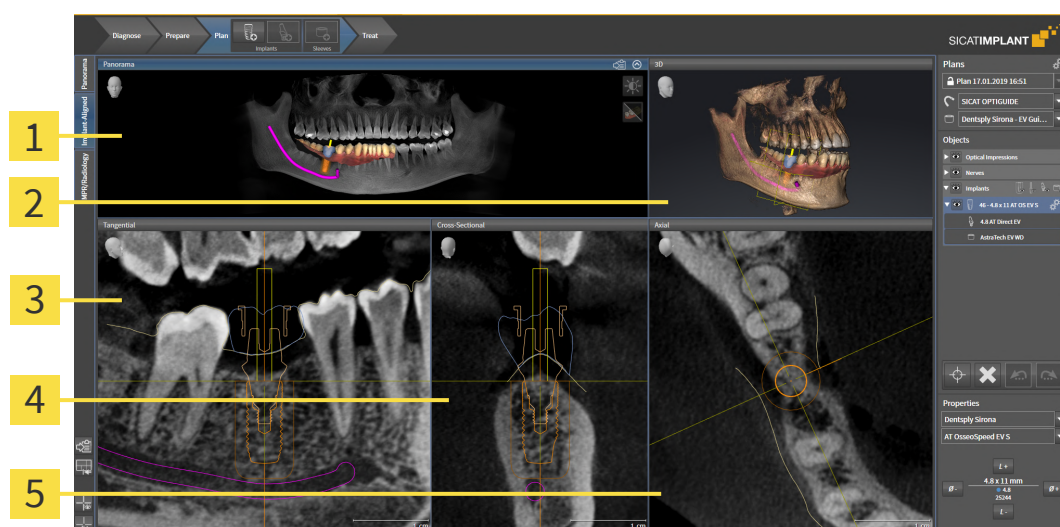
1 **Panorama** view		**4** **Cross-Sectional** view	
2 **3D** view		**5** **Axial** view	
3 **Tangential** view			

Use the **Implant-Aligned** workspace to precisely position and align implants and perform a final check of your planning. Further information is available in the section *Moving and aligning implants [*▶*Page 215]*.

The **Implant-Aligned** workspace provides the same views as the **Panorama** workspace. However, the slice views are always aligned with the active implant. As soon as you change the position or orientation of the active implant or switch the active implant, SICAT Implant adjusts the slice views accordingly so that you can see the optimum implant cross-sections in all three dimensions at all times.

In the **Implant-Aligned** workspace, you can also rotate the **Tangential** and **Cross-Sectional** views about the active implant, which enables you to optimally assess your planning from all directions and adjust it as needed. Further information is available in the section *Rotating views about active implant [*▶*Page 146]*.

You can find information on the functions of the views in the sections *Adjusting the views [*▶*Page 133]* and *Adjusting the 3D view [*▶*Page 150]*.

> **i** The more precise your adjustment of the volume orientation and panoramic curve, the easier it is to plan implants in the **Implant-Aligned** workspace. Further information is available in the section *Adjusting volume orientation and panoramic region [*▶*Page 174]*.

26.3 OVERVIEW OF THE MPR/RADIOLOGY WORKSPACE
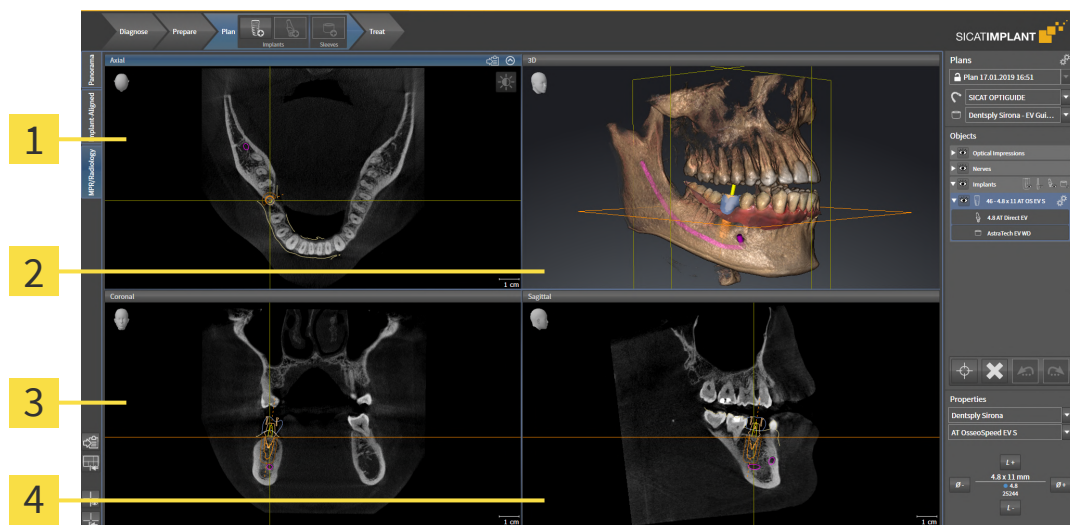
1	**Axial** view	**3**	**Coronal** view
2	**3D** view	**4**	**Sagittal** view

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 274]*.

3D VIEW

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

CORONAL VIEW

The **Coronal** view shows slices from the front.

SAGITTAL VIEW

By default, the **Sagittal** view shows slices from the right. You can switch the viewing direction of the **Sagittal** view. Information on this can be found in the section *Changing visualization settings [▶Page 274]*.

The functions of the views can be found in the sections *Adjusting the views [▶Page 133]* and *Adjusting the 3D view [▶Page 150]*.

26.4 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.

26.5 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:
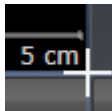
2. Click and hold the left mouse button.

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

26.6 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 129]*.

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

▶ SICAT Implant 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.

27 VIEWS

Views are contained in workspaces. A description of the various workspaces and views can be found under *Workspaces [▶Page 124]*.

You can adjust the views. For further information about this see *Adjusting the views [▶Page 133]* and *Adjusting the 3D view [▶Page 150]*.

27.1 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 135]*.

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 Implant 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 135]*

- *Maximizing and restoring views [▶Page 136]*

- *Adjusting and resetting the brightness and contrast of the 2D views [▶Page 137]*

- *Zooming views and panning views [▶Page 139]*

- *Scrolling through slices in the 2D slice views [▶Page 140]*

- *Moving, hiding and showing crosshairs and frames [▶Page 141]*

- *Moving, hiding, showing and maximizing the inspection window [▶Page 142]*

- *Tilting views [▶Page 144]*

- *Rotating views [▶Page 145]*

- *Rotating views about active implant [▶Page 146]*

- *Switching off and switching on the display of optical impressions in color [▶Page 147]*

- *Resetting views [▶Page 148]*

There are additional possibilities to adjust the **3D** view. Information on this can be found in the section *Adjusting the 3D view [▶Page 150]*.

You can document the content of an active view. Information on this can be found in the section *Creating screenshots of views [▶Page 149]*.

27.2 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 Implant activates the view:
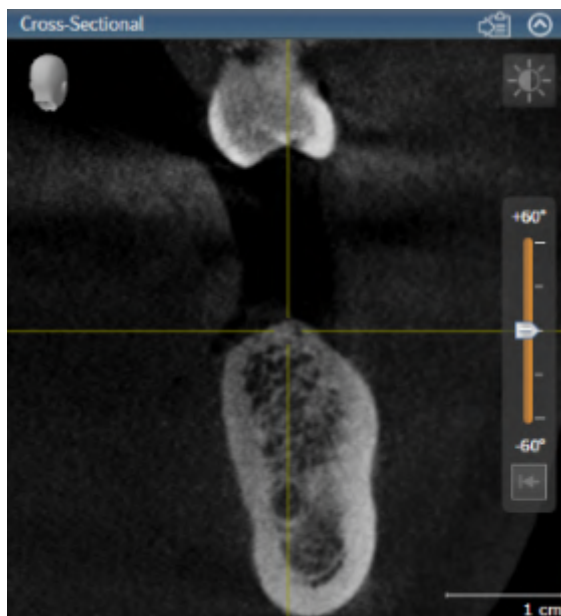
You can identify the activated view by the blue title bar.

27.3 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 135]*.

☑ The desired view is not maximized.

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

   ► SICAT Implant maximizes the view.

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

   ► SICAT Implant 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.

27.4 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 135]*.

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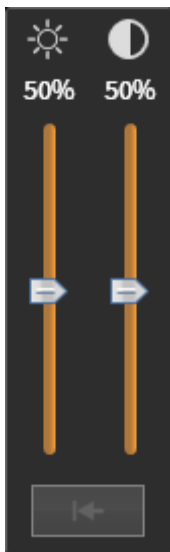
2. Move the mouse pointer over the **Brightness** slider.

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

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

4. Release the left mouse button.

   ► SICAT Implant 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 Implant adjusts the contrast of the 2D view according to the position of the **Contrast** slider.

7. Release the left mouse button.

   ► SICAT Implant 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.

27.5 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 Implant maintains the current position of the view.

27.6 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 Implant adjusts the slices and crosshairs of other views according to the current focus point.
   ► SICAT Implant adjusts the frames of the **3D** views according to the current focus point.

4. Release the left mouse button.

► SICAT Implant maintains the current slice.

27.7 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 Implant adjusts the slices and crosshairs of other views according to the current focus point.

   ▶ SICAT Implant adjusts the frames of the **3D** views according to the current focus point.

4. Release the left mouse button.

▶ SICAT Implant maintains the current position of the crosshair.

> ℹ️ 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 Implant hides the crosshairs in all 2D slice views.

   ▶ SICAT Implant hides the frames in the **3D** view.

2. Click on the **Show crosshairs and frames** icon.

   ▶ SICAT Implant shows the crosshairs in all 2D slice views.

   ▶ SICAT Implant shows the frames in the **3D** view.

27.8 MOVING, HIDING, SHOWING AND MAXIMIZING THE INSPECTION WINDOW

MOVING THE INSPECTION WINDOW

To move the **Inspection Window**, proceed as follows:

☑ The **Panorama** workspace is already open. Information on this can be found in the section *Changing the active workspace [▶Page 129]*.

☑ The **Inspection Window** is already shown:

1. Place the mouse pointer on the **Inspection Window** title bar in the **Panorama** 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 Implant adjusts the slices and crosshairs of other views according to the current focus point.

   ▶ SICAT Implant adjusts the frames of the **3D** view according to the current focus point.

4. Release the left mouse button.

▶ SICAT Implant maintains the current **Inspection Window** position.

HIDING, SHOWING AND MAXIMIZING THE INSPECTION WINDOW

> **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 129]*.

☑ 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 Implant displays the icons for setting the inspection window:

2. Click on the **Hide inspection window** icon.

► SICAT Implant hides the **Inspection Window**.

3. Click on the **Use default inspection window size** icon.

► SICAT Implant shows the **Inspection Window**.

4. Click on the **Show maximized inspection window** icon.

► SICAT Implant maximizes the inspection window.

27.9 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.
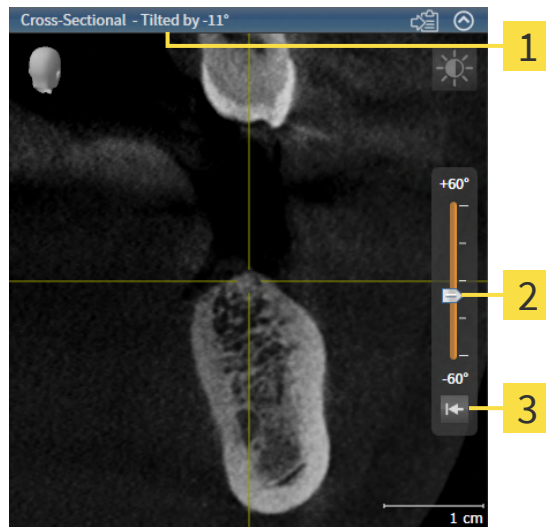
1	Currently set tilt	**3**	**Reset tilt** button
2	Slider for tilt adjustment		

☑ The **Panorama** workspace is already open. Information on this can be found in the section *Switching workspaces [▶Page 129]*.

☑ The **Tangential** or **Cross-Sectional** view is already active. Information on this can be found in the section *Changing the active view [▶Page 135]*.

- ■ 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 Implant tilts the active view and shows the currently set tilt in the title bar of the active view.

▶ SICAT Implant updates the line of the crosshair in the **Tangential** or **Cross-Sectional** view.

▶ SICAT Implant tilts the corresponding frame in the **3D** view.

> **i** You can reset the tilt to 0° by clicking the **Reset tilt** button.

27.10 ROTATING VIEWS

In the **Panorama** workspace, you can rotate the **Tangential** view. For example, to mark the mandibular nerve, you can rotate the view so that the ascending branch of the mandibular nerve is visible in a slice.

1	Currently set rotation	**3**	**Reset rotation** button
2	Slider for rotation adjustment		

☑ The **Panorama** workspace is already open. Information on this can be found in the section *Switching workspaces [▶Page 129]*.

☑ The **Tangential** view is already active. Information on this can be found in the section *Changing the active view [▶Page 135]*.

■ To adjust the rotation, move the slider to the right or to the left while pressing the mouse key until you reach the desired rotation. You can also change the rotation by clicking on the slider and using the **Right** and **Left** arrow keys.

▶ SICAT Implant rotates the active view and shows the currently set rotation in the title bar of the active view.

▶ SICAT Implant rotates the corresponding line of the crosshair in the **Cross-Sectional** and **Axial** views.

▶ SICAT Implant rotates the corresponding frame in the **3D** view.

i	The view is rotated about the current position of the crosshair. If you want to rotate the view about another position, first place the focus on this position.

i	You can reset the rotation to 0° by clicking on the **Reset rotation** button.

27.11 ROTATING VIEWS ABOUT ACTIVE IMPLANT

In the **Implant-Aligned** workspace, you can rotate the **Tangential** and **Cross-Sectional** views about the active implant, which enables you to optimally assess your planning from all directions and adjust it as needed.

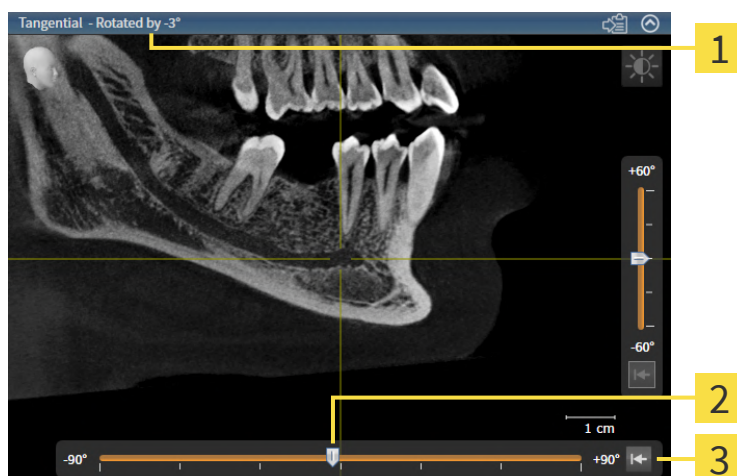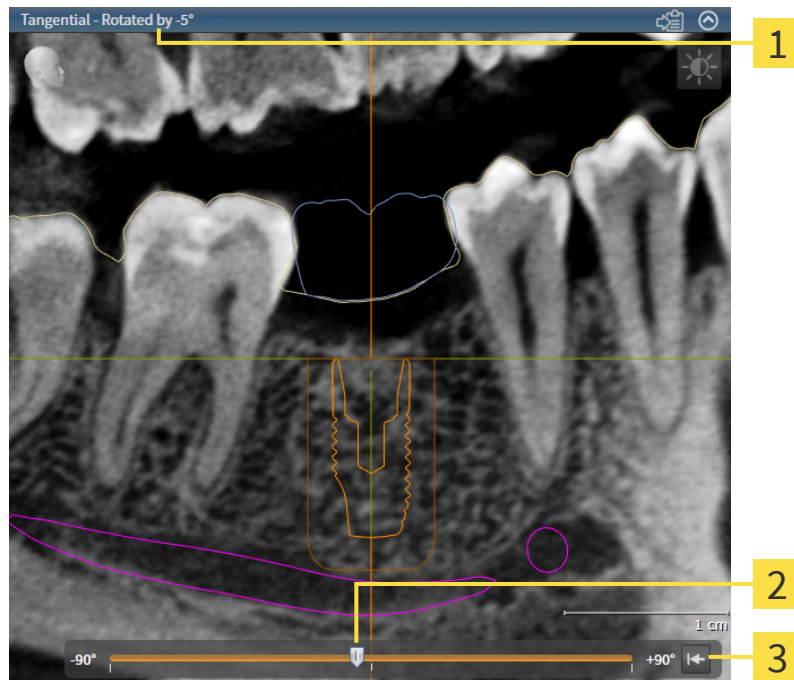|			
1	Currently set rotation	**3**	**Reset rotation** button
2	Slider for rotation adjustment		

☑ The **Implant-Aligned** workspace is already open. Information on this can be found in the section *Switching workspaces [▶Page 129]*.

1. Activate the implant about which you want to rotate the views by clicking on the implant in the **Objects** or in the views.

2. Activate the **Tangential** or **Cross-Sectional** views which you want to rotate about the active implant.

3. To adjust the rotation, move the slider to the right or to the left while pressing the mouse key until you reach the desired rotation. You can also change the rotation by clicking on the slider and using the **Right** and **Left** arrow keys.

► SICAT Implant simultaneously rotates the **Tangential** and **Cross-Sectional** views and shows the currently set rotation in the title bar of both views.

► SICAT Implant rotates the crosshair in the **Axial** view.

► SICAT Implant rotates the corresponding frames in the **3D** view.

> ℹ You can reset the rotation to 0° by clicking on the **Reset rotation** button.

27.12 SWITCHING OFF AND SWITCHING ON THE DISPLAY OF OPTICAL IMPRESSIONS IN COLOR

In the **Panorama** and **3D** views, 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 **Panorama** or **3D** view is already active. Information on this can be found in the section *Changing the active view [▶Page 135]*.

1. Click on the **Turn the colored display for optical impressions off** icon in the **View toolbar**.

   ▶ SICAT Implant 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 Implant switches from monochrome display to display in color.

> **i** If you switch the display of optical impressions in color in the **3D** view, the display mode will be switched in the **Panorama** view as well. This also applies vice versa.

27.13 RESETTING VIEWS

To reset all views, proceed as follows:

- ■ Click on the **Workspace toolbar** icon in the **Reset views**.

▶ SICAT Implant resets all views to the default values for zoom, panning, scrolling, moving the crosshairs and moving the **Inspection Window**.

▶ SICAT Implant resets the viewing direction of the **3D** view to the default value.

▶ SICAT Implant resets the tilt and rotation of views to 0°.

27.14 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 135]*.

- Click on the **Copy screenshot to clipboard (Ctrl+C)** icon in the title bar of the view.

▶ SICAT Implant copies a screenshot of the view 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.

28 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 151]*.

The following actions are available to configure the **3D** view:

- *Switching the display mode of the 3D view [▶Page 152]*

- *Configuring the active display mode of the 3D view [▶Page 153]*

- *Changing the clipping mode of the 3D view [▶Page 154]*

- *Pinning the clipping area [▶Page 156]*

You can also rotate the volume automatically. Information on this can be found in the section *Rotating volume automatically [▶Page 157]*.

28.1 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 Implant 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.

28.2 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 135]*.

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:
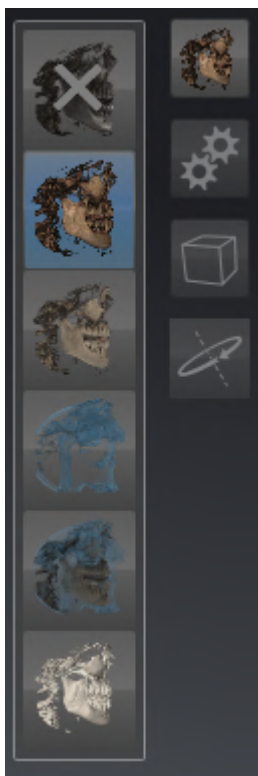
2. Click on the icon for the desired display mode.

   ► SICAT Implant 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.

28.3 CONFIGURING THE ACTIVE DISPLAY MODE OF THE 3D VIEW

> **ℹ** 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 135]*.

☑ 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 152]*.

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:
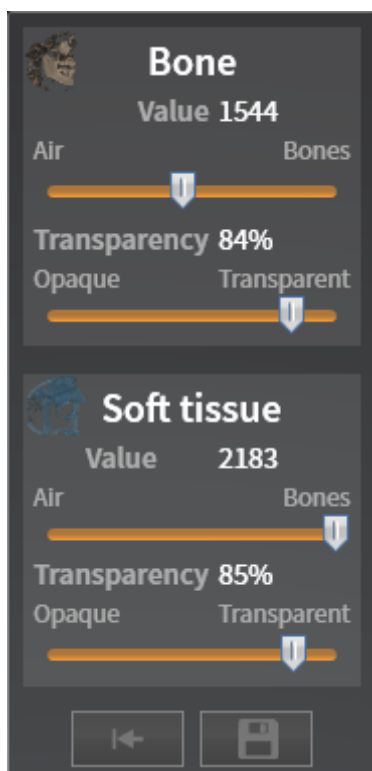
2. Move the slider you require.

   ▶ SICAT Implant adjusts the **3D** view according to the position of the slider.

3. 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.

28.4 CHANGING THE CLIPPING MODE OF THE 3D VIEW

In the **3D** view, you can temporarily cut away parts of the volume in order to better examine the remaining part or to better assess the position of planning objects in the volume („Clipping").

You can cut away the volume along one of the 2D slice views of the corresponding workspace and/or along an area around the focus point. Normally, the clipping area is synchronized with the other views. However, you can also pin the set clipping area. Further information is available in the section *Pinning the clipping area [*▶*Page 156].*

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 135].*

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 Implant 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.

Adjusting the clipping area by changing the viewing direction
If you cut away the volume along one of the 2D slice views of the corresponding workspace, you can influence which of the two parts of the volume is cut away by changing the viewing direction in the **3D** view. However, you can also pin the set clipping area. Further information is available in the section *Pinning the clipping area [*▶*Page 156]*.

Cropping jaws
To crop a jaw proceed as follows:

1. Select the **Clipping at current axial slice** clipping mode:

2. Change the viewing direction in the **3D** view so that you look at the desired jaw from the occlusal direction.

3. Scroll through the axial view until you have reached the occlusal plane.

4. Pin the currently set clipping area. Further information is available in the section *Pinning the clipping area [*▶*Page 156]*.

28.5 PINNING THE CLIPPING AREA

To pin the current clipping area which has been set in 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 135]*.

☑ You have selected a clipping mode in which part of the volume is temporarily clipped away. Information on this can be found in the section *Changing the clipping mode of the 3D view [▶Page 154]*.

1. In the **View toolbar**, click on the pin shown here.

   ► SICAT Implant pins the current clipping area.

2. In the **View toolbar**, click on the pin shown here.

   ► SICAT Implant unpins the current clipping area.

> **i**   If you select a different clipping mode, the clipping area is automatically unpinned.

28.6 ROTATING VOLUME AUTOMATICALLY

To automatically rotate the volume in the **3D** views of all workspaces, proceed as follows:

☑ The **3D** view of the open workspace is already active. Information on this can be found in the section *Changing the active view [▶Page 135]*.

1. Click on the **Rotate automatically** button.

   ► SICAT Implant starts to automatically rotate the volume about its main axis.

2. To stop automatic rotation, click on the **Rotate automatically** button again or anywhere in the **3D** view.

29 MANAGING PLANS

You can create several alternative treatment plans for a patient in a study. This allows you to quickly switch between these plans to compare them and determine the final surgical procedure plan. In addition, SICAT Implant automatically creates a copy of the opened plan with the status "Finalized", when you order a SICAT surgical guide, when you perform an export for a CEREC Guide and when you export the plan. In the "Finalized" status, no further modifications are possible.

A plan is always opened at all times during treatment planning. When a study is opened for the first time, a plan whose name includes the date and time is automatically created. All planning functions are based on the opened plan. For example, if you add a distance measurement, the measurement will be added to the opened plan. Plans that you reopen later or that you have previously imported have the same status as when the plans were closed or exported.

Managing the plans includes the following actions:

- *Switching plans [▶Page 118] and Opening plans [▶Page 160]*

- *Locking and unlocking plans [▶Page 161]*

- *Renaming plans [▶Page 162]*

- *Adding and changing plan descriptions [▶Page 163]*

- *Creating new plans [▶Page 164]*

- *Duplicating plans [▶Page 165]*

- *Removing plans [▶Page 166]*

- *Exporting [▶Page 167] and importing plans [▶Page 169]*

Further information about the **Plans** area in the **Object bar** can be found in the section *Switching and managing plans [▶Page 118]*.

OPENING THE "MANAGE PLANS" WINDOW

- In the **Plans** area, click on the **Manage Plans** icon.

▶ SICAT Implant opens the **Manage Plans** window:
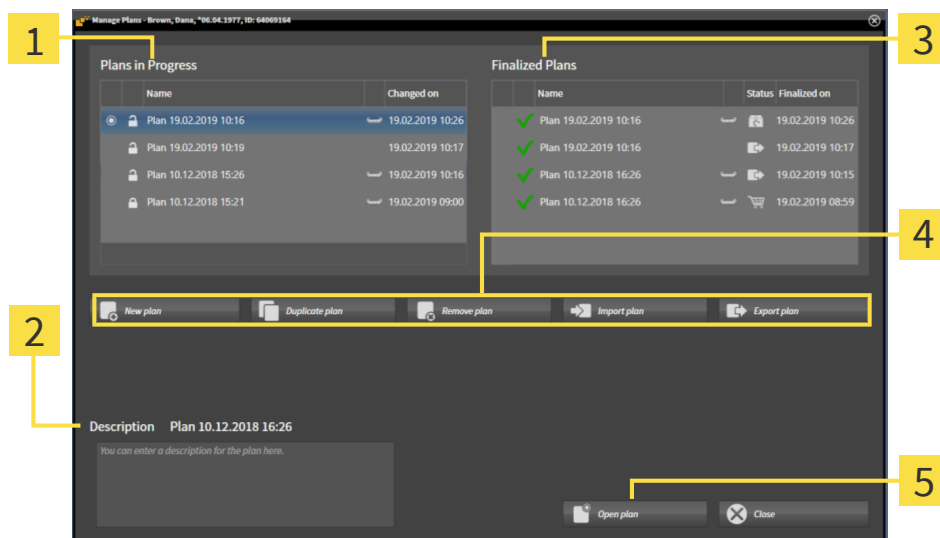
1	**Plans in Progress** area	**4**	Buttons for managing the plans
2	Plan description	**5**	**Open plan** button
3	**Finalized Plans** area		

The opened plan is selected and marked with the symbol ◉. Symbols for maxilla ▦ and mandible ▦ indicate in which jaws implants are planned.

The plans in the **Plans in Progress** area are sorted according to the change date. A plan in progress can have the status "Locked" 🔒 or "Unlocked" 🔓.

The plans in the **Finalized Plans** area are displayed sorted according to the **Finalized on** date. A finalized plan is indicated by the ✓ symbol. Finalized plans can have one of the following statuses:

- 🛒 "In the shopping cart"

- 🗐 "Ordered"/"Exported for CEREC Guide"

- 🡒 "Exported" (with **Export plan** button)

29.1 OPENING PLANS

1. In the **Plans** area, click on the **Manage Plans** icon.
   ► SICAT Implant opens the **Manage Plans** window. The currently opened plan is selected in the **Plans in Progress** or **Finalized Plans** area and marked with the symbol ⊚.

2. Click on the plan you want to open.

3. Click on the **Open plan** button.

► SICAT Implant saves and closes the previously opened plan.

► SICAT Implant opens the selected plan and closes the **Manage Plans** window.

> ℹ You can also open plans quickly by switching the plan shown in the workspace in the **Plans** area. Information on this can be found in the section *Switching and managing plans [▶Page 118]*

29.2 LOCKING AND UNLOCKING PLANS

You can lock plans to protect them against accidental editing or removal.

1. In the **Plans** area, click on the **Manage Plans** icon.

   ► SICAT Implant opens the **Manage Plans** window. The currently opened plan is already selected in the **Plans in Progress** or **Finalized Plans** area and marked with the symbol.

2. In the row of the desired plan in the **Plans in Progress** area, click on the symbol shown here.

   ► SICAT Implant locks the plan.

   ► The symbol changes to.

3. In the row of the desired plan in the **Plans in Progress** area, click on the symbol shown here.

   ► SICAT Implant unlocks the plan.

   ► The symbol changes to.

29.3 RENAMING PLANS

1. In the **Plans** area, click on the **Manage Plans** icon.

    ► SICAT Implant opens the **Manage Plans** window. The currently opened plan is already selected in the **Plans in Progress** or **Finalized Plans** area and marked with the symbol ⦿.

2. In the **Plans in Progress** area, click on the plan you want to rename. Only unlocked plans can be renamed.

3. Click on the name in the row of the corresponding plan.

    ► The name of the plan can now be edited.

4. Enter a name and confirm it. The name must not be empty.

► SICAT Implant applies the changed name when you leave the name field.

29.4 ADDING AND CHANGING PLAN DESCRIPTIONS

1. In the **Plans** area, click on the **Manage Plans** icon.

   ► SICAT Implant opens the **Manage Plans** window. The currently opened plan is already selected in the **Plans in Progress** or **Finalized Plans** area and marked with the symbol ⊚.

2. Click on the desired plan. You can only add or change a description for an unlocked plan.

3. Click in the **Description** field and enter a description.

► SICAT Implant applies the description when you leave the description field.

29.5 CREATING NEW PLANS

You can create a new plan in which no diagnosis objects or planning objects exist yet.

1. In the **Plans** area, click on the **Manage Plans** icon.

   ► SICAT Implant opens the **Manage Plans** window.

2. Click on the **New plan** button.

   ► SICAT Implant adds the new plan with the current date as creation date in the **Plans in Progress** area and selects the plan.

3. **Opening the new plan:** Click on the **Open plan** button.

   ► SICAT Implant opens the new plan and closes the **Manage Plans** window.

29.6 DUPLICATING PLANS

You can duplicate an existing plan with all diagnosis objects or planning objects. You can use this function to make changes, for example, based on a finalized plan. The plan to be duplicated can be locked, unlocked, or finalized. The duplicate is always unlocked.

1. In the **Plans** area, click on the **Manage Plans** icon.

   ► SICAT Implant opens the **Manage Plans** window.

2. Click on the plan you want to duplicate.

3. Click on the **Duplicate plan** button.

   ► SICAT Implant adds the duplicate in the **Plans in Progress** area and selects it. Duplicated plans from the **Finalized Plans** area will be stored in the **Plans in Progress** area as well.

4. **To open duplicate:** Click on the **Open plan** button.

   ► SICAT Implant opens the duplicate.

29.7 REMOVING PLANS

1. In the **Plans** area, click on the **Manage Plans** icon.

   ► SICAT Implant opens the **Manage Plans** window. The currently opened plan is selected in the **Plans in Progress** or **Finalized Plans** area and marked with the symbol ◉.

2. Click on the plan you want to remove. Locked or finalized plans cannot be removed.

3. Click on the **Remove plan** button and confirm the security prompt.

► SICAT Implant removes the plan. When you remove the last plan of the study, SICAT Implant automatically creates a new plan.

29.8 EXPORTING PLANS

> ⚠️
> **CAUTION**
>
> **An Incorrect plan could result in incorrect diagnosis and treatment.**
>
> Make sure that you select the correct plan for the export.

You can, for example, export a plan to forward the planning, ask for a second opinion or send a corrected plan to SICAT Support. Use this function only if both you and your recipient have identical 3D X-ray data.

> ℹ️
>
> If your recipient does not yet have access to the same 3D X-ray data in SICAT Suite, you first need to use the data export function in your SICAT Suite to export 3D X-ray data. For more information, see *Data export [▶Page 263]*. Your recipient should use the data import feature in SICAT Suite.
>
> When a 3D X-ray data export is performed, the plans are automatically exported with the data. Thus, you no longer need to follow the below steps for exporting plans if you use the data export function. You can use the function described here to export additional plans later on that are based on identical 3D X-ray data available in your SICAT Suite and your recipient's SICAT SUITE.

1. In the **Plans** area, click on the **Manage Plans** icon.
   ► SICAT Implant opens the **Manage Plans** window. The currently opened plan is already selected in the **Plans in Progress** or **Finalized Plans** area and marked with the symbol ◎.

2. Click on the plan you want to export.

3. Click on the **Export plan** button.
   ► In the bottom part of the **Manage plans** window, SICAT Implant shows the **Export plan** area which contains export settings.
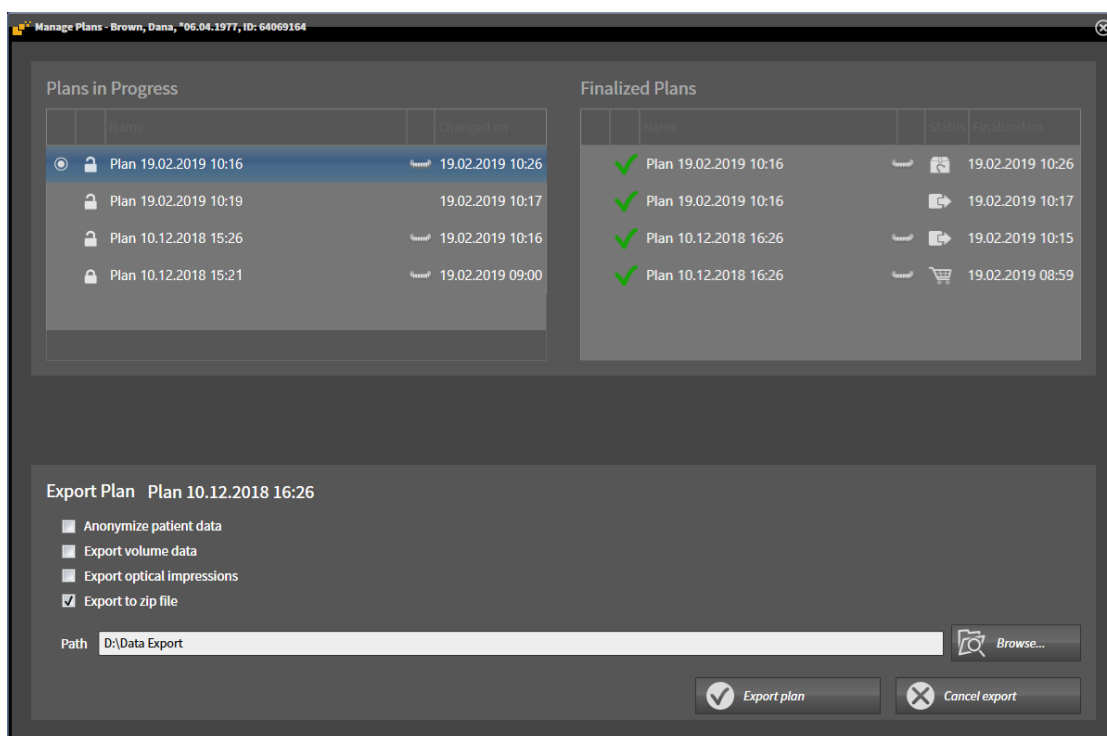
4. Enable one or more of the following options if required:
   – **Anonymize patient data** to anonymize the patient data in the exported plan.
   – **Export volume data** to export the 3D X-ray data with the plan.
   – **Export optical impressions** to export the optical impressions of the plan as well.
   – **Export to zip file** to compress the export data to obtain a smaller size file.

5. In the **Path** field, enter the directory to which you want to export the plan. Alternatively, you can select a directory by clicking on the **Browse** button.

6. Click on **Export plan**.

► SICAT Implant saves the exported plan as a SIMPP file together with other export files if no volume data is exported.

► SICAT Implant saves the exported plan as a SIMPD file together with other export files if volume data is exported.

► SICAT Implant saves the selected data compressed in a ZIP file, if the option **Export to zip file** is enabled.

► SICAT Implant creates a copy of the original plan that you have selected for the export with the status "Exported" in the **Finalized Plans** area.

► SICAT Implant shows a message after completion of the export.

> If you enable the option **Export volume data** and thus export the plan together with the 3D X-ray data as a SIMPD file, due to technical reasons, it is not possible to import the 3D X-ray data exported in this way using the function for importing plans in your recipient's SICAT Suite. However, your recipient can use the SICAT Suite data import function to import the plan together with the 3D X-ray data.

> You can duplicate the plan that is copied for export and stored in the **Finalized Plans** area. This enables you to continue treatment planning at a later time on the basis of the exported plan.

29.9 IMPORTING PLANS

You can import a plan that was previously exported with SICAT Implant. SICAT Implant imports all optical impressions in the plan to be imported that do not yet exist on your system.

> With this function it is not possible to import 3D X-ray data that is included in a SIMPD file of the plan to be imported.
>
> If you want to include 3D X-ray data of the plan to be imported in the import, you need to use the data import function. Further information is available in the section *Data import [▶Page 86]*.
>
> With the data import function, plans are imported as well. Thus, you no longer need to follow the below steps for importing plans if you use the data import function. You can use the function described here to import additional plans later on that are based on identical 3D X-ray data available into your SICAT Suite and your recipient's SICAT SUITE.

1. In the **Plans** area, click on the **Manage Plans** icon.
   ► SICAT Implant opens the **Manage Plans** window.

2. Click on the **Import plan** button.
   ► SICAT Implant opens a Windows Explorer window.

3. Go to the directory of the SIMPP or ZIP file to be imported, select the file and click on **Open**.
   ► The imported plan will be added to the **Plans in Progress** area. If a plan with an identical name already exists, a number in brackets is added to the name of the imported plan, such as (2).
   ► If SICAT Implant cannot import the plan, SICAT Implant displays an error message containing further information.

4. **Open the imported plan:** Click on the **Open plan** button.
   ► SICAT Implant opens the imported plan.

30 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:
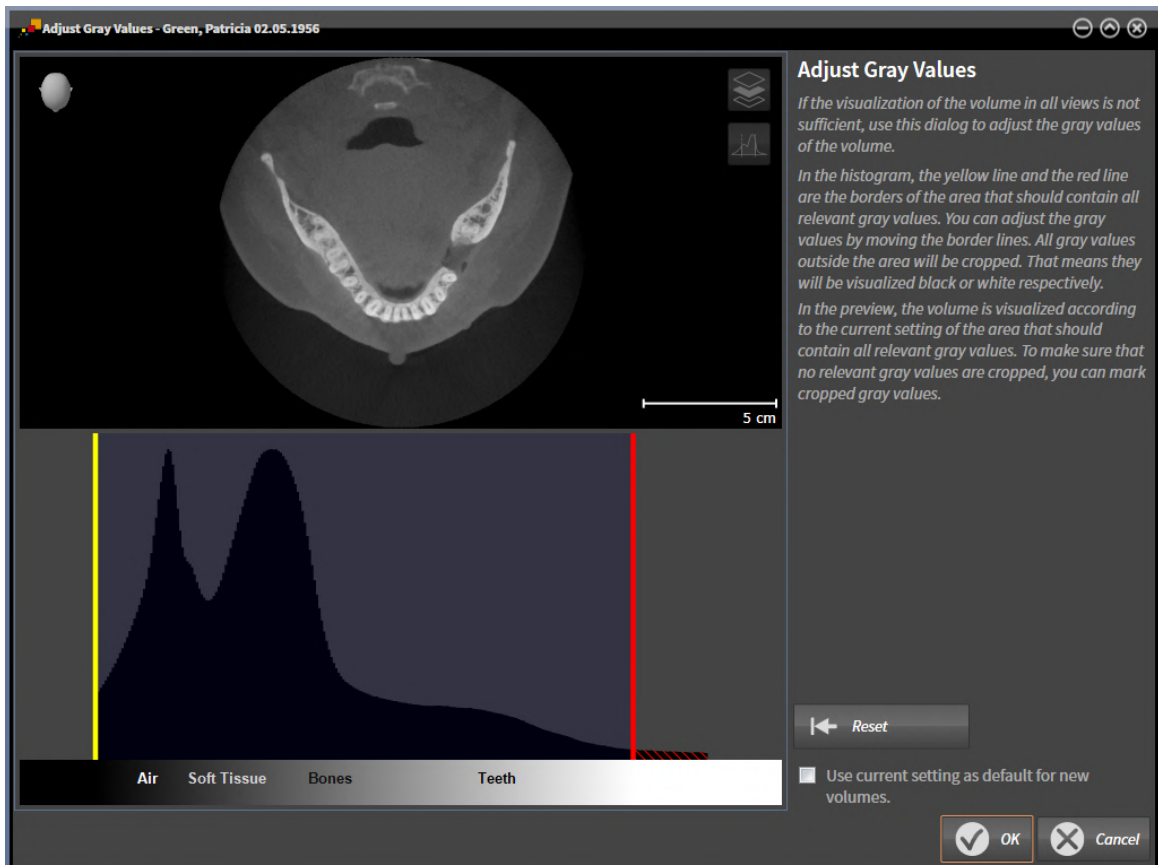
The **Adjust Gray Values** window has two parts:

- 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 Implant cuts all gray scale values outside the area. This means that the software shows them either in black or white.

SICAT Implant 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 Implant 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 172]*.

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 137]*.

You can also adjust the display of the **3D** view. For further information see *Switching the display mode of the 3D view [▶Page 152], Configuring the active display mode of the 3D view [▶Page 153]* and *Changing the clipping mode of the 3D view [▶Page 154].*

30.1 ADJUSTING GRAY SCALE VALUES

General information on gray scale values can be found in the section *Gray scale values [▶Page 170]*.

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:
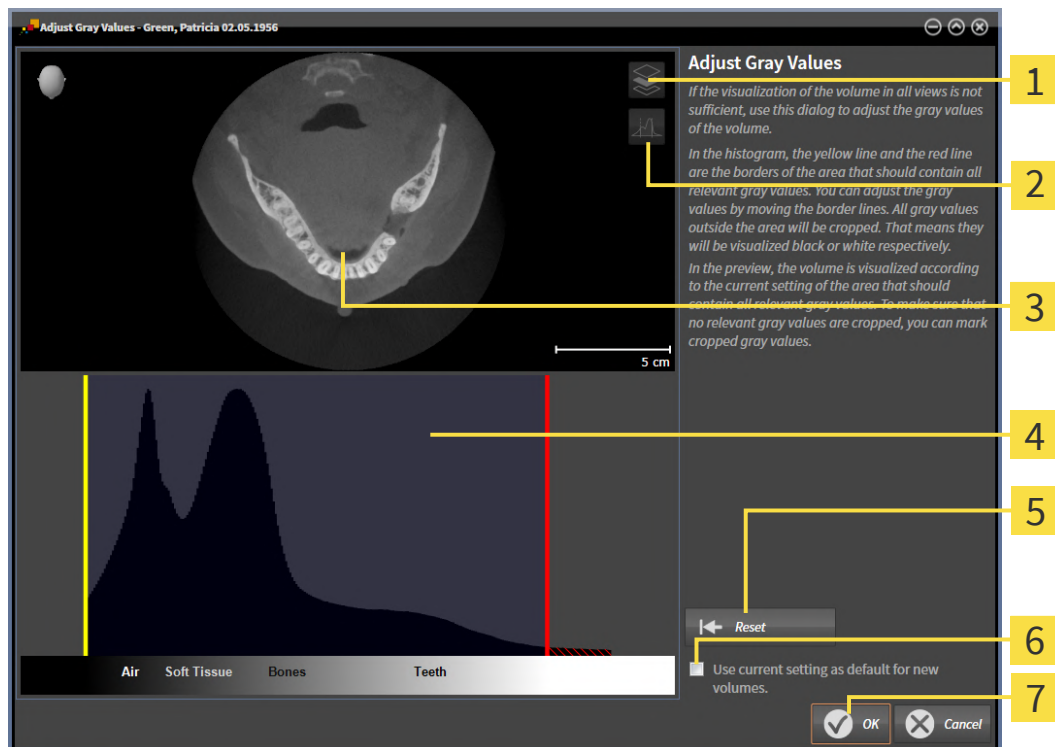
1	**Enable coronal projection mode** icon or **Enable axial slices mode** icon
2	**Unmark cropped gray values** icon or **Mark cropped gray values** icon
3	**Axial** slice view or **Coronal** projection view
4	Histogram
5	**Reset** button
6	**Use current setting as default for new volumes** check box
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 Implant adjusts all gray scale values in the **Axial** slice view accordingly.

► SICAT Implant 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 Implant adjusts all gray scale values in the **Axial** slice view accordingly.

► SICAT Implant 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 Implant displays the volume with the correspondingly adjusted gray scale values in all views.

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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**.

---

31 ADJUSTING VOLUME ORIENTATION AND PANORAMIC REGION

> **i** If an adjustment of the volume orientation is required, perform this when start-
> ing 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 Implant, SICAT Implant 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 176]*.

PANORAMIC REGION

SICAT Implant 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.
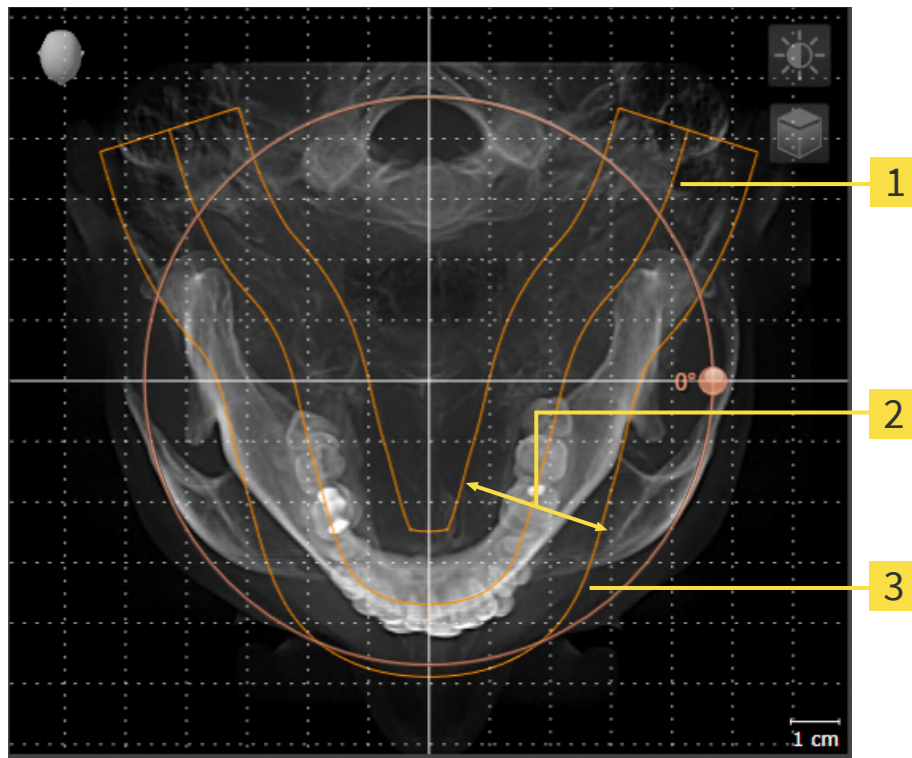
1   Panoramic curve

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 Implant, SICAT Implant 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 181]*.

31.1 ADJUSTING THE VOLUME ORIENTATION

General information on volume orientation can be found in the section *Adjusting volume orientation and panoramic region [*▶*Page 174]*.

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:
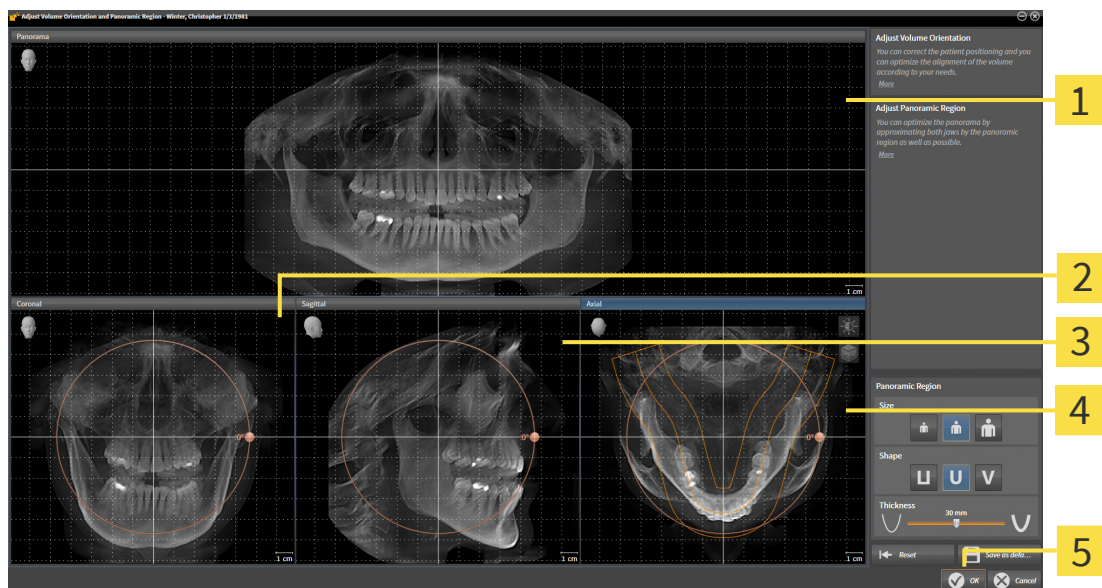
1	**Panorama** view	**4**	**Axial** view with **Rotation** slider
2	**Coronal** view with **Rotation** slider	**5**	OK button
3	**Sagittal** view with **Rotation** slider		

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 Implant 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:
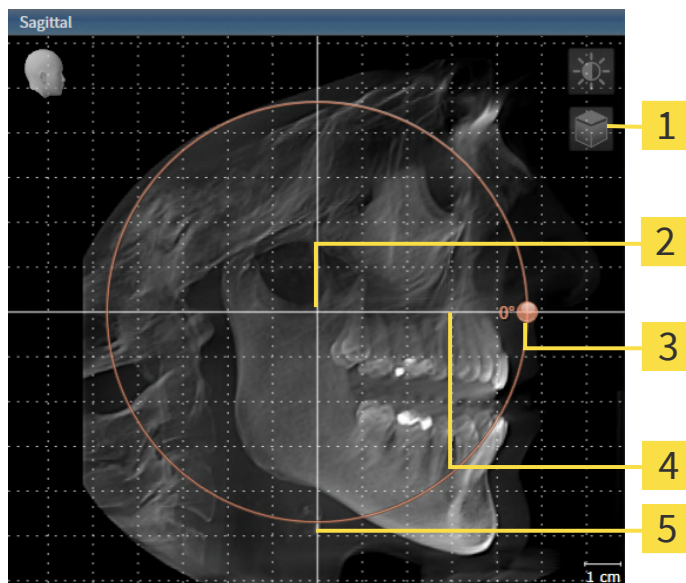
1 **Enable slices mode** icon or **Enable projection mode** icon	4 Horizontal reference line
2 Center of rotation	5 Vertical reference line
3 **Rotation** slider	

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 Implant 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:
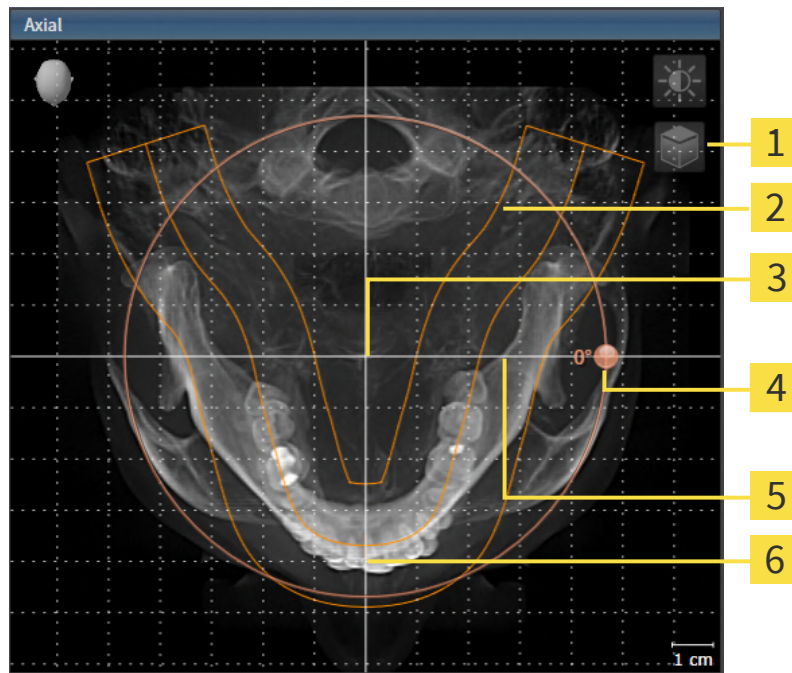
1   **Enable slices mode** icon or **Enable projection mode** icon

2   Panoramic region

3   Center of rotation

4   **Rotation** slider

5   Horizontal reference line

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 Implant 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 Implant 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 Implant, SICAT Implant 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 Implant saves the altered volume orientation and displays the volume with the corresponding orientation in all views.

<div style="border: 1px solid black; padding: 10px;">

i

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 137]*.

- You can zoom in the views. SICAT Implant 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.

</div>

31.2 ADJUSTING THE PANORAMIC REGION

General information on the panoramic region can be found in the section *Adjusting volume orientation and panoramic region [*▶*Page 174]*.

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:
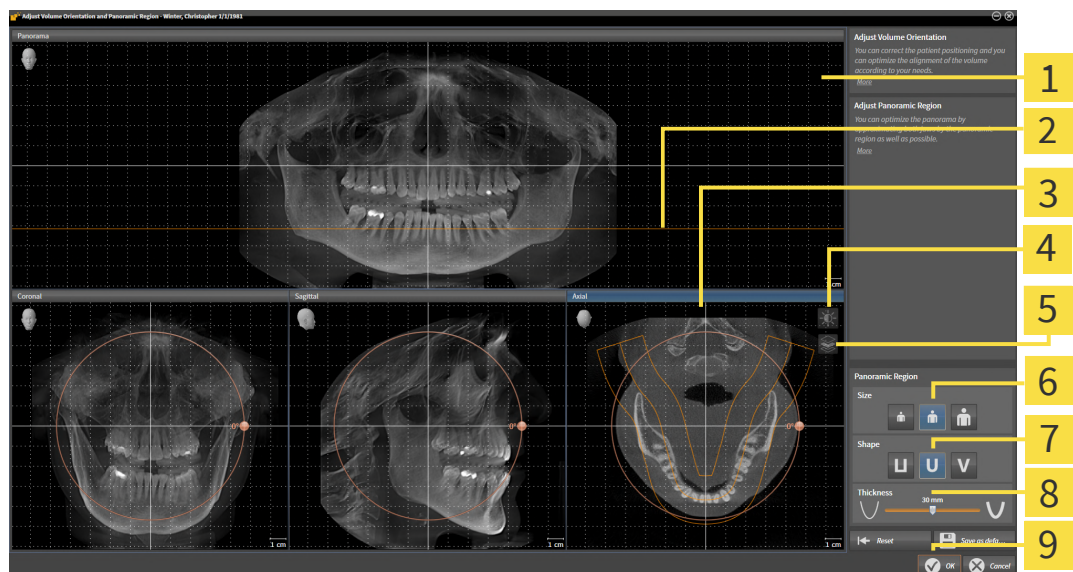
1	**Panorama** view	**6**	**Size** buttons
2	Axial reference line	**7**	**Shape** buttons
3	**Axial** view with **Rotation** slider	**8**	**Thickness** slider
4	**Adjust brightness and contrast** icon	**9**	**OK** button
5	**Enable projection mode** icon or **Enable slices mode** icon		

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 Implant 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 Implant 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. Select the **Size** of the panoramic region that best reflects the mandible of the patient by clicking on the corresponding **Size** button.

2. Select the **Shape** of the panoramic region that best reflects the mandible of the patient by clicking on the corresponding **Shape** button.

3. 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.

4. To save your changes, click **OK**.

▶ SICAT Implant 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 137]*.
>
> - You can zoom in the views. SICAT Implant 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.

32 DISTANCE AND ANGLE MEASUREMENTS

SICAT Implant 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 Implant will also add it to the **Measurements** group in the **Object browser**.

The following actions are available for measurements:

- *Adding distance measurements [▶Page 185]*

- *Adding angle measurements [▶Page 186]*

- *Moving measurements, individual measuring points and measured values [▶Page 188]*

- Activating, hiding and showing measurements - Information on this can be found in the section *Managing objects with the object browser [▶Page 119]*.

- 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 121]*.

32.1 ADDING DISTANCE MEASUREMENTS
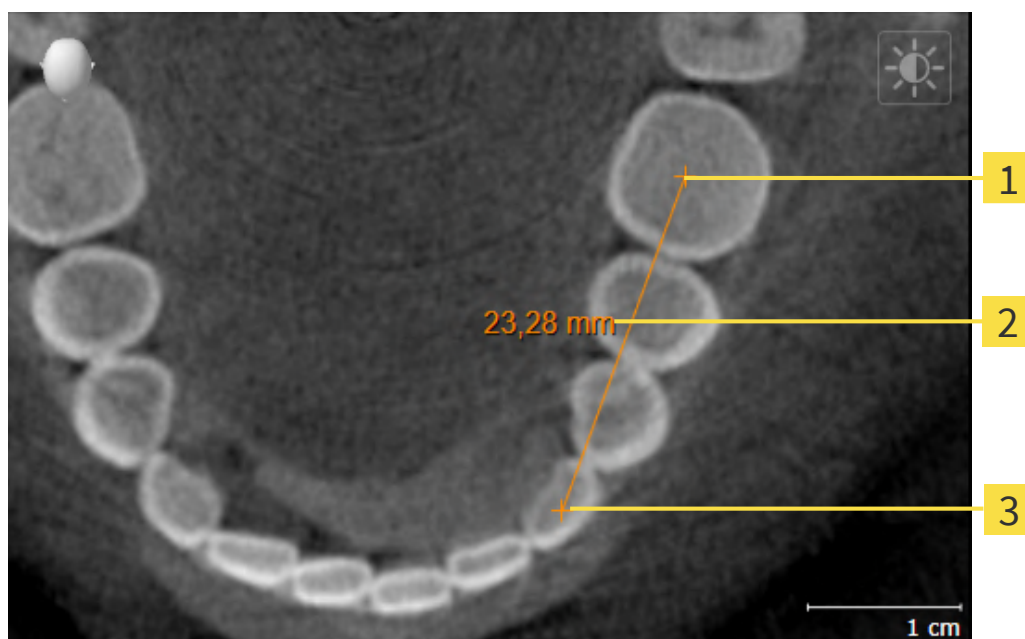
1 Starting point

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 Implant 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 Implant illustrates the starting point using a small cross.
    ► SICAT Implant shows a distance line between the starting point and the mouse pointer.
    ► SICAT Implant 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 Implant illustrates the end point using a small cross.

> 🛈 You can cancel adding measurements at any time by pressing **ESC**.

32.2 ADDING ANGLE MEASUREMENTS

1 Starting point

2 Measured value

3 Vertex

4 End point

To add an angle measurement, proceed as follows:
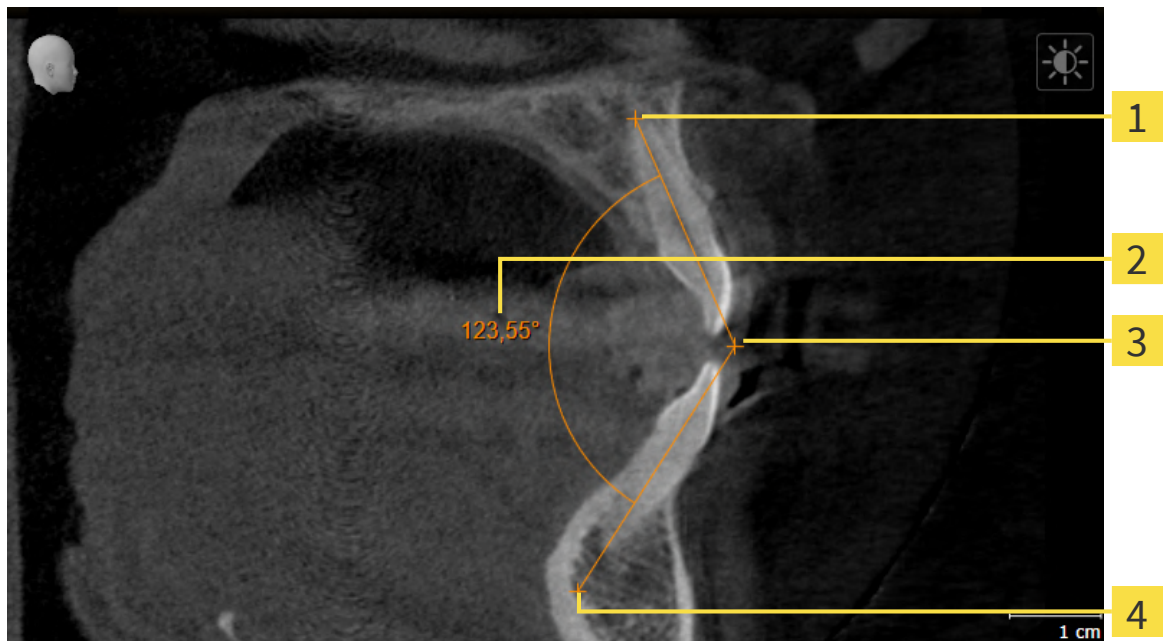
☑ The **Diagnose** workflow step is already expanded.

1. In the **Diagnose** workflow step, click the **Add angle measurement (A)** icon.
   ► SICAT Implant 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 Implant illustrates the starting point using a small cross.
   ► SICAT Implant 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 Implant illustrates the vertex using a small cross.
   ► SICAT Implant shows the second arm of the angle measurement by a line from the vertex to the mouse pointer.
   ► SICAT Implant 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 Implant illustrates the end point using a small cross.

> **i** You can cancel adding measurements at any time by pressing **ESC**.

► SICAT Implant illustrates the end point using a small cross.

32.3 MOVING MEASUREMENTS, INDIVIDUAL MEASURING POINTS AND MEASURED VALUES

MOVING MEASUREMENTS

To move a measurement, proceed as follows:

☑ SICAT Implant shows the desired measurement already in a 2D slice view. For further information about this see *Managing objects with the object browser [▶Page 119]* and *Managing objects with the object toolbar [▶Page 121]*.

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 Implant maintains the current position of the measurement.

MOVING INDIVIDUAL MEASURING POINTS

To move an individual measuring point, proceed as follows:

☑ SICAT Implant shows the desired measurement already in a 2D slice view. For further information about this see *Managing objects with the object browser [▶Page 119]* and *Managing objects with the object toolbar [▶Page 121]*.

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 Implant maintains the current position of the measuring point.

MOVING MEASURED VALUES

To move a measured value, proceed as follows:

☑ SICAT Implant shows the desired measurement already in a 2D slice view. For further information about this see *Managing objects with the object browser [▶Page 119]* and *Managing objects with the object toolbar [▶Page 121]*.

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 Implant shows a dotted line between the measured value and the corresponding measurement.

4. Release the left mouse button.

► SICAT Implant maintains the current position of the measured value.

> **i** After you have moved the value of a measurement, the SICAT Implant will define the value at an absolute position. To position the value again relative to the measurement, double click on the value.

33 OPTICAL IMPRESSIONS

SICAT Implant can overlay (register) matching 3D X-ray data and optical impressions for the same patient. Prosthetics proposals that may be available in addition to the optical impressions are also overlaid in this process.

The overlaid representation provides additional information for planning and implementation. Digital prosthetics proposals allow for a prosthetics-based implant planning enabling you to consider the planned prosthetic restoration in addition to the patient's anatomy according to the 3D X-ray data. In the overlay representation the gingiva contour is better visible as well.

The overlay also allows you to use surgical guides based on optical impressions. Further information is available in the section *Supported surgical guides and sleeve systems [▶Page 49]*.

You can import several CAD/CAM data records with optical impressions and restorations for each plan, e. g. to compare two different optical impressions. CAD/CAM cases are created in the object browser for imported CAD/CAM data records. For more information, see *SICAT Implant objects [▶Page 122]*.

To use optical impressions, proceed as follows:

1. Import of optical impressions using the following import methods:

   – *Downloading optical impressions from the Hub [▶Page 192]*

   – *Importing optical impressions from a file [▶Page 196]*

   – *Re-using optical impressions from SICAT applications [▶Page 199]*

2. Registration (overlay) of the optical impressions with 3D X-ray data: *Registering and checking optical impressions [▶Page 201]*

> **i** Registration is not required if optical impressions from a SICAT application are reused.

SICAT Implant supports the following data formats for optical impressions and restorations:

- SIXD data records that contain an optical impression of the maxilla, the mandible or both. Optionally, the optical impressions can contain one or more restorations as well as intended implant positions. Use this format if you are using CEREC software version 5.1 or higher.

- STL data records* that contain an optical impression of the maxilla **or** the mandible. Restorations are not supported. Use this format if you are using another CAD/CAM system that supports the STL format.

- SSI data records that contain an optical impression of the maxilla, the mandible or both. Optionally, an optical impression can contain a restoration for one tooth or for several adjacent teeth. Use this format if you are using CEREC software in a version that is lower than 5.1 or if you are using the inLab software.

*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 198]*.

The following actions are available for optical impressions and restorations:

- Activating, hiding and showing optical impressions and restorations: *Managing objects with the object browser [▶Page 119]*

- Focusing on and removing optical impressions and restorations: *Managing objects with the object toolbar [▶Page 121]*

- Setting the display of optical impressions in color: *Switching off and switching on the display of optical impressions in color [▶Page 147]*

33.1 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.

33.1.1 DOWNLOADING OPTICAL IMPRESSIONS FROM THE HUB

You can download optical impressions and any restorations that may exist in SIXD format from the Hub and import them into SICAT Implant.

☑ The connection to the Hub is established. Information on this can be found in the section *Activating and deactivating Hub use [▶ Page 272]*.

☑ The license for using the Hub is activated. Information on this can be found in the section *Licenses [▶ Page 63]*.

☑ The **Prepare** workflow step is expanded.

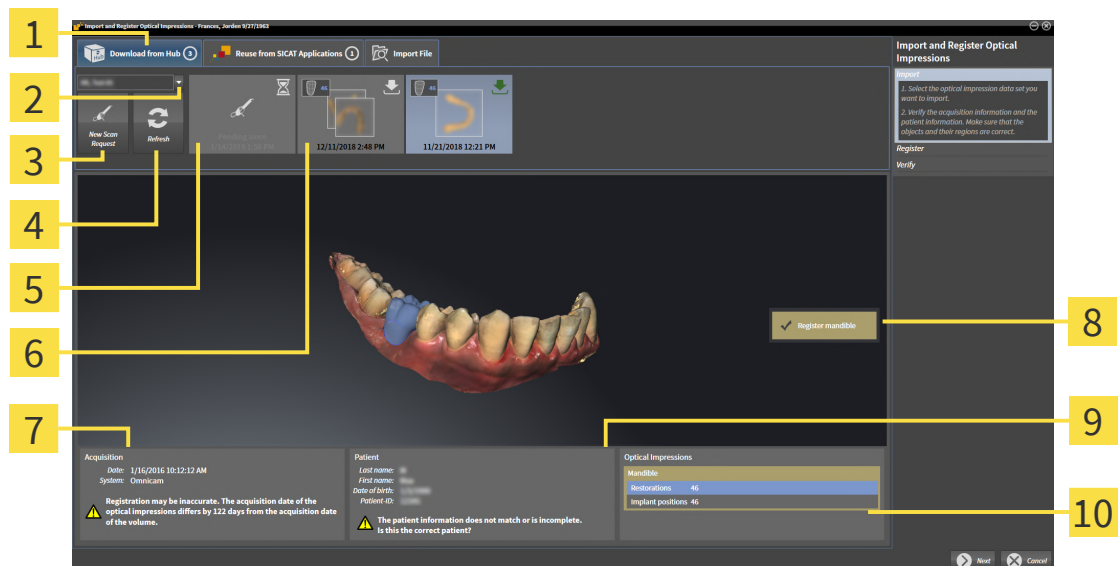1. Click on the **Import and Register Optical Impressions** icon.

   ► SICAT Implant 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 Implant displays outstanding scan jobs and available optical impressions.

4. Click on the desired optical impressions.

1	**Download from Hub** tab	**6**	Available optical impressions with status: ▨ A restoration with indication of the tooth or several restorations with indication of the teeth ⬇ 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

▶ SICAT Implant downloads the optical impressions if the impressions have not already been downloaded. After the impressions have been downloaded, SICAT Implant displays the impressions in the **3D** view.

5. Check the selection for registration.

6. Check whether the scan information and patient information match.

7. Check the jaws with associated restorations and intended implant positions in the **Optical Impressions** area.

8. Click **Next**.

   ▶ If the patient data in the 3D X-ray scan and in the optical impressions differ,SICAT Implant will open the **Different Patient Information** window:

9. Compare the patient information. If you are sure that, despite different patient information, the optical impressions match the current patient, click on the **Yes** button.

   ▶ The **Register** step opens for the first optical impression: Follow the steps in section *Registering and checking optical impressions [*▶*Page 201]*.

> ℹ️ If you select optical impressions with two jaws for importing and it is currently foreseeable that you will register the second jaw, for example, for another application you can already select the second jaw for registration. You can change the jaw selection for registration by checking or unchecking the box for the maxilla or mandible.

> ℹ️ 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.

- If the desired optical impressions are not displayed, you can refresh the overview by clicking on the **Refresh** button. Or you can send a scan request for recording the optical impressions to the Hub. Information on this can be found in the section *Creating a scan request for an optical impression [▶Page 195]*.

- 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 272]*.

- 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 63]*.

33.1.1.1 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 272]*.

☑ The license for using the Hub is activated. Information on this can be found in the section *Licenses [▶Page 63]*.

☑ 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 Implant displays outstanding scan jobs and available optical impressions.

4. Click on the **New Scan Request** icon.

   ► SICAT Implant displays the **New Scan Request** window. You can now define specifications for the scan request.

5. Select a dentist.

6. Determine the prosthetic positions by clicking on the tooth positions in the mandible and maxilla, respectively.

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 Implant 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.

33.1.2 IMPORTING OPTICAL IMPRESSIONS FROM A FILE

You can import one or more files with optical impressions for each plan.

☑ 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.
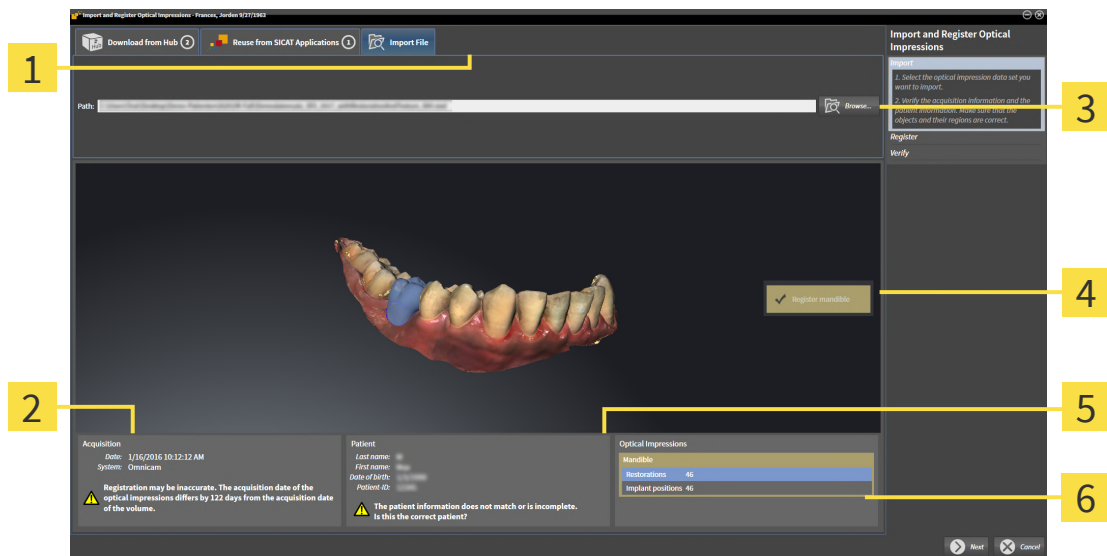
1	**Import File** tab	**4**	Selection for registration
2	Scan information	**5**	Patient information
3	**Browse** button	**6**	**Optical Impressions** area

3. Click on the **Browse** button.

4. In the **Open Optical Impression File** window, switch to the desired file with the optical impressions file, select the file and click on **Open**.

    ▶ SICAT Implant 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 Implant 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 198]*.
    Then, you can select another STL file with the maxilla or mandible that is still missing and adjust the assignment and orientation of the jaw. Then, continue with the next step.

6. Check the selection for registration.

7. Check the scan information and patient information.

8. Check the jaws with associated restorations and intended implant positions in the **Optical Impressions** area.

9. Click **Next**.

▶ If the patient data in the 3D X-ray scan and in the optical impressions differ, SICAT Implant will open the **Different Patient Information** window:
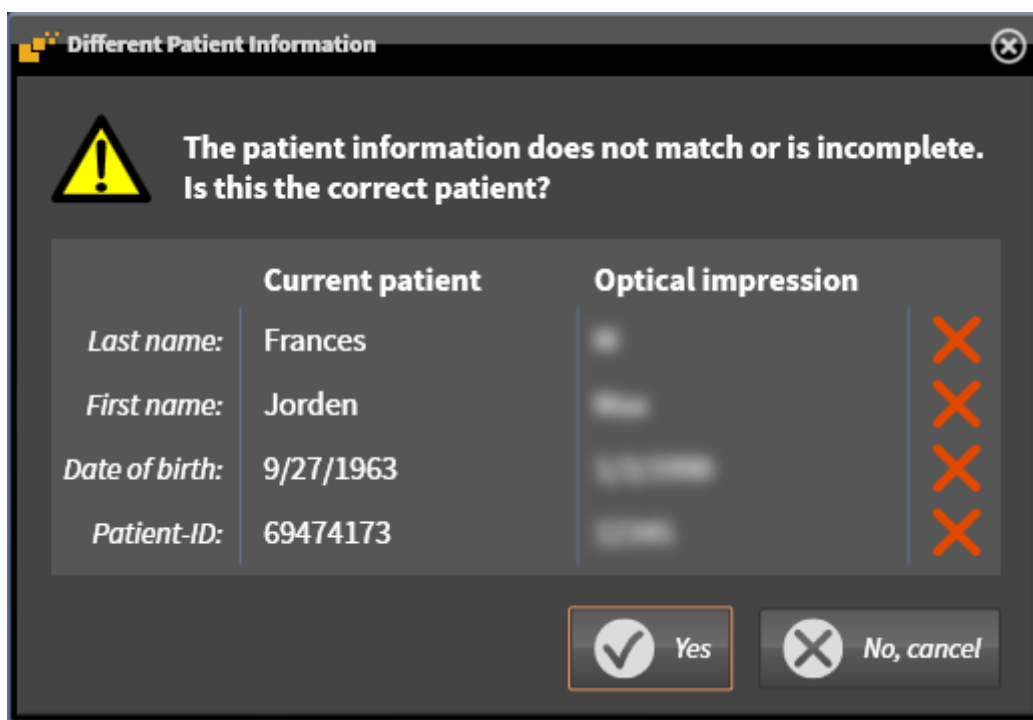
10. Compare the patient information. If you are sure that, despite different patient information, the optical impressions match the current patient, click on the **Yes** button.

▶ The **Register** step opens for the first optical impression: Follow the steps in section *Registering and checking optical impressions [*▶*Page 201]*.

	If you select optical impressions with two jaws for importing and it is currently foreseeable that you will register the second jaw, for example, for another application you can already select the second jaw for registration. You can change the jaw selection for registration by checking or unchecking the box for the maxilla or mandible.

|	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.

33.1.2.1 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 196]*.

   ▶ The **STL import wizard** window opens:
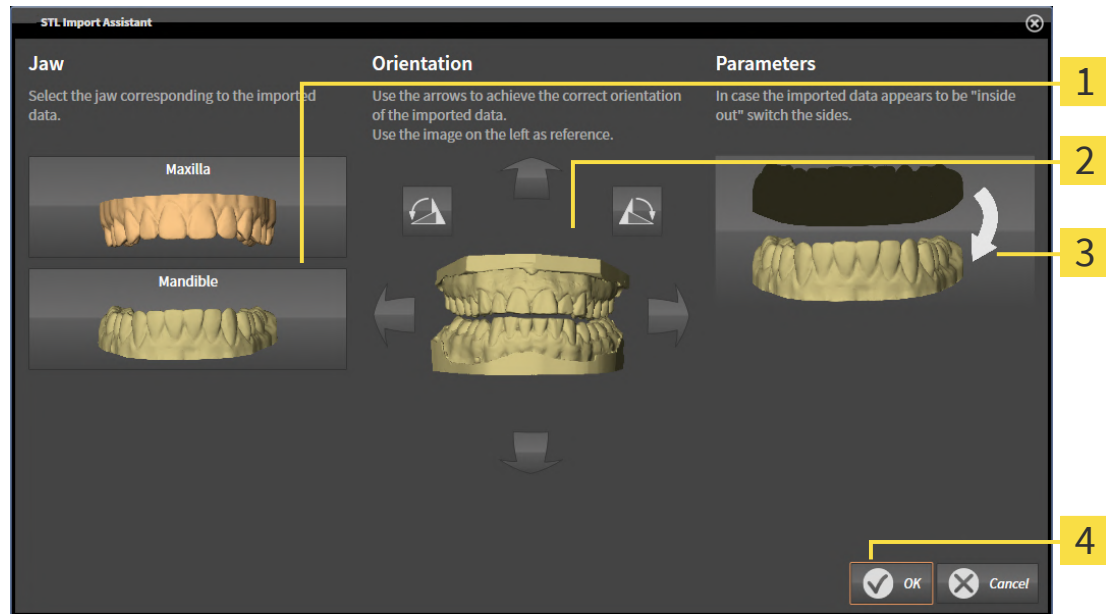
1	Selection of the jaw	3	Switching inside and outside
2	Changing the orientation		

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 Implant automatically attributes the second STL file to the other jaw.

   ▶ SICAT Implant 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 196]*.
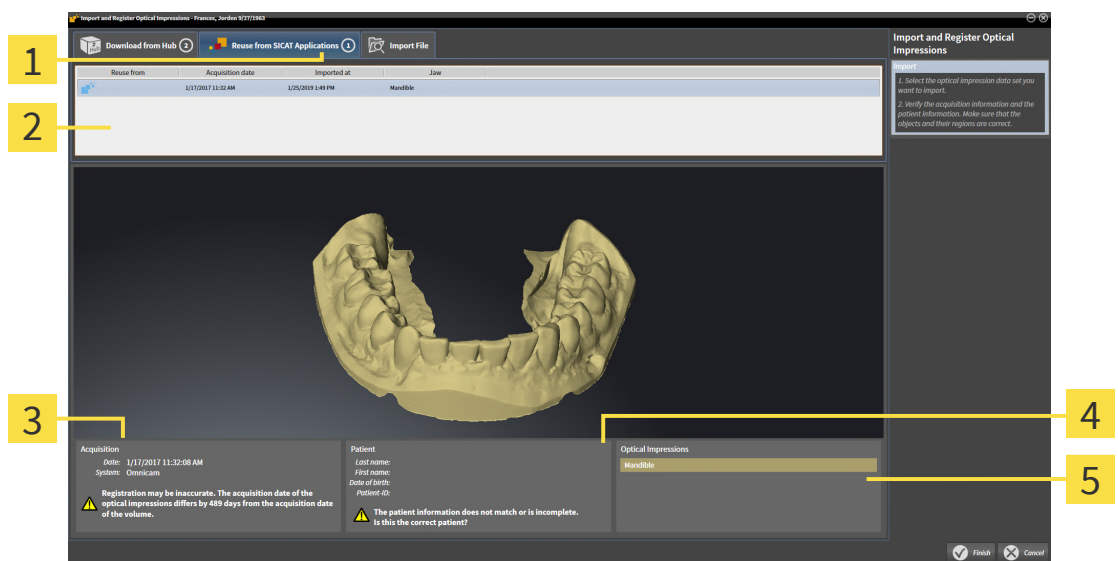
33.1.3 RE-USING OPTICAL IMPRESSIONS FROM SICAT APPLICATIONS

You can re-use optical impressions from a SICAT application.

☑ You have already imported suitable optical impressions for the opened study in a SICAT application, which you have not yet used in SICAT Implant.

☑ 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 impressions that you want to re-use.

   ► SICAT Implant displays the optical impressions 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 with associated restorations and intended implant positions in the **Optical Impressions** area.

6. Click on the **Finish** button.

► SICAT Implant closes the **Import and Register Optical Impressions** wizard.

► SICAT Implant adds the selected optical impressions and any restorations that may be available to the **Object browser**.

► SICAT Implant displays the selected optical impressions and any restorations that may be available.

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.

33.2 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.
ℹ️	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**.
ℹ️	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.
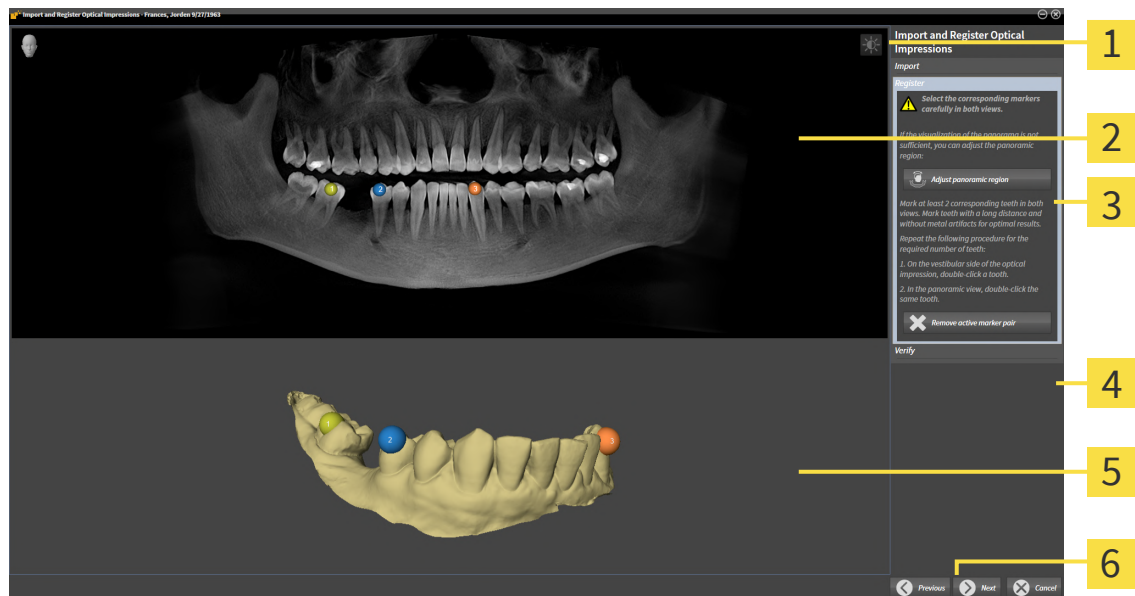
1	**Adjust brightness and contrast** icon	**4**	**Remove active marker pair** button
2	**Panorama** view	**5**	**3D** view which shows the first optical impression
3	**Adjust panoramic region** button	**6**	**Next** button

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. If the optical impression covers at least 3/4 of the arch, mark at least **three** matching teeth.

   ▶ Markings with different colors and numbers in both views will display corresponding teeth in the optical impression.

2. Click **Next**.

   ▶ SICAT Implant calculates the registration of the optical impression with the X-ray data.

▶ The **Verify** step opens:
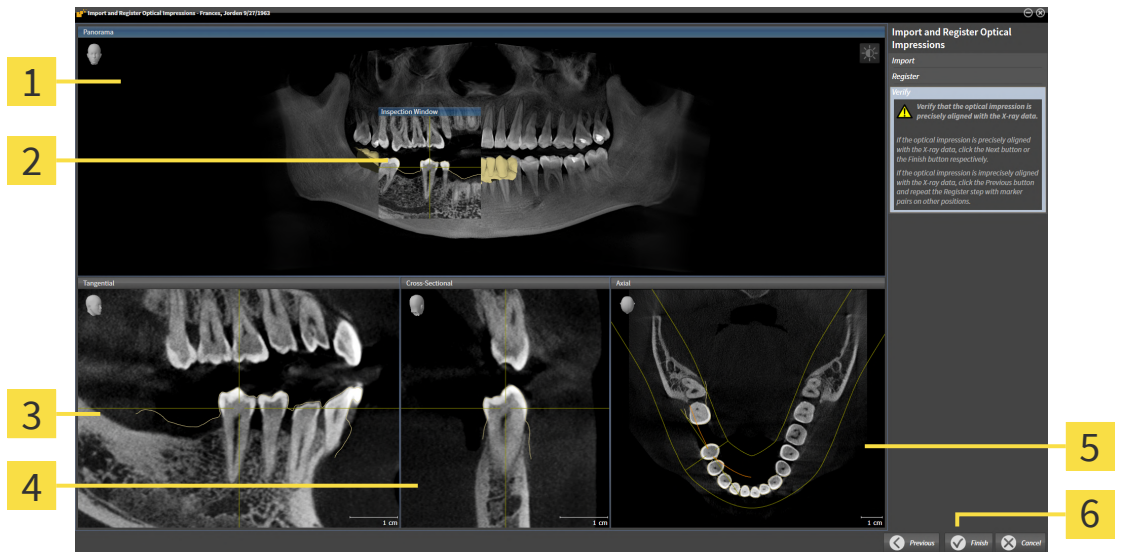
1	**Panorama** view	**4**	**Cross-Sectional** view
2	**Inspection Window**	**5**	**Axial** view
3	**Tangential** view	**6**	**Finish** button

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 with the X-ray data and you have selected two optical impressions for registration, click on the **Next** button. Repeat the previous steps for the second optical impression.

6. If the optical impression selected for registration is precisely aligned with the X-ray data, click on the **Finish** button.

▶ SICAT Implant closes the **Import and Register Optical Impressions** wizard.

▶ SICAT Implant adds the selected optical impressions and any restorations that may be available to the **Object browser**.

▶ SICAT Implant displays the registered optical impressions and any restorations that may be available.

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 137]*.

- 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 181]*.

- 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**.

34 MARKING AND ADJUSTING MANDIBULAR NERVES

SICAT Implant helps you to maintain a sufficient safety distance to the mandibular nerves during implant planning.

If you are planning implants in the posterior region of the mandible, mark the corresponding mandibular nerve or both mandibular nerves in the 3D X-ray data. Marking is done by entering a sequence of points (nerve points) which SICAT Implant automatically overlays with a tube.

After marking, you can clearly see the mandibular nerves in all views during implant planning. In addition, you will be warned if an implant violates the safety distance to the mandibular nerves. For more information, see *Distance warnings [▶Page 224]*.

The following functions are available for marking and adjusting mandibular nerves:

- *Marking mandibular nerves [▶Page 206]*

- Activating, hiding and showing nerves - Information on this can be found in the section *Managing objects with the object browser [▶Page 119]*.

- Focusing on nerves, removing nerves and undoing and redoing nerve actions – Information on this can be found in the section *Managing objects with the object toolbar [▶Page 121]*.

- *Moving, adding and removing nerve points [▶Page 208]*

- *Changing nerve diameters [▶Page 209]*

34.1 MARKING MANDIBULAR NERVES

ADJUSTING THE TANGENTIAL AND CROSS-SECTIONAL VIEWS

Adjust the **Tangential** and **Cross-Sectional** views so that the mandibular nerve is fully visible.
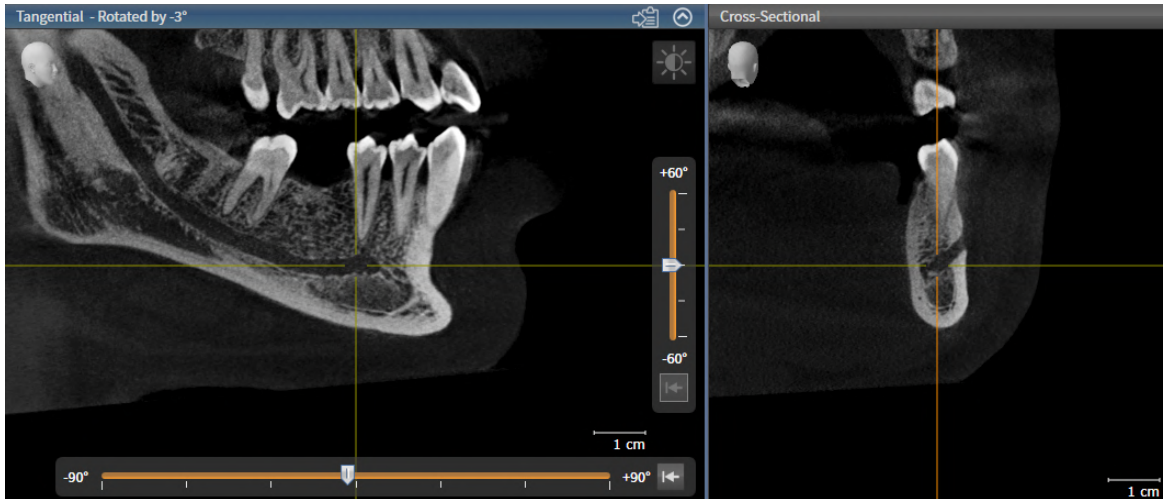

Proceed as follows:

☑ The **Panorama** workspace is open.

1. Move the **Inspection Window** so that the mental foramen is visible in the **Cross-Sectional** view.

    ► The **Cross-Sectional** view should now show the nerve path to the nerve exit.

2. In the **Cross-Sectional** view, move the crosshair to the lowest point of the visible nerve path. In this way, you set a suitable rotation point for step 4.

3. Enable the **Tangential** view, for example, by clicking in the **Tangential** view.

4. Rotate the **Tangential** view so that the ascending branch of the mandibular nerve is visible in the **Tangential** view. For more information, see *Rotating views [*▶*Page 145]*.

MARKING MANDIBULAR NERVE

☑ The **Prepare** workflow step is expanded.

1. In the **Prepare** workflow step, click on **Mark mandibular nerve**.
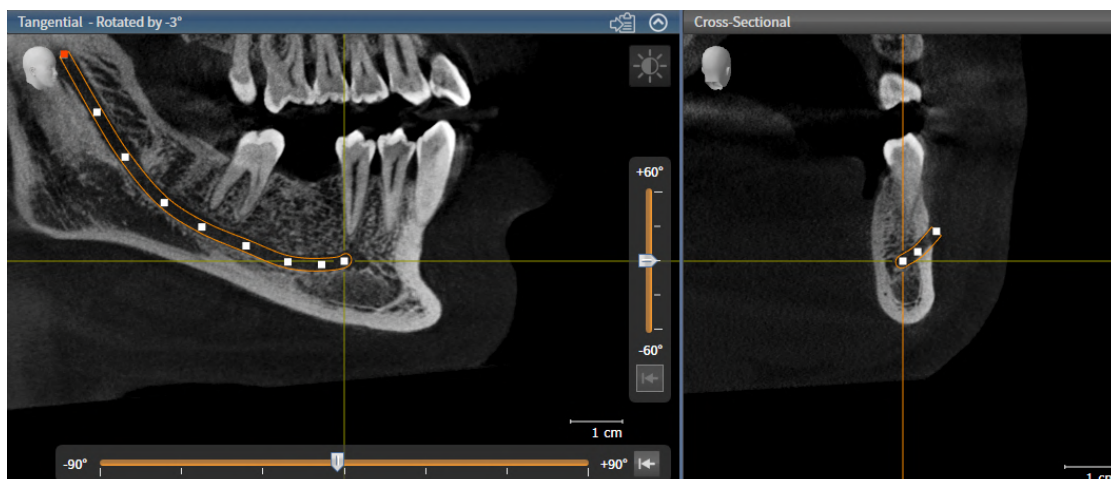
2. In the **Cross-Sectional** view, click on the nerve exit to add the first nerve point.

3. Add a second nerve point at the middle of the visible nerve path and a third nerve point just before the lowest point of the visible nerve path by clicking again in the **Cross-Sectional** view.

4. Go to the **Tangential** view and add more nerve points according to the nerve path from mesial to distal with further clicks.

5. Add the last nerve point with a double click instead of a single click.

▶ The mandibular nerve will be displayed in all views and under **Objects**.

> You can also scroll through the slices during nerve marking to locate the nerve. For more information, see *Scrolling through slices in the 2D slice views [▶Page 140]*.
>
> You can remove the most recently added nerve point during the nerve marking process by right-clicking.
>
> You can cancel the marking of the mandibular nerve with the **ESC** key or by clicking on the **Mark mandibular nerve** button again.

34.2 MOVING, ADDING AND REMOVING NERVE POINTS

MOVING NERVE POINTS

Proceed as follows to subsequently move nerve points:

1. Activate the nerve by clicking on the nerve under **Objects** or in a view.

2. In one of the 2D slice views, click on the desired nerve point and keep the mouse button pressed. Move the mouse to move the nerve point.

3. Release the mouse button at the desired position.

▶ SICAT Implant moves the nerve point.

ADDING NERVE POINTS

Proceed as follows to subsequently add nerve points:

1. Activate the nerve by clicking on the nerve under **Objects** or in a view.

2. **Adding an intermediate point:** In one of the 2D slice views, double-click between two existing nerve points on the desired location of the nerve.

3. **Adding an endpoint:** In one of the 2D slice views, double-click on the desired location of the nerve near the previous endpoint.

▶ SICAT Implant adds a nerve point at the desired location.

REMOVING NERVE POINTS

Proceed as follows to remove individual nerve points:

1. Activate the nerve by clicking on the nerve under **Objects** or in a view.

2. Activate the nerve point that is to be removed by clicking on the nerve point in one of the 2D slice views.

3. Click on the **Remove Point** button in the **Properties** area.

▶ SICAT Implant removes the nerve point.

34.3 CHANGING NERVE DIAMETERS

Proceed as follows to change a nerve diameter:

1. Activate the nerve by clicking on the nerve under **Objects** or in a view.

2. Select the desired nerve diameter in the **Properties** area.

▶ SICAT Implant changes the nerve diameter.

35 PLANNING IMPLANTS

⚠ **CAUTION**	**A plan that is intended as a basis for treatment must be lege artis. Otherwise, this might result in incorrect treatment.** You should only create plans as a basis for treatment that are lege artis.
⚠ **CAUTION**	**Implants, abutments and sleeves from the SICAT Implant Database are displayed according to the manufacturers' specifications. A deviation of the real dimensions from the manufacturers' specifications could result in incorrect treatment.** Check carefully that the displayed dimensions correspond to the real dimensions of the implants, abutments and sleeves.
⚠ **CAUTION**	**Implants from the SICAT Implant Database are displayed schematically if realistic data is unavailable or cannot be loaded. In these cases, the length and diameter of the schematic representation is based on the nominal data provided by the manufacturers. Any deviation of the nominal dimensions from the real dimensions could result in incorrect treatment.** Check carefully how the nominal dimensions provided by the manufacturers correspond to the real dimensions of the implants.

The SICAT Implant Database contains implant models from various manufacturers. The implant models are organized in implant lines for each manufacturer.

You can save the implant lines that you use in your practice as favorites. During implant planning, the implant lines that you have selected as favorites will then be shown for selection. Further information is available in the section *Defining preferred implant lines [▶Page 277]*.

If a desired implant model is not yet available in the SICAT Implant Database, you can plan a generic implant instead and enter the implant dimensions according to the implant manufacturer's specifications.

SICAT Implant shows a safety margin around implants and warns if implants are planned too close to a marked mandibular nerve or too close to each other. For further information see *Hiding and showing safety margins [▶Page 222]* and *Distance warnings [▶Page 224]*.

SICAT Implant shows a channel in occlusal extension of implants. Further information is available in the section *Hiding and showing channels [▶Page 223]*.

SICAT Implant supports two-piece implants and one-piece implants. You can plan abutments for two-piece implants together with the implants or add them later. Further information on the planning of abutments can be found in the section *Planning abutments [▶Page 225]*.

The planning of sleeves is obligatory when you use surgical guides for the implementation of your implant planning. You can plan sleeves together with the implants or add them later. Further information on the planning of sleeves can be found in the section *Planning sleeves [▶Page 232]*.

The following functions are available for planning implants:

- *Adding implants [▶Page 212]*

- Activating, hiding and showing implants - Information on this can be found in the section *Managing objects with the object browser [▶Page 119]*.

- Focusing on implants, removing implants and undoing and redoing implant actions – Information on this can be found in the section *Managing objects with the object toolbar [▶Page 121]*.

- *Moving and aligning implants [▶Page 215]*

- *Rotating implants about their axis [▶Page 217]*

- *Changing implant dimensions and implant models [▶Page 218]*

- *Specifically aligning implants [▶Page 220]*

- *Changing designations (tooth positions) [▶Page 221]*

- *Hiding and showing safety margins [▶Page 222]*

- *Hiding and showing channels [▶Page 223]*

- *Distance warnings [▶Page 224]*

35.1 ADDING IMPLANTS

> ⚠️
> **CAUTION**
>
> **The automatic positioning and orientation of implants based on restorations from CAD/CAM data records is only a rough initial pre-positioning and pre-alignment. It could result in incorrect treatment.**
>
> Always check implants that were automatically positioned and aligned. If necessary, adjust the positions and alignments.

> ⚠️
> **CAUTION**
>
> **The automatic positioning of multiple implants is only a rough initial pre-positioning. It could result in incorrect treatment.**
>
> Always check implants that were automatically positioned. If necessary, adjust the positions.

To add a new implant or several new implants in the same jaw to the opened plan, proceed as follows:

☑ Based on the desired surgical guide, you have imported and registered an optical impression (possibly with restorations) of the jaw that covers all implant positions. For additional information see *Supported surgical guides and sleeve systems [▶Page 49]* and *Optical impressions [▶Page 190]*.

☑ If you are planning one or more implants in the mandibular posterior region, you have marked the corresponding mandibular nerve. For additional information see *Marking mandibular nerves [▶Page 206]*.

☑ The **Plan** workflow step is expanded.

1. In the **Plan** workflow step, click on **Add implants**.

▶ The implant selection window appears:
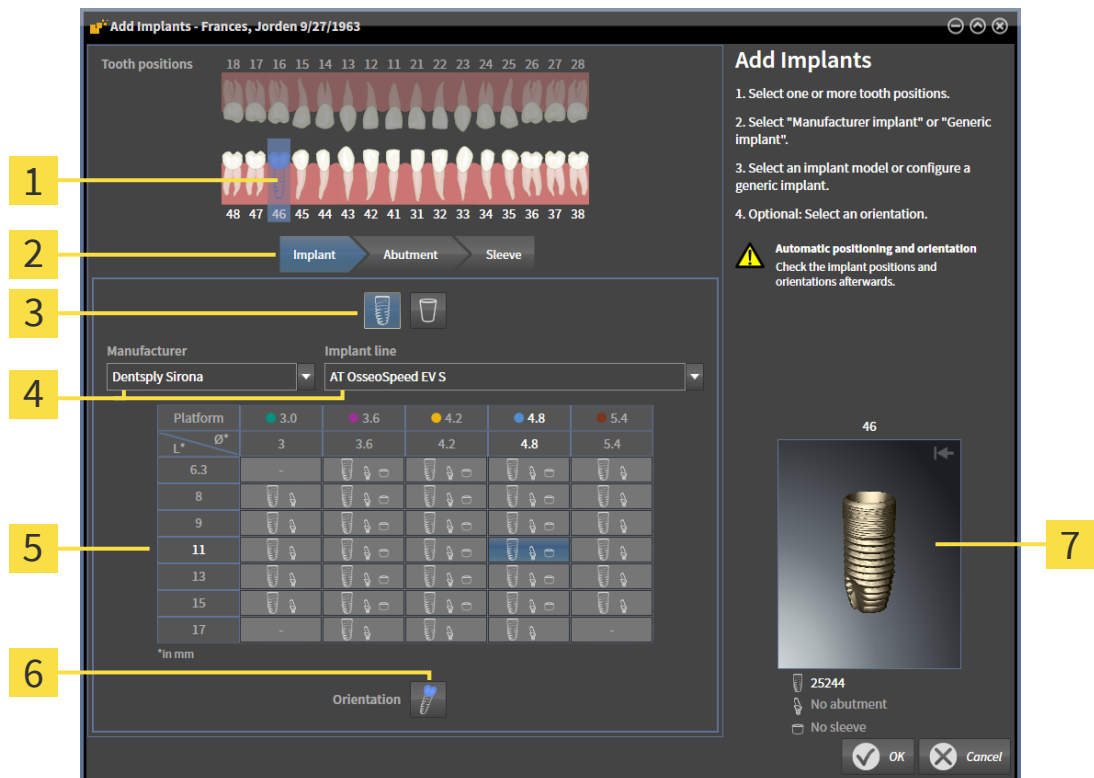
1	Selected tooth position	**5**	Table for implant model selection
2	Buttons for switching between implant, abutment and sleeve	**6**	Icon for selecting the **Orientation**
3	Buttons for switching between **Manufacturer implant** and **Generic implant**	**7**	3D preview with item number
4	Buttons for selecting the manufacturer and the implant line		

2. Select the tooth position of the new implant or the tooth positions of the new implants. If you have imported and shown optical impressions with restorations and/or intended implant positions, the tooth positions are automatically preselected. You can also deselect a (pre-)selected tooth position by clicking (again) on the selected tooth position.

   Note:
   The following buttons will only be shown after you have selected at least one tooth position.

3. Select the desired manufacturer and the desired implant line. The most recently used manufacturers and implant lines are listed at the top of the respective selection list.

4. Select the desired implant model in the table by clicking on the corresponding cell. The table contains all available implant models of the selected implant line. The rows correspond to different implant lengths and the columns correspond to different implant diameters in millimeters. If two diameters are displayed, the first diameter is the occlusal diameter. Small abutment and sleeve symbols indicate that fitting abutments of the manufacturer and sleeves of the manufacturer's fully guided surgical system can be planned as well.

   ▶ The selected implant model is displayed next to the table in the 3D preview with its item number. You can rotate the implant in the 3D preview by keeping the mouse button pressed. Use the mouse wheel in the 3D preview to zoom in and out.

5. **Select the pre-alignment:** Select the desired pre-alignment by moving the mouse pointer over the **Orientation** symbol and clicking on one of the following symbols:

▊ - Vertical

▊ - For a restoration in SIXD format according to the restoration axis, otherwise vertical. This option is only available if a restoration in SIXD format exists and is shown for at least one selected tooth position.

▊ - Parallel to an already planned implant of the jaw. This option is only available if you have already planned implants in the jaw.

6. Close the window with **OK**. The pre-positioning of implants depends on whether you add one or more implants and whether restorations are present and shown:

   ▶ If you add an implant at a tooth position that does not correspond to a shown restoration, you now need to pre-position the implant at the desired position in one of the 2D views with a mouse click.

   ▶ If you add an implant at a tooth position that corresponds to a shown restoration, SICAT Implant automatically pre-positions the implant.

   ▶ If you add several implants, SICAT Implant automatically pre-positions the implants. In general, the current position of the axial slice will be used as the vertical position.

▶ The new implant or implants are displayed in all views and under **Objects**.

ℹ	**Defining preferred implant lines** You can change the settings so that you are shown only those manufacturers and implant lines that you use in your practice. Further information is available in the section *Defining preferred implant lines [▶Page 277]*.

ℹ	**Using generic implants** If a desired implant model is not yet available in the SICAT Implant Database, you can use a generic implant instead. To do this, click on the **Generic implant** button and enter the implant dimensions according to the implant manufacturer's specifications.

|	
ℹ	**Simultaneously planning abutments and/or sleeves** If you want to plan abutments and/or sleeves at the same time as the implant or implants, click on the **Abutment** or **Sleeve** button before closing the window with the **OK** button. For further information see *Adding abutments [▶Page 226]* and *Adding sleeves [▶Page 233]*.

ℹ	**FDI/ADA tooth scheme** In these instructions for use, the FDI tooth scheme is used for all images. SICAT Implant also supports the ADA tooth scheme. Information on switching the tooth scheme can be found in the section *Using general settings [▶Page 267]*.

35.2 MOVING AND ALIGNING IMPLANTS

You can move and align implants with precision.
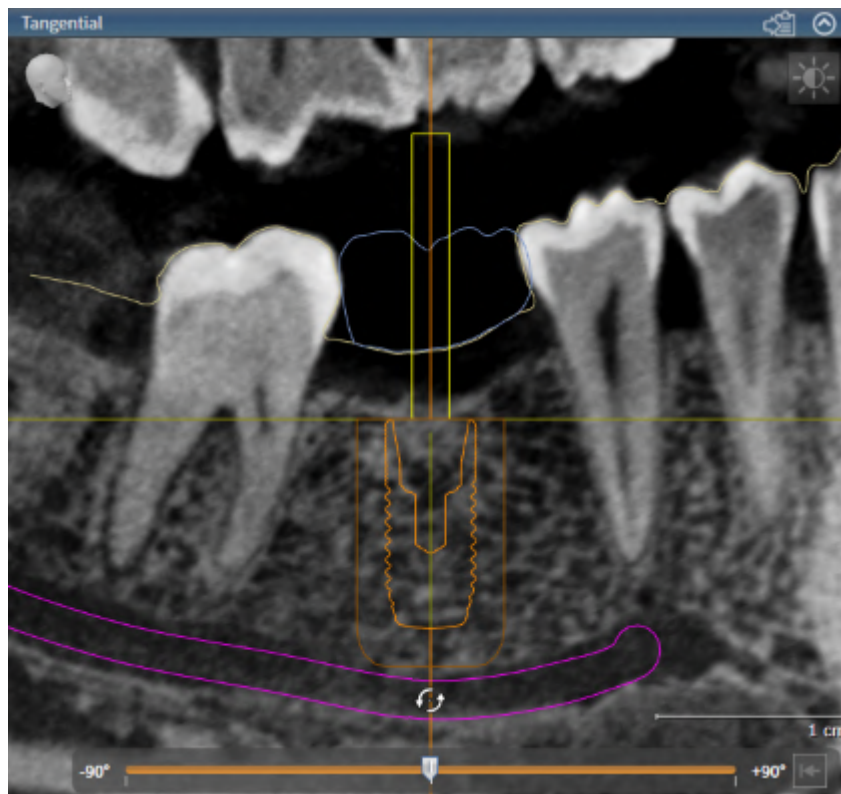
MOVING IMPLANTS
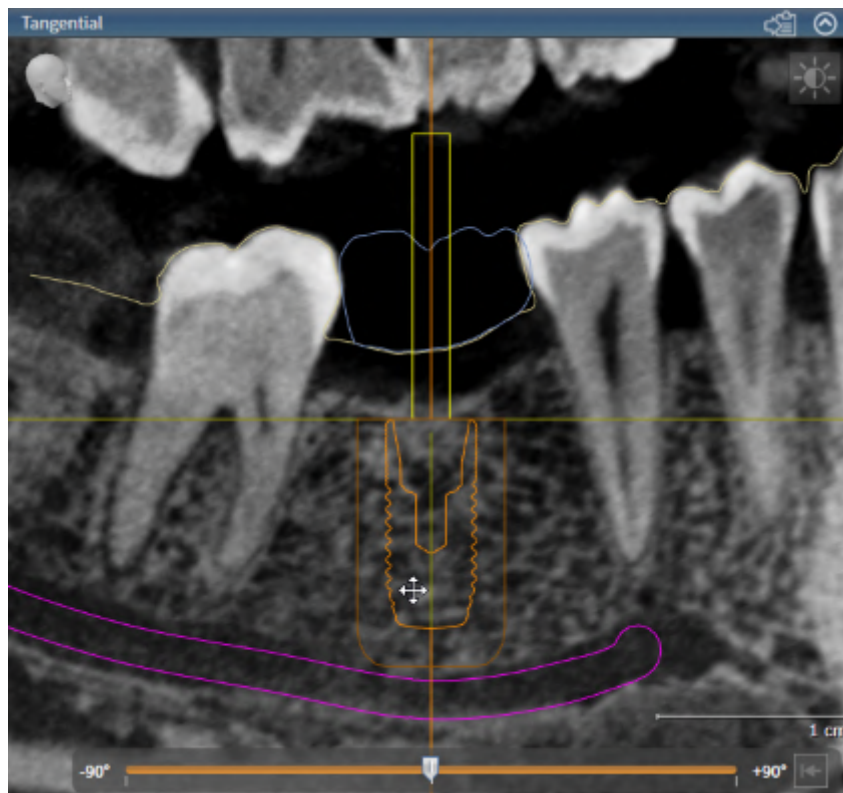
1. Place the mouse pointer over the implant in one of the 2D views.

    ▶ The mouse pointer changes to ⊕.

2. Click and hold the left mouse button.

3. Move the mouse pointer to the desired position of the implant.

    ▶ SICAT Implant moves the implant according to the movement of the mouse pointer.

4. Release the left mouse button.

▶ SICAT Implant maintains the current position of the implant.

> **i** **Implant-Aligned workspace**
> Implants are most easily and safely moved and aligned in the **Tangential** and
> **Cross-Sectional** views of the **Implant-Aligned** workspace. Further information
> on the **Implant-Aligned** workspace can be found in the section *Overview of the
> Implant-Aligned workspace [▶Page 127]*.

ALIGNING IMPLANTS

1. In one of the 2D slice views, but not in the **Axial** view, place the mouse pointer over the apical part of the implant axis to rotate the implant about the occlusal endpoint or over the occlusal part of the implant axis to rotate the implant about the apical endpoint.

   ▶ The mouse pointer changes to ⟳.

2. Click and hold the left mouse button.

3. Move the mouse pointer circularly to the desired alignment of the implant.

   ▶ SICAT Implant aligns the implant according to the movement of the mouse pointer.

4. Release the left mouse button.

   ▶ SICAT Implant maintains the current alignment of the implant.

> **ⓘ** **Implant-Aligned workspace**
> Implants are most easily and safely moved and aligned in the **Tangential** and **Cross-Sectional** views of the **Implant-Aligned** workspace. Further information on the **Implant-Aligned** workspace can be found in the section *Overview of the Implant-Aligned workspace [▶Page 127]*.

35.3 ROTATING IMPLANTS ABOUT THEIR AXIS

You can rotate implants about their axis, for example to plan angulated abutments as requested.
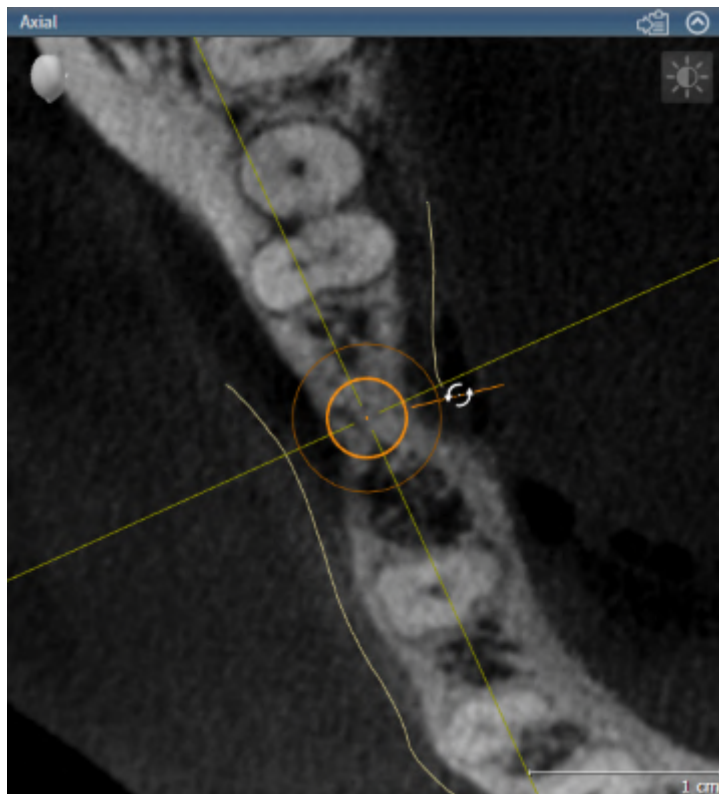
1. In the **Axial** view, place the mouse pointer over the turning handle of the implant.

    ▶ The mouse pointer changes to ⟳.

2. Click and hold the left mouse button.

3. Move the mouse pointer circularly to the desired rotation of the implant.

    ▶ SICAT Implant rotates the implant about its axis according to the movement of the mouse pointer.

4. Release the left mouse button.

▶ SICAT Implant maintains the current rotation of the implant about its axis.

---

i   **Implant-Aligned workspace**
Implants are most easily and safely rotated about their axis in the **Axial** view of the **Implant-Aligned** workspace. Use the **Tangential** and **Cross-Sectional** views or the **3D** view as a basis when rotating an implant about its axis. Further information on the **Implant-Aligned** workspace can be found in the section *Overview of the Implant-Aligned workspace [▶Page 127]*.

35.4 CHANGING IMPLANT DIMENSIONS AND IMPLANT MODELS

To subsequently change the dimensions or model of an implant, proceed as follows:

1. Activate the implant that you want to change by clicking on the implant under **Objects** or in one of the views.

   ► The current dimensions and model of the active implant are displayed in the **Properties** area:
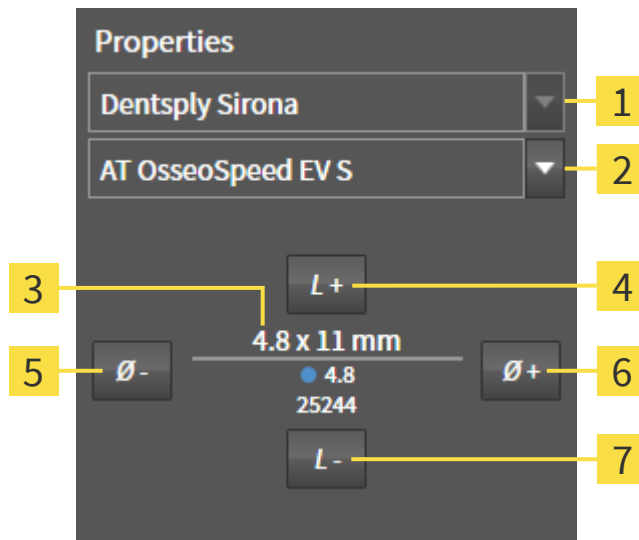
1	**Manufacturer** button	**5**	**Narrower** button
2	**Implant line** button	**6**	**Wider** button
3	**Current implant model:** Diameter x length, platform and item number	**7**	**Shorter** button
4	**Longer** button		

2. **Changing implant manufacturer and implant line:** Select the desired implant manufacturer and the desired implant line.

   ► SICAT Implant also changes the implant model and, if necessary, the implant dimensions.

3. **Changing implant dimensions and implant models:** Click on the **Wider** or **Narrower** buttons to select the next wider or next narrower model in the selected implant line. Click on the **Longer** or **Shorter** buttons to select the next longer or next shorter model in the selected implant line.

► SICAT Implant changes the implant dimensions and the implant model.

ℹ	**Implant selection window** You can also change the dimensions and model of an implant from the implant selection window by clicking on the ⊞ icon shown next to the implant you want to change under **Objects**. There you can also switch between **Manufacturer implant** and **Generic implant**. Further information is available in the section *Adding implants [► Page 212].*

ℹ	**Generic implants** You can also change the dimensions of generic implants in the **Properties** area or the implant selection window.

Automatic adjustment of abutments

If you change the dimensions or model of an implant and the associated abutment is no longer compatible, SICAT Implant automatically adjusts the abutment. SICAT Implant selects a compatible abutment from the selected abutment line that is identical to the original abutment except for the platform diameter and, if applicable, the emergence diameter. If such an abutment is not available, SICAT Implant removes the abutment.

Automatic adjustment of sleeves

If you change the dimensions or model of an implant and the associated sleeve is no longer compatible or the sleeve position is no longer permitted, SICAT Implant automatically adjusts the sleeve and/or sleeve position. SICAT Implant automatically selects a compatible sleeve and/or a permitted sleeve position from the selected sleeve system. If such a sleeve is not available, SICAT Implant removes the sleeve.

35.5 SPECIFICALLY ALIGNING IMPLANTS

You can subsequently align implants in a specific manner as follows:

- Vertically

- According to the restoration axis of restorations in SIXD format

- Parallel to an already planned implant in the same jaw

Proceed as follows:

1. Under **Objects** click on the symbol next to the implant.

   ► SICAT Implant displays the implant selection window.

2. Select the desired specific orientation by moving the mouse pointer over the **Orientation** symbol and clicking on the symbol corresponding to the desired specific alignment. Further information is available in the section *Adding implants [▶Page 212]*.

   ► SICAT Implant changes the alignment of the implant.

3. Close the window with **OK**.

35.6 CHANGING DESIGNATIONS (TOOTH POSITIONS)

If the designation (tooth position) of an implant is incorrect, you can change the designation (tooth position) as follows:

1. Under **Objects** click on the symbol next to the implant.

   ► SICAT Implant displays the implant selection window.

2. Select the new tooth position. Further information is available in the section *Adding implants [►Page 212]*.

   ► SICAT Implant changes the designation (tooth position) of the implant.

3. Close the window with **OK**.

35.7 HIDING AND SHOWING SAFETY MARGINS

SICAT Implant displays a safety margin around implants so that you can assess whether certain minimum distances are maintained, e.g. to adjacent tooth roots, to adjacent implants, to the bone margin, to the mandibular nerve or to the sinus, when planning implants. In addition, the safety margins are the basis for the distance warnings. Further information on the distance warnings can be found in the section *Distance warnings [*▶*Page 224]*.

You can adjust the dimensions of the safety margins around implants in the settings. There you can also select whether safety margins should be displayed in new plans by default. For more information, see *Defining safety margins [*▶*Page 279]*.

During planning, you can hide or show the safety margins for all implants at the same time.

☑ The **Implants** object group is shown in the **Object browser**. For more information, see *SICAT Implant objects [*▶*Page 122]*.

☑ Safety margins are currently shown.

1. In the **Implants** object group, place the mouse pointer over the **Show/Hide safety margins** icon.

    ▶ SICAT Implant displays symbols for hiding and showing the safety margins.

2. Click on the **Hide safety margins** icon.

    ▶ SICAT Implant hides the safety margins.

3. Click on the **Show safety margins** icon.

    ▶ SICAT Implant shows the safety margins.

> ℹ You can also toggle the display of the safety margins by placing the mouse pointer over the **Show/Hide safety margins** icon and clicking on it. Repeated clicking switches the display of the safety margins on and off.

> ℹ If safety margins are hidden, the affected safety margins will nevertheless be shown in the views when distance warnings are in effect.

35.8 HIDING AND SHOWING CHANNELS

SICAT Implant can display pilot drill channels or implant channels for implants. In particular, this enables you to check whether the respective channel is accessible without problems. Pilot drill channels can also be used to display screw channels.

In the settings you can adjust the diameter of the pilot drill channels and the length of both channels. The diameter of an implant channel always corresponds to the maximum diameter of the corresponding implant. In the settings you can also select whether pilot drill channels, implant channels or no channels should be displayed in new plans. For more information, see *Defining channels [▶Page 280]*.

During planning, you can hide or show the pilot drill channels and the implant channels for all implants at the same time.

☑ The **Implants** object group is shown in the **Object browser**. For more information, see *SICAT Implant objects [▶Page 122]*.

☑ Pilot drill channels are currently shown.

1. In the **Implants** object group, place the mouse pointer over the **Show/Hide channels** icon.

   ▶ SICAT Implant displays symbols for hiding and showing the channels.

2. Click on the **Hide channels** icon.

   ▶ SICAT Implant hides the channels.

3. Click on the **Show pilot drill channels** icon.

   ▶ SICAT Implant shows the pilot drill channels.

4. Click on the **Show implant channels** icon.

   ▶ SICAT Implant shows the implant channels.

> You can also toggle the display of the channels by placing the mouse pointer over the **Show/Hide channels** icon and clicking on it. Repeated clicking toggles the display of the channels in the order of the icons.

35.9 DISTANCE WARNINGS

⚠️ **CAUTION**	**Distance warnings are only displayed if the safety distance between two implants or an implant and a marked mandibular nerve is violated. Violated minimum distances between other objects such as abutments or sleeves could result in incorrect treatment.** Always check the distances between the objects.

⚠️ **CAUTION**	**Distance warnings are not necessarily indicative of incorrect planning. An incorrect planning might result in incorrect treatment.** Always check the distances between the objects.

SICAT Implant checks the safety distance between the following objects:

- Implant to marked mandibular nerve - For further information about this see *Marking and adjusting mandibular nerves [*▶*Page 205]*.

- Implant to implant

If the safety distance between two objects falls below the specified value (see *Defining safety margins [*▶*Page 279]*), the corresponding objects or their safety margins are displayed in red in the views. In addition, the affected objects are marked with a warning symbol in the **Object browser**.

36 PLANNING ABUTMENTS

⚠️ **CAUTION**	**Implants, abutments and sleeves from the SICAT Implant Database are displayed according to the manufacturers' specifications. A deviation of the real dimensions from the manufacturers' specifications could result in incorrect treatment.** Check carefully that the displayed dimensions correspond to the real dimensions of the implants, abutments and sleeves.

⚠️ **CAUTION**	**Abutments from the SICAT Implant Database are displayed as red cylinders if the realistic data cannot be loaded. In these cases, the cylinder dimensions do not correspond to the real dimensions of the planned abutments. This could result in incorrect treatment.** Repair or update the SICAT Implant Database or use generic abutments.

The SICAT Implant Database also contains abutment models from various manufacturers. The abutment models are organized in abutment lines for each manufacturer.

SICAT Implant enables the planning of straight and angulated standard abutments as well as TiBases. You will only be offered abutment models that are compatible with the planned implants.

If a desired abutment model is not yet available in the SICAT Implant Database, you can plan a generic abutment instead and enter the angulation and the abutment dimensions according to the implant manufacturer's specifications.

The following functions are available for planning abutments:

- *Adding abutments [▶Page 226]*

- Activating abutments - Information on this can be found in the section *Managing objects with the object browser [▶Page 119]*.

- Focusing on abutments, removing abutments and undoing and redoing abutment actions – Information on this can be found in the section *Managing objects with the object toolbar [▶Page 121]*.

- *Rotating abutments about implant axis [▶Page 228]*

- *Changing angulations, abutment dimensions and abutment models [▶Page 229]*

- *Hiding and showing abutments [▶Page 231]*

36.1 ADDING ABUTMENTS

To add an abutment to a planned two-piece implant, proceed as follows:

☑ The planned implant does not yet have an abutment.

☑ The **Plan** workflow step is expanded.

1. Activate the implant to which you want to add an abutment by clicking on the implant under **Objects** or in one of the views.

2. In the **Plan** workflow step, click on **Add abutment to the (active) implant**.

   ► The abutment selection window appears:
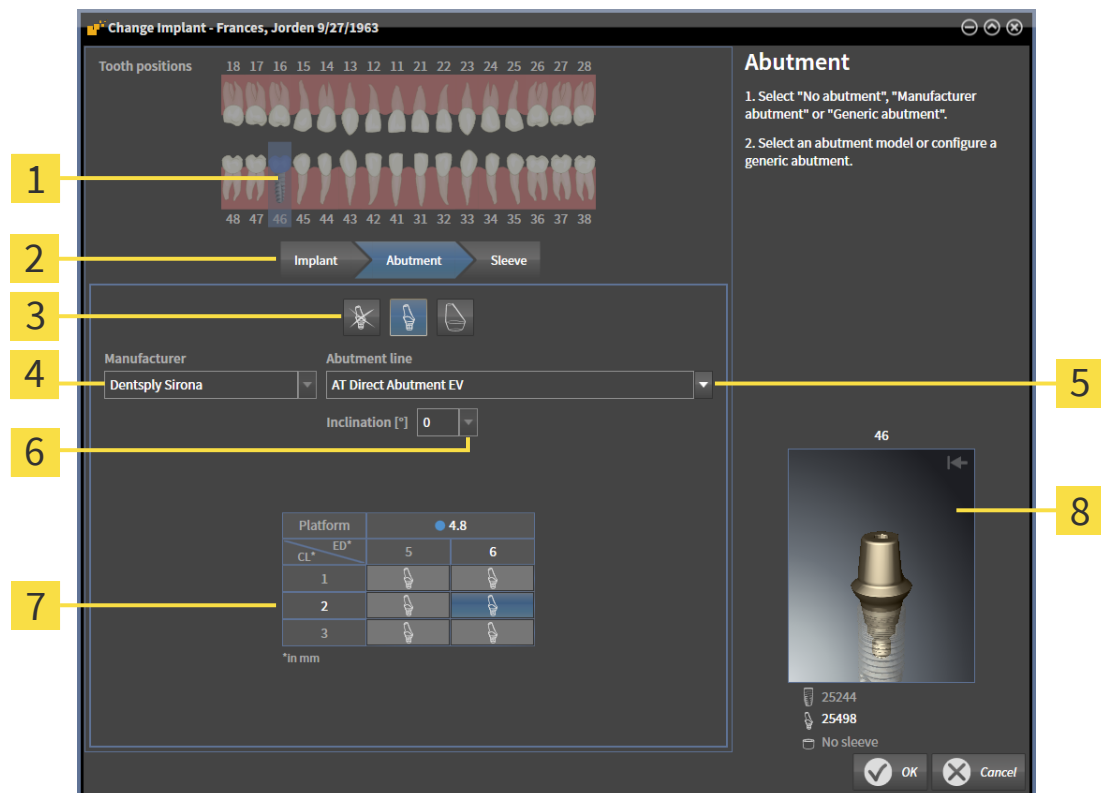
1 Tooth position of the implant	**5** Button for selecting the abutment line
2 Buttons for switching between implant, abutment and sleeve	**6** Button for selecting the angulation
3 Buttons for switching between **No abutment**, **Manufacturer abutment** and **Generic abutment**	**7** Table for abutment model selection
4 Manufacturer	**8** 3D preview with item number

3. Select the desired abutment line.

4. Select the desired angulation.

   Note:
   Not every abutment line includes angled abutments.

5. Select the desired abutment model in the table by clicking on the corresponding cell. The table contains all available abutment models from the selected abutment line with the selected angulation that are compatible with the planned implant. The rows correspond to different collar lengths and/or post lengths and the columns correspond to different emergence diameters in millimeters.

▶ The selected abutment model is displayed next to the table in the 3D preview with its item number. You can rotate the abutment in the 3D preview by keeping the mouse button pressed. Use the mouse wheel in the 3D preview to zoom in and out.

6. Close the window with **OK**.

▶ The new abutment is displayed in all views in occlusal extension of the corresponding implant and below the corresponding implant under **Objects**.

Using generic abutments
If a desired abutment model is not yet available in the SICAT Implant Database, you can use a generic abutment instead. To do this, click on the **Generic abutment** button and enter the angulation and dimensions according to the manufacturer's specifications.

Simultaneously changing implant and/or sleeve
If you want to change the corresponding implant or sleeve when adding an abutment, click on the **Implant** button or the **Sleeve** button before closing the window with **OK**.

36.2 ROTATING ABUTMENTS ABOUT IMPLANT AXIS

You can rotate abutments about the implant axis, especially in order to plan angulated abutments as requested.

To do this, rotate the corresponding implant about its axis. Further information is available in the section *Rotating implants about their axis [*▶*Page 217]*.

36.3 CHANGING ANGULATIONS, ABUTMENT DIMENSIONS AND ABUTMENT MODELS

To subsequently change the angulation, dimensions or model of an abutment, proceed as follows:

1. Activate the abutment that you want to change by clicking on the abutment under **Objects** or in one of the views.

   ▶ The current angulation, the current dimensions and the current model of the active abutment are displayed in the **Properties** area:
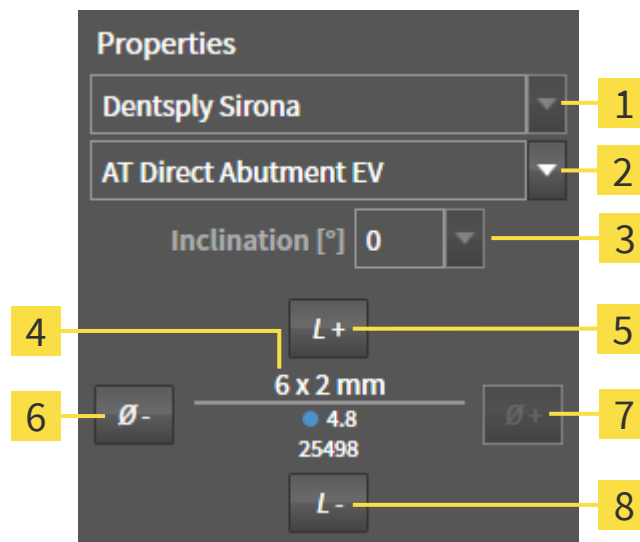
1	**Manufacturer**	**5**	**Longer** button
2	**Abutment line** button	**6**	**Narrower** button
3	**Inclination** button	**7**	**Wider** button
4	**Current abutment model:** Collar length and/or post length x emergence diameter, platform and item number	**8**	**Shorter** button

2. **Changing the abutment line:** Select the desired abutment line.

   ▶ SICAT Implant also changes the abutment model and, if necessary, the angulation and abutment dimensions.

3. **Changing the angulation:** Select the desired angulation.

   Note:
   Not every abutment line includes angled abutments.

   ▶ SICAT Implant also changes the abutment model and, if necessary, the abutment dimensions.

4. **Changing abutment dimensions and abutment model:** Click on the **Wider** or **Narrower** buttons to select the next wider or next narrower model in the selected abutment line with the selected angulation. Click on the **Longer** or **Shorter** buttons to select the next longer or next shorter model in the selected abutment line with the selected angulation.

   ▶ SICAT Implant changes the abutment dimensions and the abutment model.

Abutment selection window

You can also change the angulation, the dimensions and the model of an abutment from the abutment selection window by clicking on the ⬚ icon shown next to the abutment you want to change under **Objects**. There you can also switch between **Manufacturer abutment**, **Generic abutment** and **No abutment**. Further information is available in the section *Adding abutments [▶Page 226]*.

Generic abutments

You can also change the angulation and the dimensions of generic abutments in the **Properties** area or the abutment selection window.

36.4 HIDING AND SHOWING ABUTMENTS

You can hide and show the abutments for all implants at the same time.

☑ The **Implants** object group is shown in the **Object browser**. For more information, see *SICAT Implant objects [▶Page 122]*.

☑ Abutments are currently shown.

1. In the **Implants** object group, place the mouse pointer over the **Show/Hide abutments** icon.

   ▶ SICAT Implant displays symbols for hiding and showing the abutments.

2. Click on the **Hide abutments** icon.

   ▶ SICAT Implant hides the abutments.

3. Click on the **Show abutments** icon.

   ▶ SICAT Implant shows the abutments.

> **ⓘ** You can also toggle the display of the abutments by placing the mouse pointer over the **Show/Hide abutments** icon and clicking on it. Repeated clicking switches the display of the abutments on and off.

> **ⓘ** When abutments are hidden, some functions for planning abutments are disabled. Show the abutments to enable these functions again.

37 PLANNING SLEEVES

⚠ CAUTION	**Implants, abutments and sleeves from the SICAT Implant Database are displayed according to the manufacturers' specifications. A deviation of the real dimensions from the manufacturers' specifications could result in incorrect treatment.** Check carefully that the displayed dimensions correspond to the real dimensions of the implants, abutments and sleeves.
⚠ CAUTION	**Sleeves from the SICAT Implant Database are displayed schematically when realistic data is unavailable or cannot be loaded. In these cases, the length and diameter of the schematic representation is based on the nominal data provided by the manufacturers. Any deviation of the nominal dimensions from the real dimensions could result in incorrect treatment.** Check carefully how the nominal dimensions provided by the manufacturers correspond to the real dimensions of the sleeve.

The SICAT Implant Database also contains sleeve models from various manufacturers. The sleeve models are organized in sleeve systems for each manufacturer.

The planning of sleeves is obligatory when you use surgical guides for the implementation of your implant planning. Check whether your implant planning can be implemented as desired. For example, sleeves must have a sufficient distance to adjacent teeth, to adjacent sleeves and to the gingiva (flapless surgery) or to the bone (flap surgery).

Information on the surgical guides and sleeve systems supported by SICAT Implant can be found under *Supported surgical guides and sleeve systems [▶Page 49]*.

After you have selected a surgical guide SICAT Implant only offers you the sleeve systems supported by the selected surgical guide and compatible with the planned implants. Exception: The CEREC Guide Drill Keys are compatible with all implants in SICAT Implant although not all implant systems are supported by the CEREC Guide Drill Keys. Further information on the implant systems/surgical kits supported by the CEREC Guide Drill Keys can be found in the instructions for use of the CEREC Guide.

You can plan the sleeve models of fully guided sleeve systems according to the manufacturer's protocol relative to the implant for one of the permitted discrete sleeve positions. You can plan the sleeve models of the other sleeve systems relative to the implant for any arbitrary sleeve position to be entered.

The following functions are available for planning sleeves:

- *Adding sleeves [▶Page 233]*

- Activating sleeves - Information on this can be found in the section *Managing objects with the object browser [▶Page 119]*.

- Focusing on sleeves, removing sleeves and undoing and redoing sleeve actions – Information on this can be found in the section *Managing objects with the object toolbar [▶Page 121]*.

- *Changing surgical guide and sleeve system [▶Page 236]*

- *Changing sleeve models [▶Page 237]*

- *Changing sleeve positions [▶Page 238]*

- *Hiding and showing sleeves [▶Page 240]*

37.1 ADDING SLEEVES

To add a sleeve to a planned implant, proceed as follows:

☑ You have not yet selected a surgical guide and a sleeve system.

☑ The **Plan** workflow step is expanded.

1. Activate the implant to which you want to add the sleeve by clicking on the implant under **Objects** or in one of the views.

2. In the **Plan** workflow step, click on **Add sleeve to the (active) implant**.

    ▶ The sleeve selection window appears:
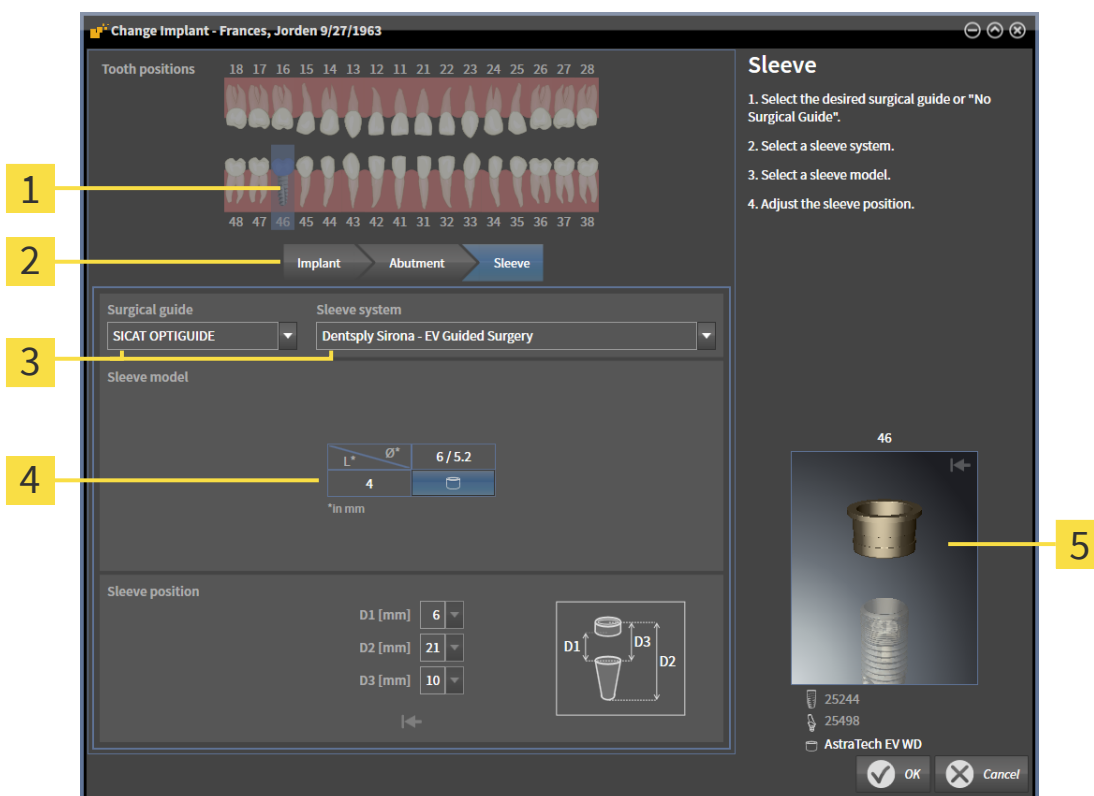
1	Tooth position of the implant	**4**	Table for sleeve model selection
2	Buttons for switching between implant, abutment and sleeve	**5**	3D preview with sleeve designation
3	Buttons for selecting the surgical guide and the sleeve system		

3. Select the desired surgical guide. Information on the surgical guides supported by SICAT Implant can be found under *Supported surgical guides and sleeve systems [*▶*Page 49]*.

    Note:
    The following buttons will only be shown after you have selected a surgical guide.

4. Select the desired sleeve system. Information on the sleeve systems supported by SICAT Implant can be found under *Supported surgical guides and sleeve systems [*▶*Page 49]*.

5. Select the desired sleeve model in the table by clicking on the corresponding cell. The table contains all available sleeve models of the selected sleeve system that are compatible with the planned implant. With many fully guided sleeve systems, exactly one sleeve model is compatible for each supported implant. The rows correspond to different sleeve lengths, the columns correspond to different sleeve diameters (outer diameter / inner diameter) in millimeters.

    ▶ The selected sleeve model is displayed next to the table in the 3D preview with its designation. You can rotate the sleeve in the 3D preview by keeping the mouse button pressed. Use the mouse wheel in the 3D preview to zoom in and out.

6. **Fully guided sleeve system with discrete sleeve positions:** Select the desired sleeve position. All discrete sleeve positions that are permitted for the selected implant-sleeve combination according to the manufacturer's protocol are available for selection. If you select one of the D values, the other two D values will be automatically adjusted.
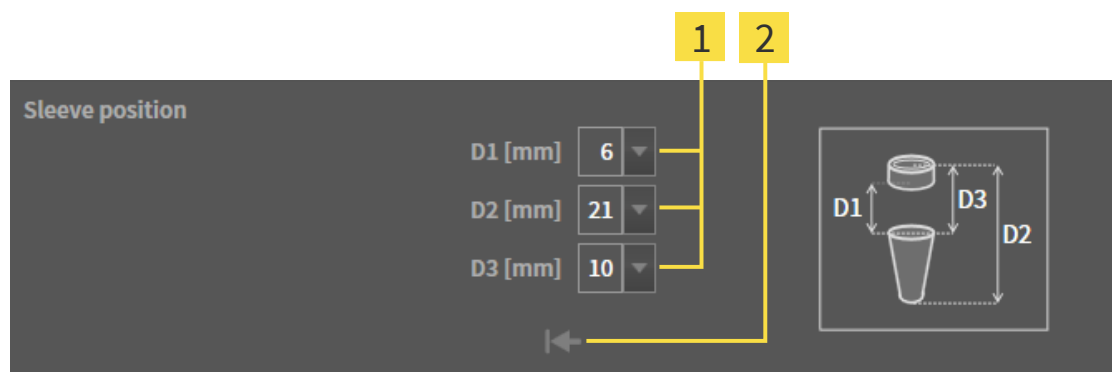
| **1** | Button for selecting the sleeve position | **2** | **Reset sleeve position** button |

7. **Sleeve system with arbitrary sleeve positions:** Enter the desired sleeve position in one of the fields or use the slider to set the desired sleeve position. If you enter one of the D values, the other two D values will be automatically adjusted.
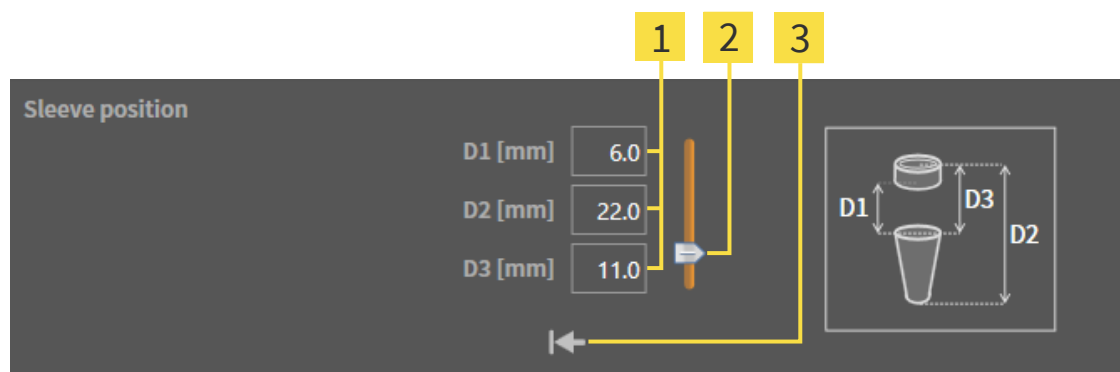
| **1** | Fields for entering the sleeve position | **3** | **Reset sleeve position** button |
| **2** | Slider for adjusting the sleeve position | | |

8. Close the window with **OK**.

▶ The new sleeve is displayed in all views at the set sleeve position relative to the corresponding implant and below the corresponding implant under **Objects**.

Effect on other implants in the opened plan
The selected surgical guide and the selected sleeve system refer to the entire plan, i.e. to all implants of the opened plan. After selecting or changing the sleeve system, also check the sleeve models and the sleeve positions of the other implants in the opened plan and adjust them if necessary. For further information see *Changing sleeve models [▶Page 237]* and *Changing sleeve positions [▶Page 238]*.

Simultaneously changing implant and/or abutment
If you want to change the corresponding implant or abutment when adding a sleeve, click on the **Implant** button or the **Abutment** button before closing the window with **OK**.

37.2 CHANGING SURGICAL GUIDE AND SLEEVE SYSTEM

You can change the surgical guide or the sleeve system subsequently. Information on the surgical guides and sleeve systems supported by SICAT Implant can be found under *Supported surgical guides and sleeve systems [▶Page 49]*.

| **1** | **Change surgical guide** button | **2** | **Change sleeve system** button |

CHANGING SURGICAL GUIDE

1. Click on the **Change surgical guide** button in the **Plans** area of the **Object bar**.

   ► SICAT Implant displays a list with supported surgical guides.

2. Click on the new surgical guide with which you want to implement the implant planning.

► SICAT Implant changes the surgical guide.

► If the new surgical guide does not support the previously selected sleeve system, SICAT Implant switches to a sleeve system that is supported by the new surgical guide. In this case, check the sleeve system and the sleeve models and the sleeve positions of all planned implants in the opened plan and adjust them if necessary. Further information is available under *Changing sleeve system* in this section, *Changing sleeve models [▶Page 237]* and *Changing sleeve positions [▶Page 238]*.

CHANGING SLEEVE SYSTEM

1. Click on the **Change sleeve system** button in the **Plans** area of the **Object bar**.

   Note:
   The Change sleeve system button will only be shown after you have selected a surgical guide.

   ► SICAT Implant displays a list with sleeve systems supported by the selected surgical guide and compatible with the planned implants.

2. Click on the new sleeve system you want to use.

► SICAT Implant changes the sleeve system.

► The planned sleeves of the old sleeve system are removed and sleeves of the new sleeve system are automatically added to the planned implants, provided they are compatible with the new sleeve system.

► Check the sleeve models and the sleeve positions of all planned implants in the opened plan and adjust them if necessary. For further information see *Changing sleeve models [▶Page 237]* and *Changing sleeve positions [▶Page 238]*.

37.3 CHANGING SLEEVE MODELS

If several sleeve models of the selected sleeve system are compatible with a planned implant, you can subsequently change the sleeve model.

Proceed as follows:

☑ You have already selected the desired surgical guide and the desired sleeve system. Information on how to change the surgical guide and the sleeve system is available in the section *Changing surgical guide and sleeve system [▶Page 236]*.

1. Activate the sleeve that you want to change by clicking on the sleeve under **Objects** or in one of the views.

   ▶ The current sleeve model is displayed in the **Properties** area:
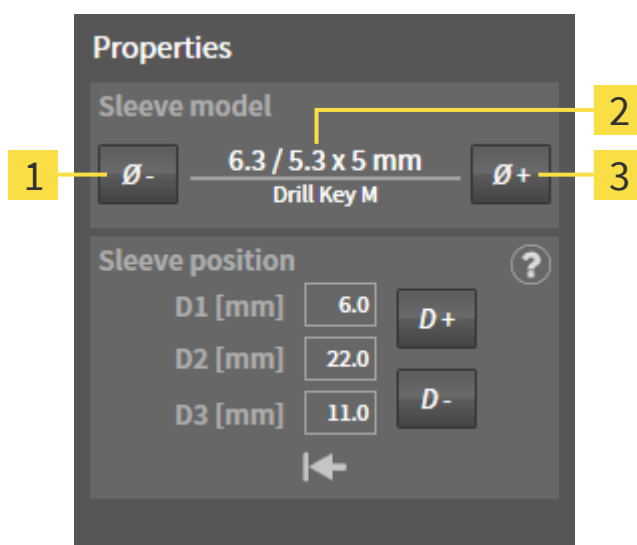
1	**Narrower** button	**3**	**Wider** button
2	**Current sleeve model:** Outer diameter / inner diameter x length and designation		

2. Click on the **Wider** or **Narrower** buttons to select the next wider or next narrower model of the selected sleeve system.

   ▶ SICAT Implant changes the sleeve model.

   ▶ SICAT Implant changes the sleeve position, if necessary.

3. Check the sleeve position and adjust it, if necessary. Further information is available in the section *Changing sleeve positions [▶Page 238]*.

ℹ **Sleeve selection window**
You can also change the sleeve model from the sleeve selection window by clicking on the ⚙ icon shown next to the sleeve whose sleeve model you want to change under **Objects**. Further information is available in the section *Adding sleeves [▶Page 233]*.

37.4 CHANGING SLEEVE POSITIONS

To subsequently change the position of a planned sleeve, proceed as follows:

☑ You have selected a sleeve system with arbitrary sleeve positions or you have selected a fully guided sleeve system with discrete sleeve positions and several discrete sleeve positions are permitted for the implant-sleeve combination according to the manufacturer's protocol.

1. Activate the sleeve whose position you want to change by clicking on the sleeve under **Objects** or in one of the views.

   ▶ **Fully guided sleeve system with discrete sleeve positions:** The current sleeve position is displayed in the **Properties** area as follows:
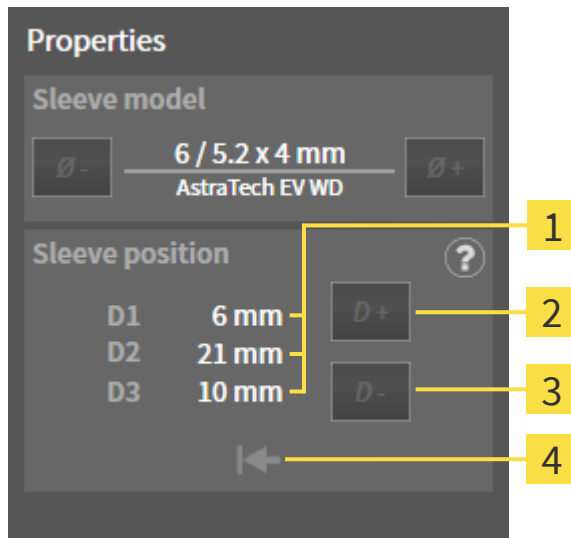
1	Current sleeve position	**3**	**Decrease** button
2	**Increase** button	**4**	**Reset sleeve position** button

▶ **Sleeve system with arbitrary sleeve positions:** The current sleeve position is displayed in the **Properties** area as follows:
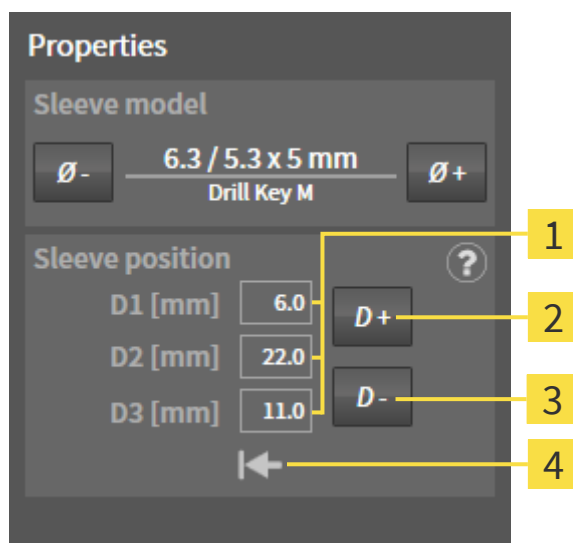
1	Input fields for current sleeve position	**3**	**Decrease** button
2	**Increase** button	**4**	**Reset sleeve position** button

▶ **Explanation of D values**
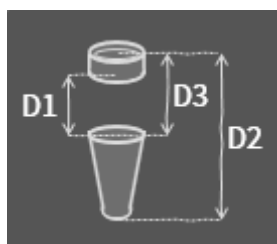
2. Click on the **Increase** or **Decrease** buttons to select the next larger or next smaller sleeve position. In a sleeve system with arbitrary sleeve positions, you can also enter the desired sleeve position in one of the fields. If you adjust one of the D values, the other two D values will be automatically adjusted.

▶ SICAT Implant changes the sleeve position.

ℹ **Changing sleeve position directly in the views**
You can also change the sleeve position directly in one of the 2D slice views, but not in the **Axial** view, by clicking on the desired sleeve and moving the mouse up or down with the mouse button pressed. With a fully guided sleeve system with discrete sleeve positions, you can only set the sleeve positions permitted according to the manufacturer's protocol in this way.

ℹ **Sleeve selection window**
You can also change the sleeve position from the sleeve selection window by clicking on the ▦ icon shown next to the sleeve whose position you want to change under **Objects**. Further information is available in the section *Adding sleeves [*▶*Page 233]*.

37.5 HIDING AND SHOWING SLEEVES

You can hide and show the sleeves for all implants at the same time.

☑ The **Implants** object group is shown in the **Object browser**. For more information, see *SICAT Implant objects [▶Page 122]*.

☑ Sleeves are currently shown.

1. In the **Implants** object group, place the mouse pointer over the **Show/Hide sleeves** icon.

   ▶ SICAT Implant displays symbols for hiding and showing the sleeves.

2. Click on the **Hide sleeves** icon.

   ▶ SICAT Implant hides the sleeves.

3. Click on the **Show sleeves** icon.

   ▶ SICAT Implant shows the sleeves.

> ℹ You can also toggle the display of the sleeves by placing the mouse pointer over the **Show/Hide sleeves** icon and clicking on it. Repeated clicking switches the display of the sleeves on and off.

> ℹ When sleeves are hidden, some functions for planning sleeves are disabled. Show the sleeves to enable these functions again.

38 ORDERING PROCESS

To order the desired SICAT surgical guide, proceed as follows:

- In SICAT Implant, place the desired SICAT surgical guide with the planning data in the shopping cart. Information on this can be found in the section *Placing SICAT surgical guides in the shopping cart [▶Page 242]*.

- 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 245]*.

- 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 246]* or section *Completing an order without an active Internet connection [▶Page 250]*.

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 96]* and *Unlocking patient records after lock has expired [▶Page 113]*.

38.1 PLACING SICAT SURGICAL GUIDES IN THE SHOPPING CART

> ⚠️
> **CAUTION**
>
> **An order based on an incorrect plan or incorrect data in an order could result in incorrect treatment.**
>
> Make sure that your order is based on the correct plan and that you select and submit the correct data for the order.

In SICAT Implant, you can place a SICAT surgical guide in the shopping cart in the first part of the ordering process.

☑ You have planned implants. Further information is available in the section *Planning implants* [▶ *Page 210*].

☑ You have selected the desired SICAT surgical guide and sleeve system and planned the sleeve model and sleeve position D2 for each implant. Further information is available in the section *Planning sleeves* [▶ *Page 232*].

☑ The **Treat** workflow step is expanded.

1. In the **Treat** workflow step, click on **Order SICAT surgical guide** to order the selected SICAT surgical guide for the opened plan.

   ▶ If you want to order a SICAT OPTIGUIDE or SICAT DIGITALGUIDE, and have not yet imported and registered optical impressions, you can choose between:
   – Importing and registering optical impressions. For more information, see *Optical impressions* [▶ *Page 190*].
   – Continue ordering without optical impressions. In this case, send a stone model of the corresponding jaw to SICAT. SICAT will then create the necessary optical impression based on the stone model.

   ▶ The **Order SICAT surgical guide** window appears:

2. In the **Patient** and **Order Details** areas, check that the patient information and order details are correct.

3. **Selecting inner sleeves for the "SICAT Sleeve-in-Sleeve" sleeve system:** If you have selected "SICAT Sleeve-in-Sleeve" as sleeve system, select the inner diameter of the first inner sleeve and the inner diameter of the second inner sleeve in the **Order Details** area. If you only want one inner sleeve, select "None" in the second field for **inner sleeves**.

4. Check the plan. In particular, you need to make sure that the order is based on the correct plan and that all implants, sleeves and sleeve positions are correct.

   ▶ If an implant does not fullfill all requirements for ordering, SICAT Implant displays the warning symbol ⚠ before the implant position to alert you. If you place the mouse pointer over the warning symbol ⚠, a corresponding message is displayed.
   The requirements for ordering are not fulfilled in any of the following cases:
   – If the implant is not compatible with the sleeve system.
   – If "CEREC Guide Drill Keys" is selected as sleeve system and the sleeve position has not yet been planned.
   – If the safety distance is violated.
   In these cases, you can cancel the order and resolve the problem. If safety distances are violated, you can also specify that you are aware of the problem in the **Confirmation** area in order to still be able to place the surgical guide in the shopping cart.

5. If desired, enter additional information for SICAT in the **Additional information** field.

6. If you are using a fully guided surgical system for the first time for an order, confirm that you have the appropriate surgical kit in the **Confirmation** area.

7. Click on the **Add to shopping cart** button.

   ▶ SICAT Implant places the desired SICAT surgical guide with the planning data in the SICAT Suite shopping cart.

   ▶ SICAT Implant creates a copy of the plan with the status "Finalized". This allows you to later view the plan on the basis of which you are ordering the SICAT surgical guide without any changes.

   ▶ SICAT Implant closes the **Order SICAT surgical guide** window.

   ▶ SICAT Implant opens the SICAT Suite shopping cart.

8. Continue with the section *Checking the shopping cart and completing the order [▶Page 245]*.

9. **Ordering of a SICAT CLASSICGUIDE:** Fix the radiographic template to the stone model and send it to SICAT.

ⓘ Implants in both jaws planned
If you have planned implants in both jaws, SICAT Implant shows a window for selecting the jaw before the **Order SICAT surgical guide** window is displayed. Select the first jaw for which you want to order the surgical guide. After you have placed the surgical guide for the first jaw in the shopping cart, you can place the surgical guide for the second jaw in the shopping cart by clicking on the **Order SICAT surgical guide** button again.

ⓘ Ordering a SICAT CLASSICGUIDE
Fix the radiographic template to the stone model and send it to SICAT. The order can only be processed and the production of the SICAT **CLASSIC**GUIDE can only be started after SICAT has received the parcel.

38.2 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 245]*

38.3 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 244]*.
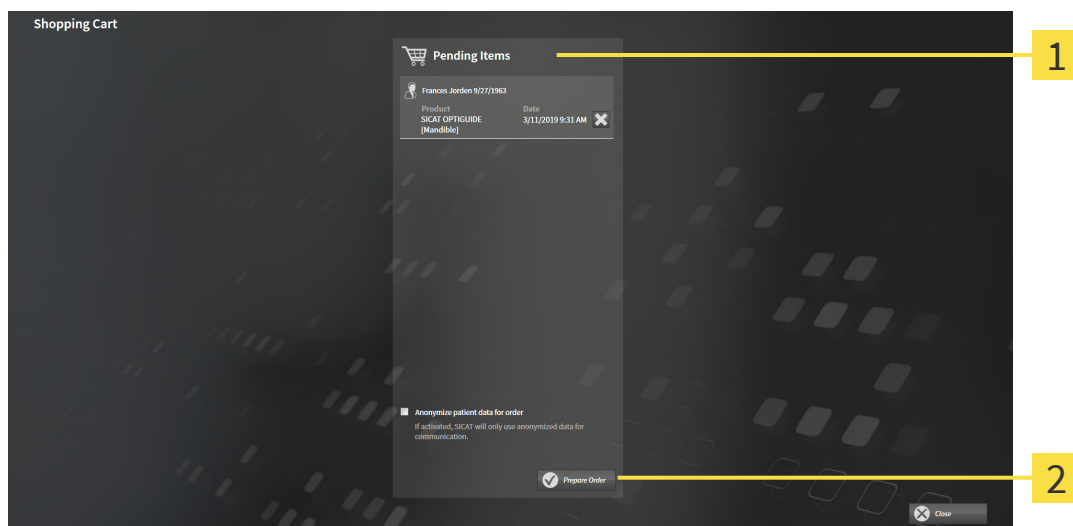
1 **Pending Items** list

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 246]*

■ *Completing an order without an active Internet connection [▶Page 250]*

38.4 COMPLETING AN ORDER USING AN ACTIVE INTERNET CONNECTION

> ℹ️ 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 267]*.

☑ 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 247]*.

► 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**.

> ℹ️ 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.

> ℹ️ 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.

38.5 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.

38.6 THE SICAT WEBCONNECTOR

> **i**   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].*

> **i**   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 Implant 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:
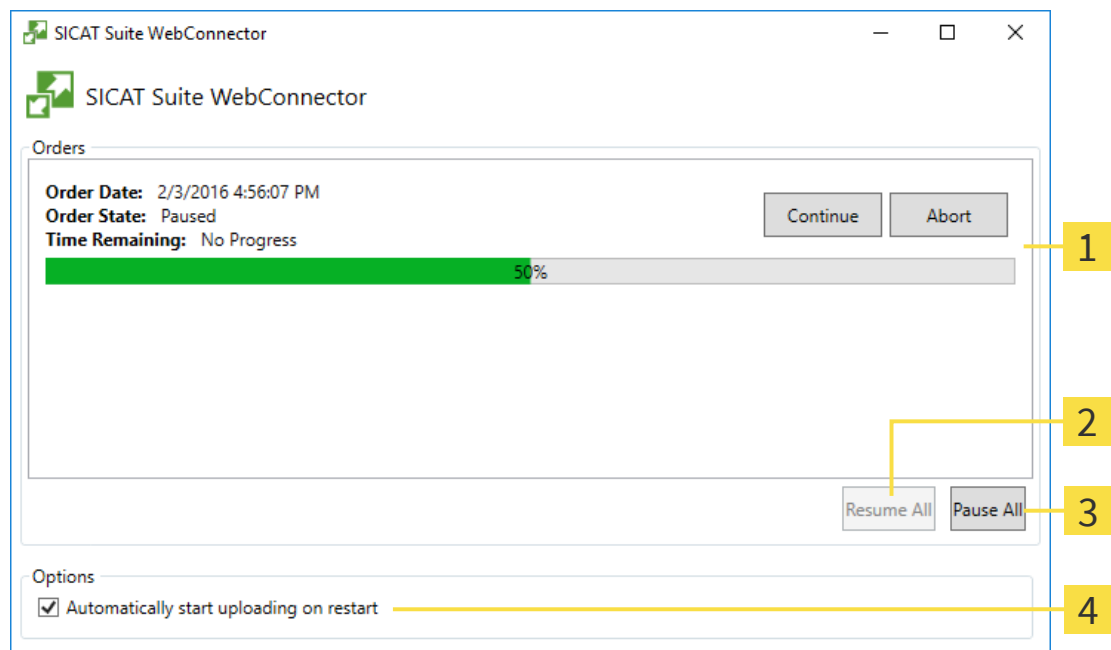
| **1** | **Orders** list | **3** | **Stop all** button |
| **2** | **Continue all** button | **4** | **Continue uploading automatically after restart** check box |

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.

38.7 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**
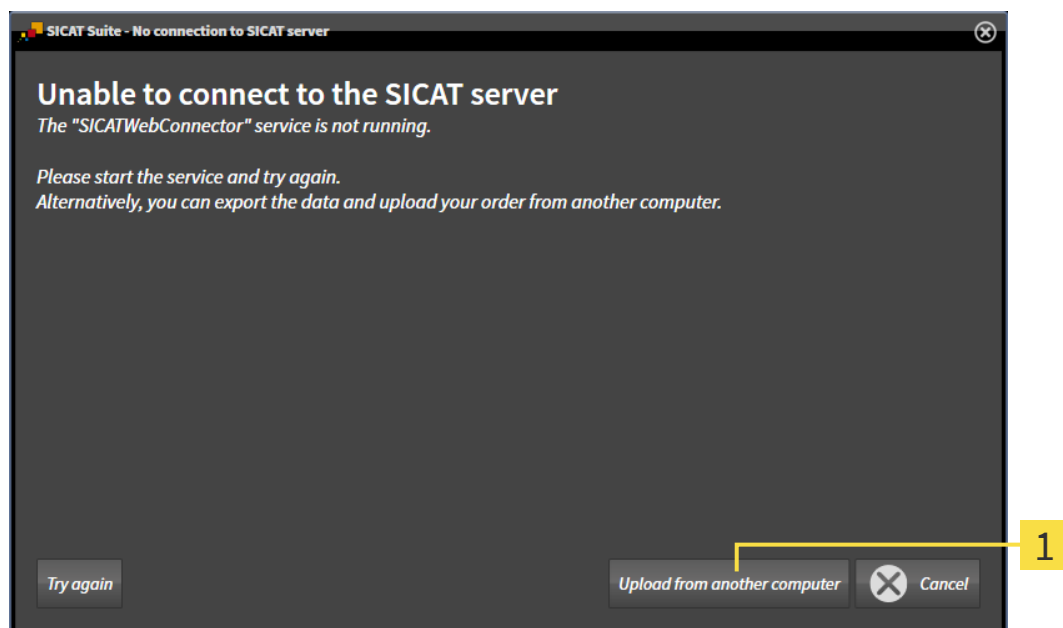
1   **Upload from another computer** button

1. Click on the **Upload from another computer** button.

► The **Sending the order from another computer** window opens:
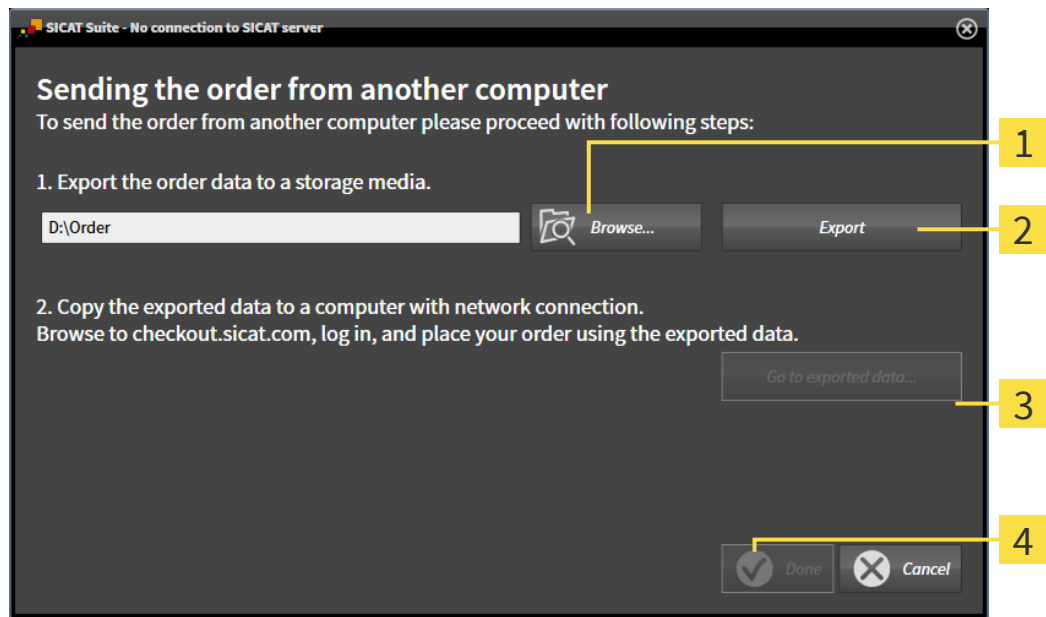
1	**Browse** button	**3**	**Go to exported data** button
2	**Export** button	**4**	**Done** button

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:
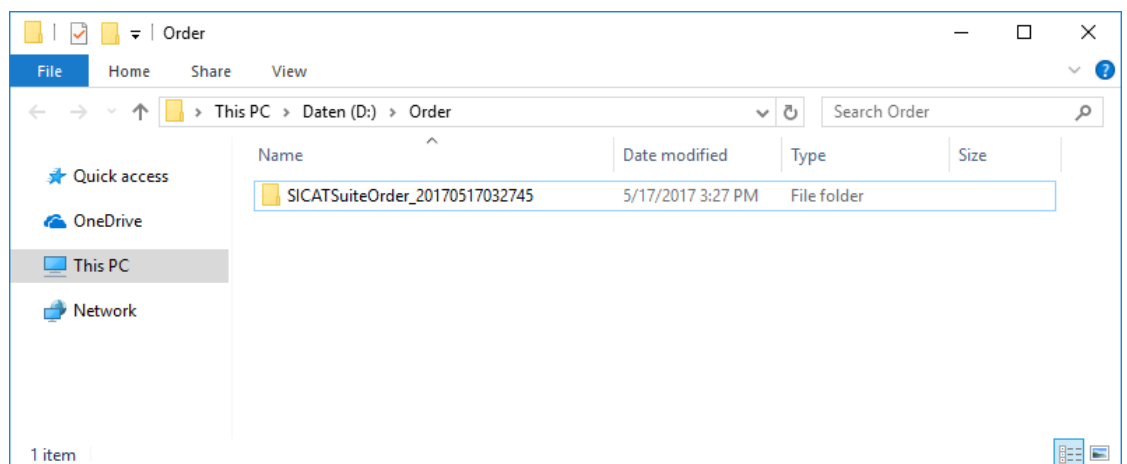
6. Copy the folder that contains the data of the required appliances to a computer with an active Internet connection, for example using a USB stick.

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 247]*.

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.

> **i** SICAT Suite does not automatically delete exported data. When an ordering process is completed, you should delete exported data manually for security reasons.

39 EXPORTING FOR CEREC GUIDE

⚠️ **CAUTION**	**An export for the CEREC Guide based on an incorrect plan or incorrect export data for the CEREC Guide could result in incorrect treatment.** Make sure that your export for the CEREC Guide is based on the correct plan and that you select and submit the correct data for the export.

⚠️ **CAUTION**	**When you make an export for a CEREC Guide, SICAT Implant only takes into account the optical impressions you selected. Incorrectly selected optical impressions could result in incorrect treatment.** 1. Make sure that you have selected the correct optical impressions for the CEREC Guide when exporting. 2. Make sure that the selected optical impressions cover all implant positions.

⚠️ **CAUTION**	**Incorrect sleeve positions could result in incorrect treatment.** Place the sleeves exactly in the position needed for the final creation of the CEREC Guide and the treatment. When your plan for a CEREC Guide is further processed, the sleeve positions will be used exactly as you planned. After the export for a CEREC Guide, the sleeve positions can no longer be changed during the rest of the workflow.

In addition to ordering a SICAT surgical guide, you can also export your planning for the production of a CEREC Guide based on optical impressions.

SICAT Implant supports two options for performing an export for a CEREC Guide:

- Export for CEREC Guide based on optical impressions in SIXD format, see section *Exporting for CEREC Guide based on optical impressions in SIXD format [▶Page 254]*. Use this option for the CEREC Guide 3 or CEREC Guide 2 workflow if you are using the CEREC software version 5.1 or higher. With this option, you can also transmit the data to the CEREC software via the Hub.

- Export for CEREC Guide based on optical impressions in SSI format, see section *Exporting for CEREC Guide based on optical impressions in SSI format [▶Page 257]*. Use this option for the CEREC Guide 2 workflow if you are using CEREC software in a version that is lower than 5.1 or if you are using the in-Lab software.

ℹ️	Refer to the instructions for use of the CEREC Guide for information on the possible applications and the selection of the appropriate option.

39.1 EXPORTING FOR CEREC GUIDE BASED ON OPTICAL IMPRESSIONS IN SIXD FORMAT

GENERAL REQUIREMENTS FOR EXPORT

☑ You have activated the "CEREC Guide Export" license. Further information is available in the section Licenses.

☑ You have imported and registered optical impressions (possibly with restorations) in SIXD format that cover all implant positions. Further information is available in the section *Optical impressions [▶Page 190]*.

☑ You have planned implants. Further information is available in the section *Planning implants [▶Page 210]*.

☑ **Optionally:** You have planned TiBases. Further information is available in the section *Planning abutments [▶Page 225]*.

☑ **CEREC Guide 3 workflow:** You have selected "CEREC Guide" as surgical guide and a fully guided sleeve system supported by the CEREC Guide 3. You have planned the sleeve model and the sleeve position D2 for each implant according to the CEREC specifications. Further information is available in the section *Planning sleeves [▶Page 232]*.

☑ **CEREC Guide 2 workflow:** You have selected "CEREC Guide" as surgical guide and the "Dentsply Sirona – CEREC Guide Drill Keys" sleeve system. You have planned the sleeve model and the sleeve position D2 for each implant according to the CEREC specifications. Further information is available in the section *Planning sleeves [▶Page 232]*.

Note:
Refer to the instructions for use of the CEREC Guide for further information on planning the sleeve models and the sleeve positions D2 for the CEREC Guide.

☑ The **Treat** workflow step is expanded.

1. In the **Treat** workflow step, click on **Export for CEREC Guide** to export the opened plan for the CEREC Guide.

► SICAT Implant checks whether the general export requirements with regard to optical impressions and the sleeve system are met. If one of the requirements is not met, a message containing appropriate instructions appears. Follow these instructions. If all requirements are met, the following window appears.

2. Check the patient data and, if necessary, anonymize them for export by clicking on the **Anonymize** button.

3. Select and check the optical impressions that you want to export. When exporting based on optical impressions in SIXD format, make sure that a CAD/CAM case in SIXD format is selected. The Hub icon indicates that you can send the corresponding CAD/CAM case to the Hub.
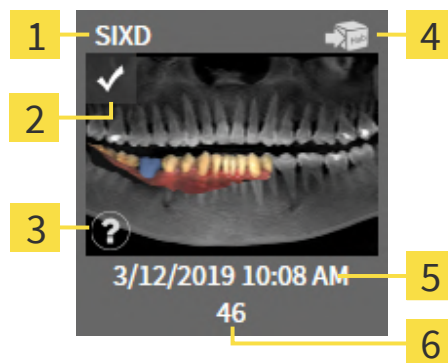
1	Data format	4	Hub icon
2	Selection check box	5	Date and time of import
3	Information window with scan date and scan system	6	Restorations

4. Check the plan. In particular, you need to make sure that the export is based on the correct plan, that none of the implants you want to export is "grayed out" and that all implants, sleeves and sleeve positions are correct.

► If an implant does not fullfill all requirements for exporting, SICAT Implant displays the warning symbol ⚠ before the implant position to alert you. If you place the mouse pointer over the warning symbol ⚠, a corresponding message is displayed.
The export requirements are not fulfilled in any of the following cases:
– If the implant position is not covered by one of the selected optical impressions.
– In the CEREC Guide 3 workflow: If the implant is not compatible with the sleeve system.
– In the CEREC Guide 2 workflow: If the sleeve position has not yet been planned.
– If the safety distance is violated.
In these cases, you can select a different optical impression or cancel the export and resolve the problem. If safety distances are violated, you can also specify that you are aware of the problem in the **Confirmation** area, which allows you to perform the export anyway.

5. **Send to Hub**: Click on **Send to Hub**. This data can be downloaded from the Hub by the CEREC software version 5.1 or higher.

6. **Export to file:** Click on **Export to file** and select a target directory to export the data as a file in CMG.DXD format, which can be imported by CEREC software version 5.1 or higher.

► After the export, SICAT Implant creates a copy of the exported plan with the status "Finalized". This allows you to view the exported plan later.

> The **Send to Hub** button is displayed when SICAT Suite is connected to a Hub and the license for using the Hub is activated.
>
> The **Send to Hub** button is enabled if the following requirements are met:
>
> - The CAD/CAM case was previously downloaded from the Hub.
> - The workflow status of the CAD/CAM case is suitable.
> - The plan containing the CAD/CAM case is not a duplicate of another plan.
> - The CAD/CAM case was not re-used from a SICAT application.

39.2 EXPORTING FOR CEREC GUIDE BASED ON OPTICAL IMPRESSIONS IN SSI FORMAT

GENERAL REQUIREMENTS FOR EXPORT

☑ You have activated the "CEREC Guide Export" license. Further information is available in the section Licenses.

☑ You have imported and registered optical impressions (possibly with restorations) in SSI format that cover all implant positions. Further information is available in the section *Optical impressions* [▶ Page 190].

☑ You have planned implants. Further information is available in the section *Planning implants* [▶ Page 210].

☑ You have selected "CEREC Guide" as surgical guide and the "Dentsply Sirona – CEREC Guide Drill Keys" as sleeve system. You have planned the sleeve model and the sleeve position D2 for each implant according to the CEREC specifications. Further information is available in the section *Planning sleeves* [▶ Page 232].

Note:
Refer to the instructions for use of the CEREC Guide for further information on planning the sleeve models and the sleeve positions D2 for the CEREC Guide.

☑ The **Treat** workflow step is expanded.

1. In the **Treat** workflow step, click on **Export for CEREC Guide** to export the opened plan for the CEREC Guide.

   ▶ SICAT Implant checks whether the general export requirements with regard to optical impressions and the sleeve system are met. If one of the requirements is not met, a message containing appropriate instructions appears. Follow these instructions. If all requirements are met, the following window appears:

2. Check the patient data and, if necessary, anonymize them for export by clicking on the **Anonymize** button.

3. Select and check the optical impressions that you want to export. When exporting based on optical impressions in SSI format, make sure that one or more CAD/CAM cases in SSI format are selected.
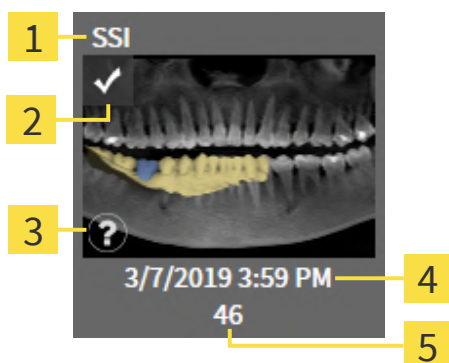
1	Data format	**4**	Date and time of import
2	Selection check box	**5**	Restorations
3	Information window with scan date and scan system		

4. Check the plan. In particular, you need to make sure that the export is based on the correct plan, that none of the implants you want to export is "grayed out" and that all implants, sleeves and sleeve positions are correct.

▶ If an implant does not fullfill all requirements for exporting, SICAT Implant displays the warning symbol ⚠ before the implant position to alert you. If you place the mouse pointer over the warning symbol ⚠, a corresponding message is displayed.
The export requirements are not fulfilled in any of the following cases:
– If the implant position is not covered by one of the selected optical impressions.
– If the sleeve position has not yet been planned.
– If the safety distance is violated.
In these cases, you can select different optical impressions or cancel the export and resolve the problem. If safety distances are violated, you can also specify that you are aware of the problem in the **Confirmation** area, which allows you to perform the export anyway.

5. Click on **Export to file** and select a target directory to export the data as a file in CMG.DXD format, which can be imported by the CEREC software or the inLab software.

▶ After the export, SICAT Implant creates a copy of the exported plan with the status "Finalized". This allows you to view the exported plan later.

40 CREATING PLANNING REPORTS

> **⚠ CAUTION**
>
> **Planning reports are intended exclusively for documentation purposes. Using the planning report for diagnostic purposes or treatment planning may result in an incorrect diagnosis and treatment.**
>
> For diagnostic purposes and treatment planning, only use the SICAT Implant views for displaying medical imaging data.

You can document your implant planning in a planning report.

If you order a SICAT surgical guide, you will be sent a surgical guide report for the surgery. If you use the CEREC Guide, you can also use the planning report as surgical guide report for the surgery.

A planning report contains an overview page with all implants and a detail page for each implant containing detailed information on the corresponding implant. You can save the planning report as a PDF file or print it.

OPENING THE "CREATE PLANNING REPORT" WINDOW

☑ You have planned implants. Further information is available in the section *Planning implants [▶Page 210]*.

☑ The **Treat** workflow step is expanded.

■ In the **Treat** workflow step, click on **Create planning report** to create a planning report for the opened plan.

▶ The **Create Planning Report** window opens:
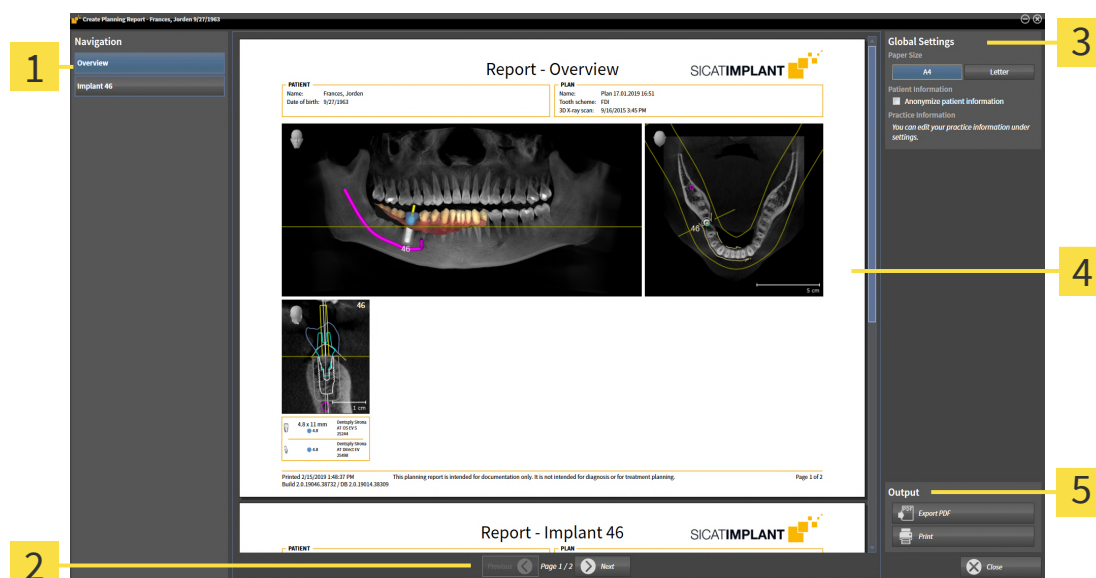
1	**Content** area	**3**	**Global Settings** area
2	Page navigation	**4**	Preview
		5	**Output** area

> **i** **Implants in both jaws planned**
> If you have planned implants in both jaws, SICAT Implant shows a window for selecting the jaw before the **Create planning report** window is displayed. Select the jaw for which you want to create the planning report.

CHANGING PLANNING REPORT SETTINGS

1. Click on the button with the desired paper size in the **Global Settings** area.
   - ► SICAT Implant changes the paper size according to the selected setting.

2. Activate or deactivate the **Anonymize patient information** check box.
   - ► SICAT Implant shows the actual patient information or anonymized patient information on the report according to the selected setting.

SAVING A PLANNING REPORT AS A PDF FILE

1. Click on the **Export PDF** button in the **Output** area.
   - ► A Windows Explorer window opens.

2. Switch to the directory in which you want to save the planning report.

3. Enter a name in the **File name** field and click on **Save**.

► The Windows Explorer window closes.

► SICAT Implant saves the planning report as a PDF file.

> **i** SICAT Implant also saves the encrypted PDF file in the patient record.

PRINTING A PLANNING REPORT

> **i** Planning 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]*.

1. Click on the **Print** button.
   - ► The **Print** window opens.

2. Select the desired printer and adjust the print settings where necessary.

3. Click on **Print**.

► SICAT Implant sends the planning report to the printer.

EXPLANATIONS REGARDING THE PLANNING REPORT
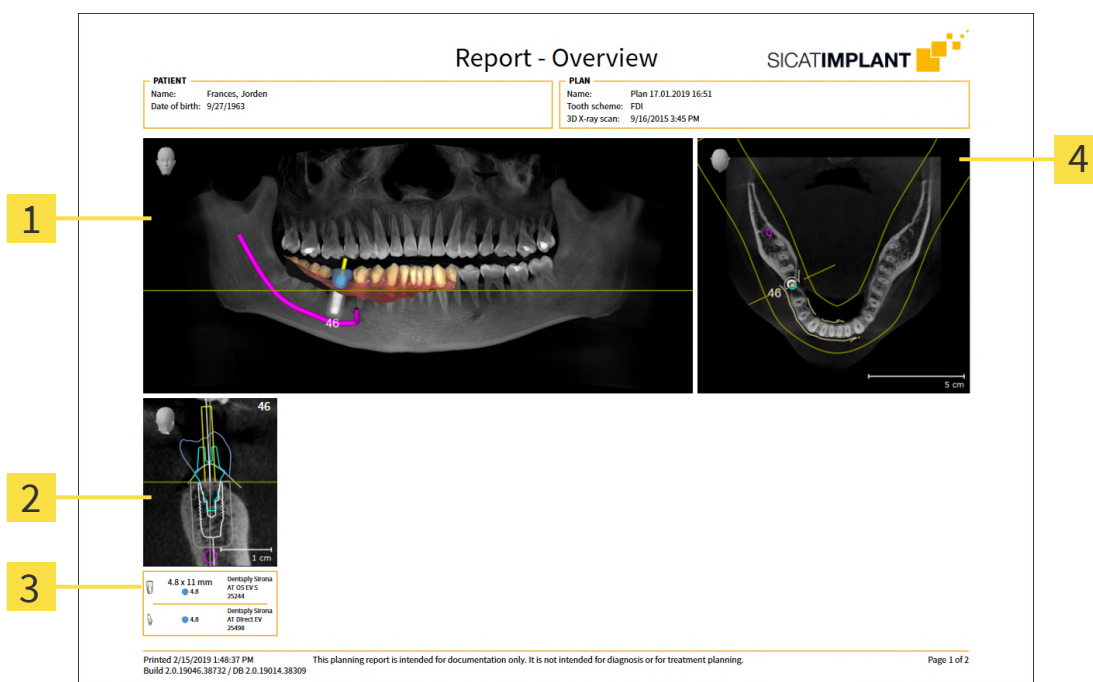
1 **Panorama** view

2 Implant-aligned **Cross-Sectional** view for each implant

3 Dimensions and model information for each implant

4 **Axial** view
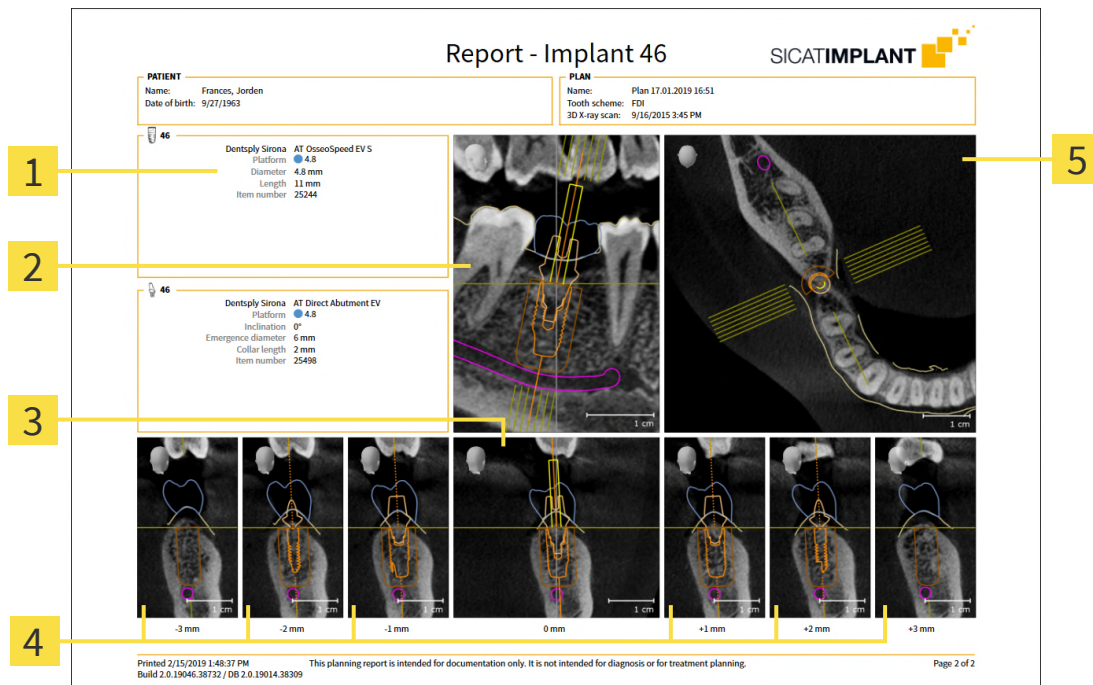
1 Dimensions and model information

2 Implant-aligned **Tangential** view

3 Implant-aligned **Cross-Sectional** view

4 Views parallel to the **Cross-Sectional** view

5 **Axial** view

Display of objects

Implants are always shown in the planning report. Sleeves are not shown in the planning report for a SICAT surgical guide because the sleeve information in the SICAT surgical guide report, which you receive with the SICAT surgical guide, is relevant. All other objects are shown in the planning report if they are shown in SICAT Implant when you create the planning report.

41 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 264]*.

- Export the desired data. Information on this can be found in the section *Exporting data [▶Page 265]*.

41.1 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 265]*.

41.2 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 264]*.
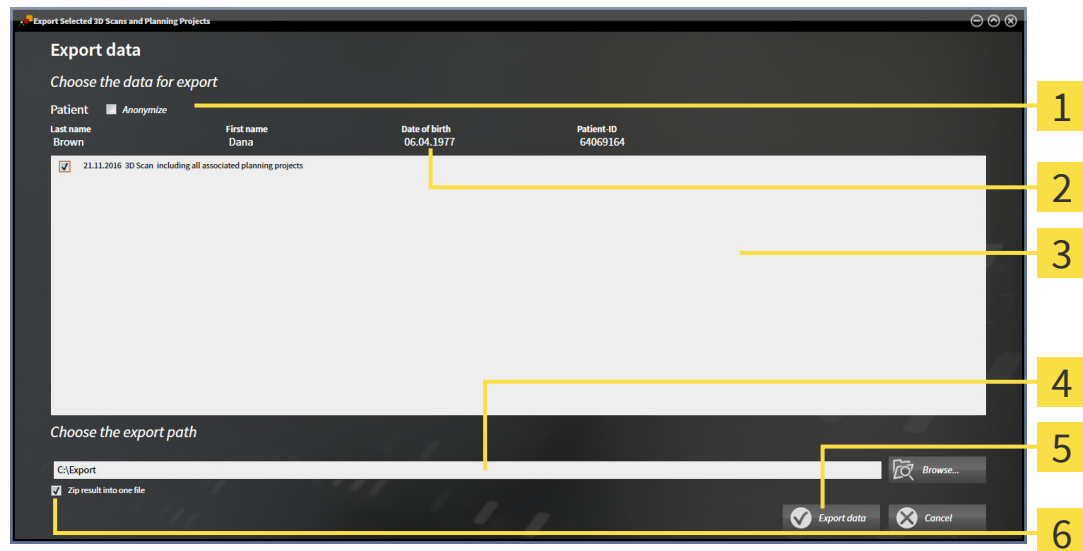
1	**Anonymize** check box	**4**	**Choose the export path** field
2	Attributes of the patient record	**5**	**Export data** button
3	List of 3D studies	**6**	**Zip result into one file** check box

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.

42 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 267]*.

- **Patient Database** - You can define the connection to a patient database. Information on this can be found in the section *Patient database [*▶*Page 74]*.

- **Licenses** - Information on this can be found in the section *Licenses [*▶*Page 63]*.

- **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 271]*.

- **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 272]*.

- **Visualization** – Changing general visualization settings. Information on this can be found in the section *Changing visualization settings [*▶*Page 274]*.

- **SICAT Implant** – Changing application-specific settings of SICAT Implant. Information on this can be found in the section *Changing SICAT Implant settings [*▶*Page 276]*.

If you change the settings, SICAT Implant will apply the changes immediately and saves the settings in your user profile.

42.1 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:
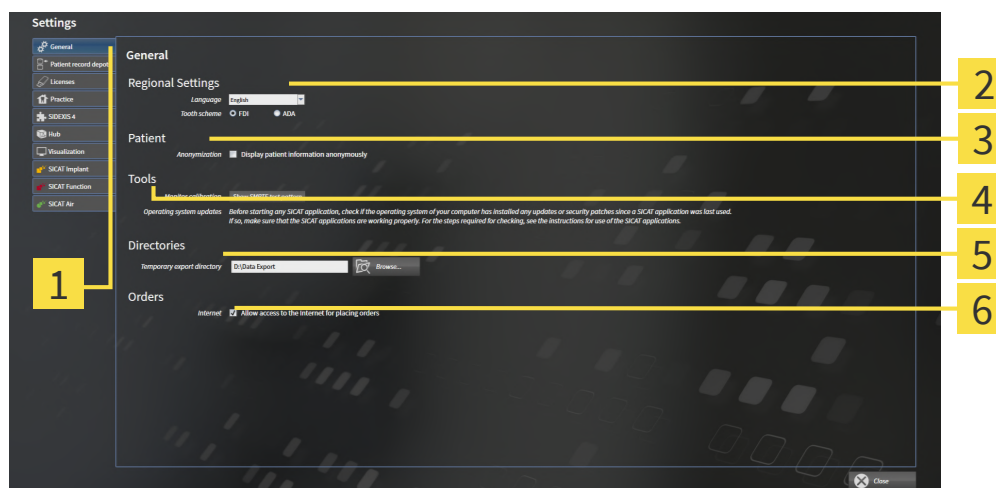
1	**General** tab	**4**	**Tools** area
2	**Regional Settings** area	**5**	**Directories** area
3	**Patient** area	**6**	**Orders** area

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 [▶Page 269]*.

> **i** The supported tooth schemes are FDI and ADA.

42.2 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:
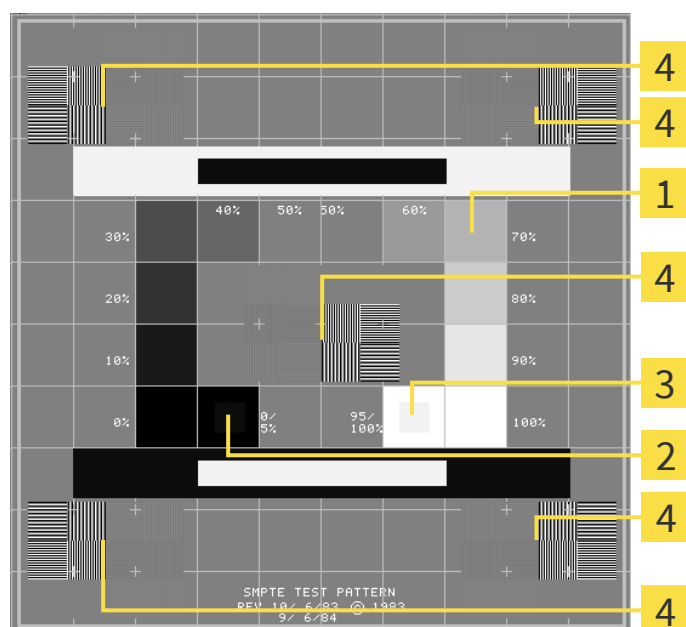
1	Gray scale squares	3	100% square
2	0% square	4	Squares containing a sample bar with a high contrast

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.

42.3 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:
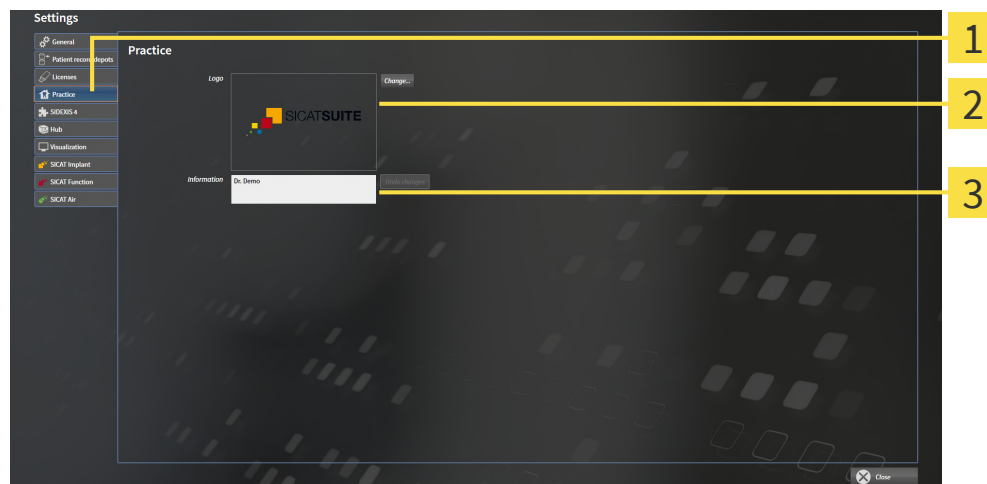
1 **Practice** tab

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.

42.4 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 63]*.

1. Click on the **Settings** icon in the **Navigation bar**.
   ► The **Settings** window opens.

2. Click on the **Hub** tab.
   ► The **Hub** window opens:
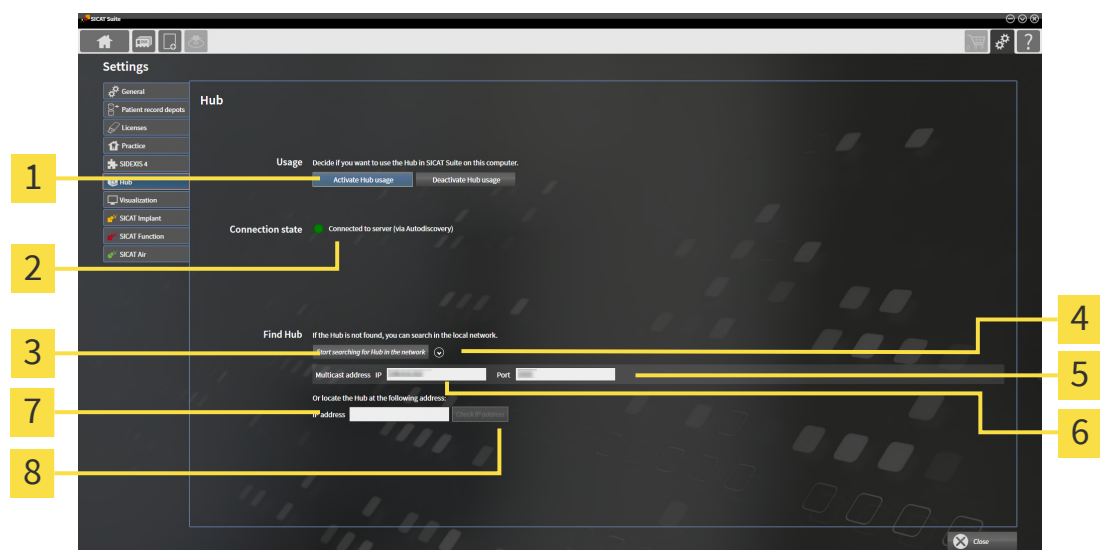
1	**Activate Hub usage** and **Deactivate Hub usage**	**5**	Input field **Port**
2	**Connection state**	**6**	Input field **Multicast address IP**
3	**Start searching for Hub in the network** button	**7**	Input field **IP address**
4	Show and hide	**8**	**Check IP address** button

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.

42.5 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:
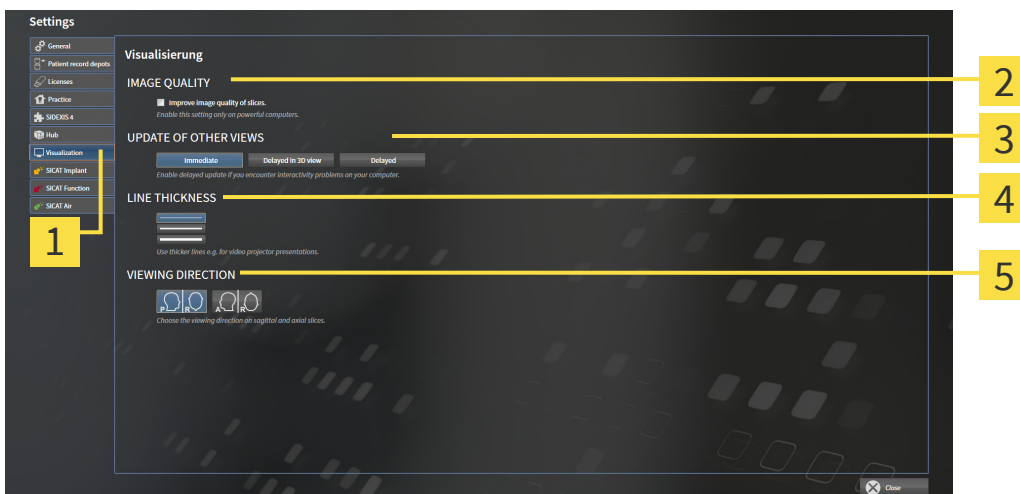
1	**Visualization** tab	**4**	**LINE THICKNESS** area
2	**IMAGE QUALITY** area	**5**	**VIEWING DIRECTION** area
3	**UPDATE OF OTHER VIEWS** area		

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.

42.6 CHANGING SICAT IMPLANT SETTINGS

You can change the following SICAT Implant settings:

■ **Preferred implant lines** - Information on this can be found in the section *Defining preferred implant lines [*▶*Page 277]*.

■ **Safety Margins** - Information on this can be found in the section *Defining safety margins [*▶*Page 279]*.

■ **Channels** - Information on this can be found in the section *Defining channels [*▶*Page 280]*.

42.6.1 DEFINING PREFERRED IMPLANT LINES

You can save the implant lines from the SICAT Implant Database that you use in your practice as favorites. When you plan your implants, the implant lines that you have selected as favorites will then be shown for selection.

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

   ▶ The **Settings** window opens.

2. Click the **SICAT Implant** tab.

   ▶ The **SICAT Implant** window opens.

3. Click on the **SICAT Implant Database** tab.

   ▶ The **SICAT Implant Database** page opens:
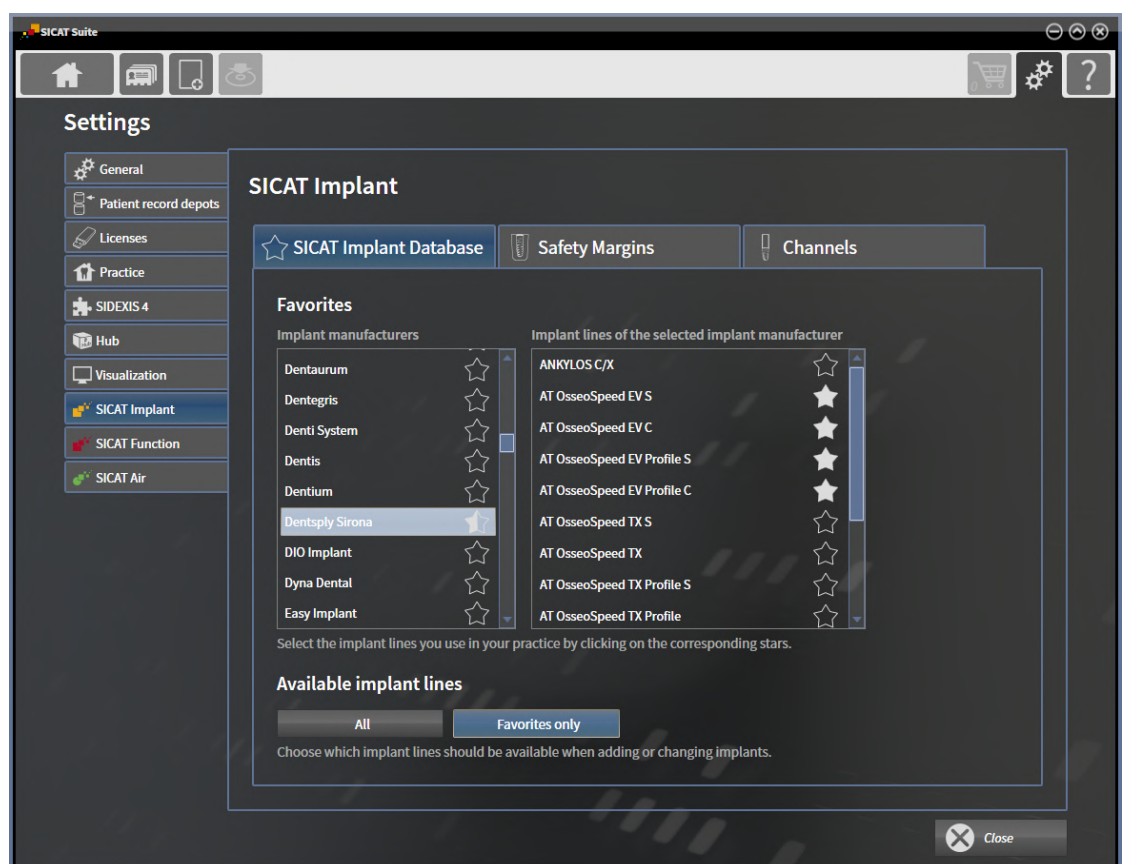
4. In the list on the left, click on the first implant manufacturer that you use in your practice.

   ▶ SICAT Implant shows all implant lines of the selected implant manufacturer in the list on the right.

5. **Selecting all implant lines of the selected manufacturer as favorites:** Click on the icon next to the manufacturer until the ★ icon appears.

6. **Deselecting all implant lines of the selected manufacturer as favorites:** Click on the icon next to the manufacturer until the ☆ icon appears.

7. **Selecting specific implant lines of the selected manufacturer as favorites:** Click on the icon next to the implant lines until the ★ icon appears.

8. **Deselecting specific implant lines of the selected manufacturer as favorites:** Click on the icon next to the implant lines until the ☆ icon appears.

9. In the list on the left, click on the next implant manufacturer that you use in your practice and continue with step 6.

10. Click on **Close**.

> ℹ **Including all implant lines or favorites only**
>
> If you want to see all available implant lines instead of only your favorites when planning your implants, click on the **All** button under **Available implant lines**.
>
> If you want to see only your favorites when planning your implants, click on the **Favorites only** button.

42.6.2 DEFINING SAFETY MARGINS

You can adjust the dimensions of the safety margins around implants. In addition, you can choose whether you want to see safety margins in new plans. Further information on safety margins can be found in the section *Hiding and showing safety margins [▶Page 222]*.

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

   ▶ The **Settings** window opens.

2. Click the **SICAT Implant** tab.

   ▶ The **SICAT Implant** window opens.

3. Click the **Safety Margins** tab.

   ▶ The **Safety Margins** page opens:
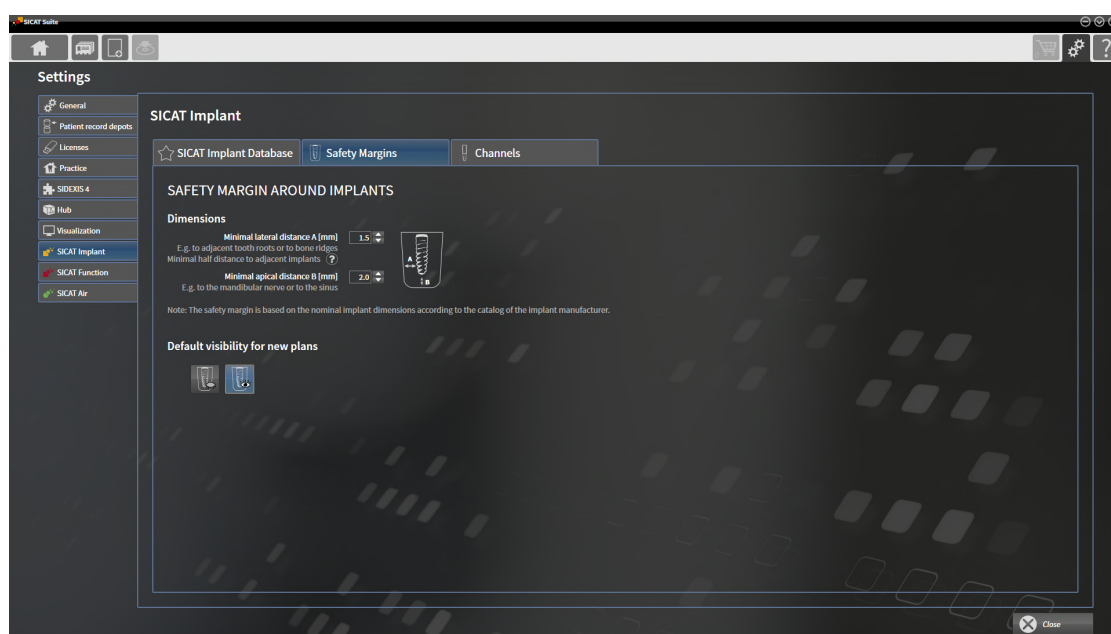
4. **Setting dimensions for safety margins:** Either enter the distances directly in the fields **Minimal lateral distance** and **Minimal apical distance** or use the arrow keys to adjust the distances.

5. **Initially hiding safety margins in new plans:** Click on the **Hide safety margins** button under **Default visibility for new plans**.

6. **Initially showing safety margins in new plans:** Click on the **Show safety margins** button under **Default visibility for new plans**.

7. Click on **Close**.

> During planning, you can hide or show the safety margins. Further information on this can be found in the section *Hiding and showing safety margins [▶Page 222]*.

42.6.3 DEFINING CHANNELS

You can adjust the diameter of the pilot drill channels and the length of the channels. In addition, you can select whether you want to see pilot drill channels, implant channels or no channels in new plans. Further information on channels can be found in the section *Hiding and showing channels [▶Page 223]*.

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

   ▶ The **Settings** window opens.

2. Click the **SICAT Implant** tab.

   ▶ The **SICAT Implant** window opens.

3. Click the **Channels** tab.

   ▶ The **Channels** page opens:
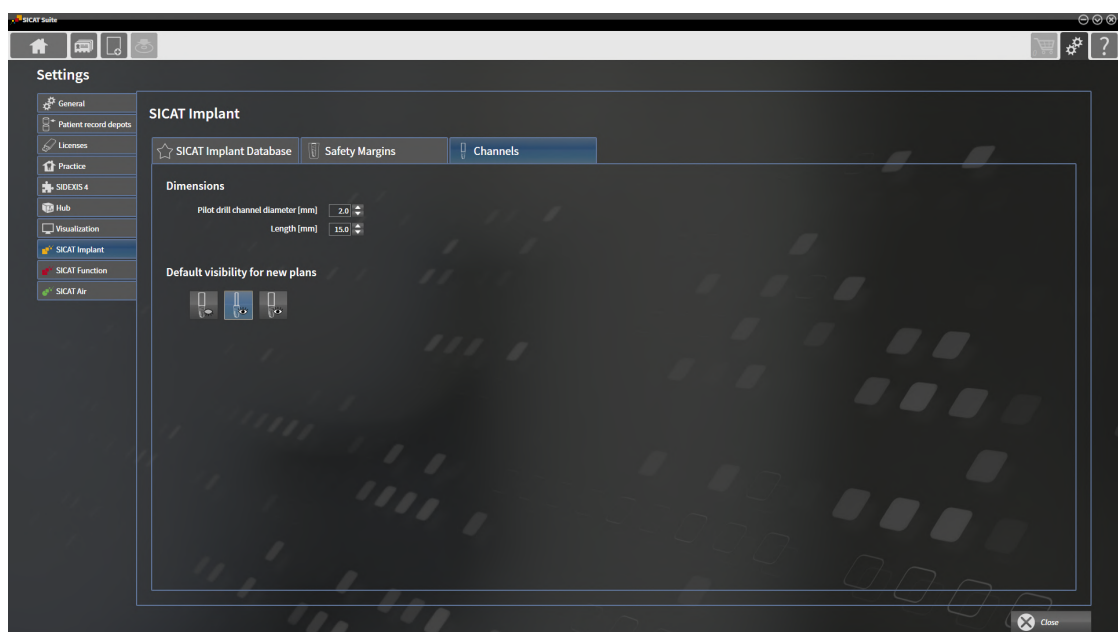
4. **Setting dimensions for channels:** Either enter the values directly in the fields **Pilot drill channel diameter** and **Length** or use the arrow keys to adjust the values.

5. **Initially hiding channels in new plans:** Click on the **Hide channels** button under **Default visibility for new plans**.

6. **Initially showing pilot drill channels in new plans:** Click on the **Show pilot drill channels** button under **Default visibility for new plans**.

7. **Initially showing implant channels in new plans:** Click on the **Show implant channels** button under **Default visibility for new plans**.

8. Click on **Close**.

> ℹ️ During planning, you can hide or show the channels. Further information on this can be found in the section *Hiding and showing channels [▶Page 223]*.

43 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 282]*
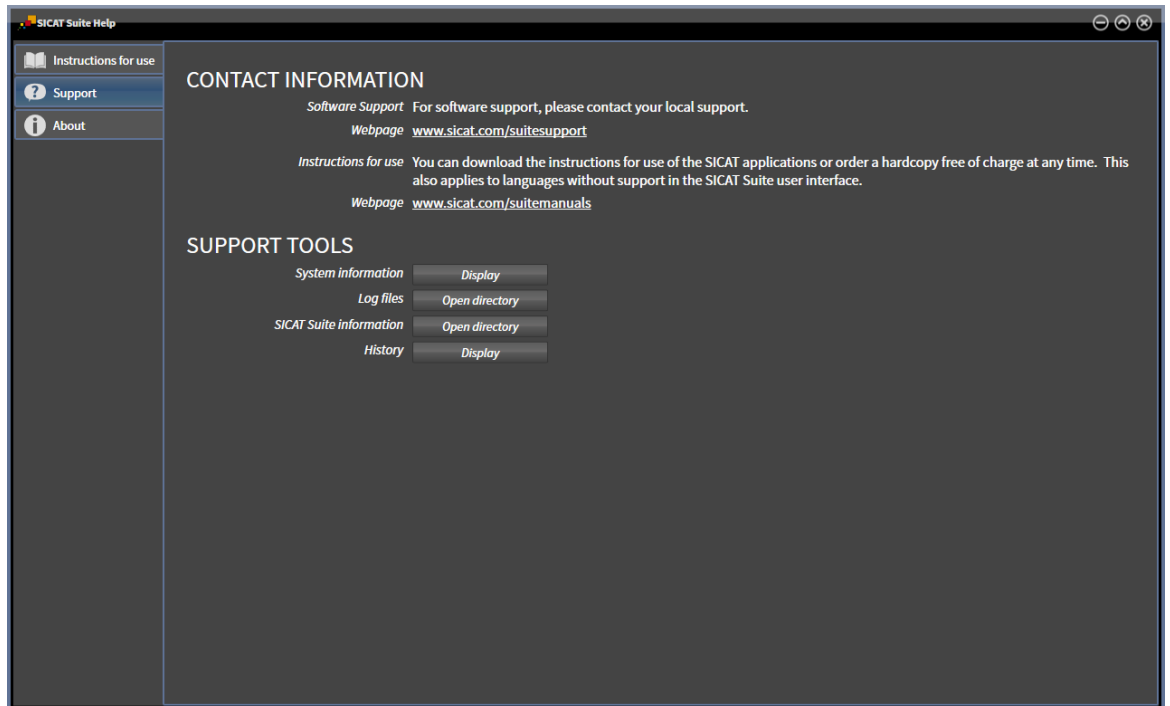
43.1 OPENING THE SUPPORT OPTIONS

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 62]*.

- **Support** - Information on this can be found in the section *Contact information and support tools [▶Page 283]*.

- **About** - Information on this can be found in the section Info.

43.2 CONTACT INFORMATION AND SUPPORT TOOLS

The **Support** window contains all of the relevant information and tools to enable SICAT Support to help you:
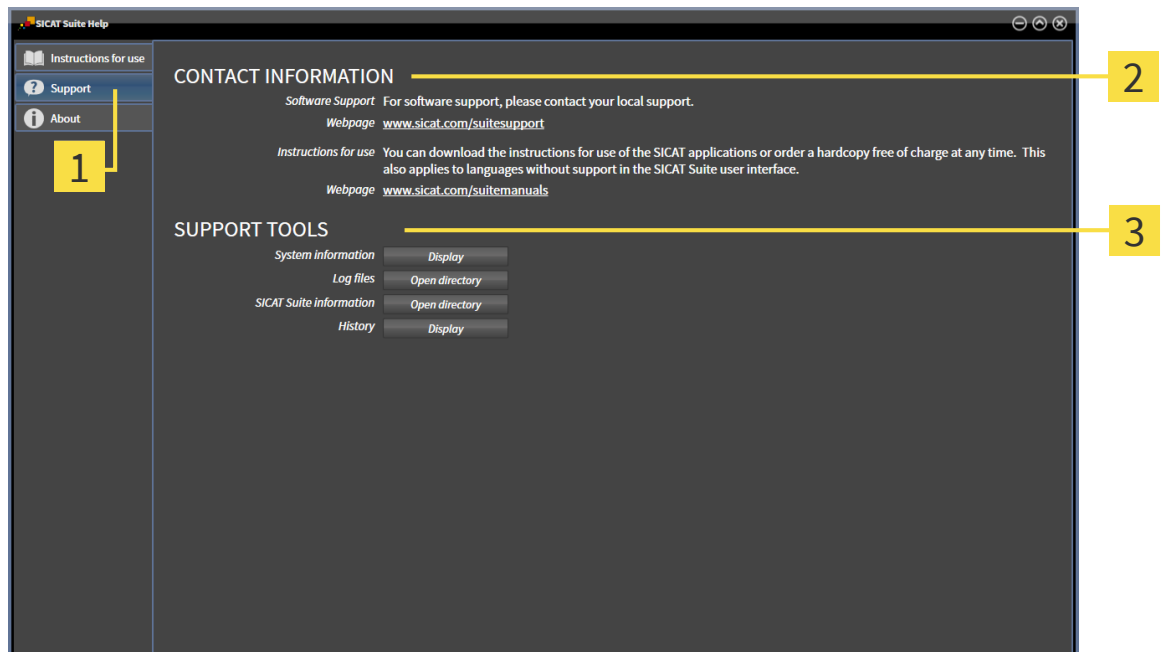
| 1 | **Support** tab | 3 | **SUPPORT TOOLS** area |
| 2 | **CONTACT INFORMATION** area | | |

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 Implant will open the system information of the operating system.

■ Click on the **Open directory** button in the **Log files** area and SICAT Implant 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 Implant will show the message window.

43.3 ABOUT

The **About** tab displays information on SICAT Suite and all installed SICAT applications on several tabs:
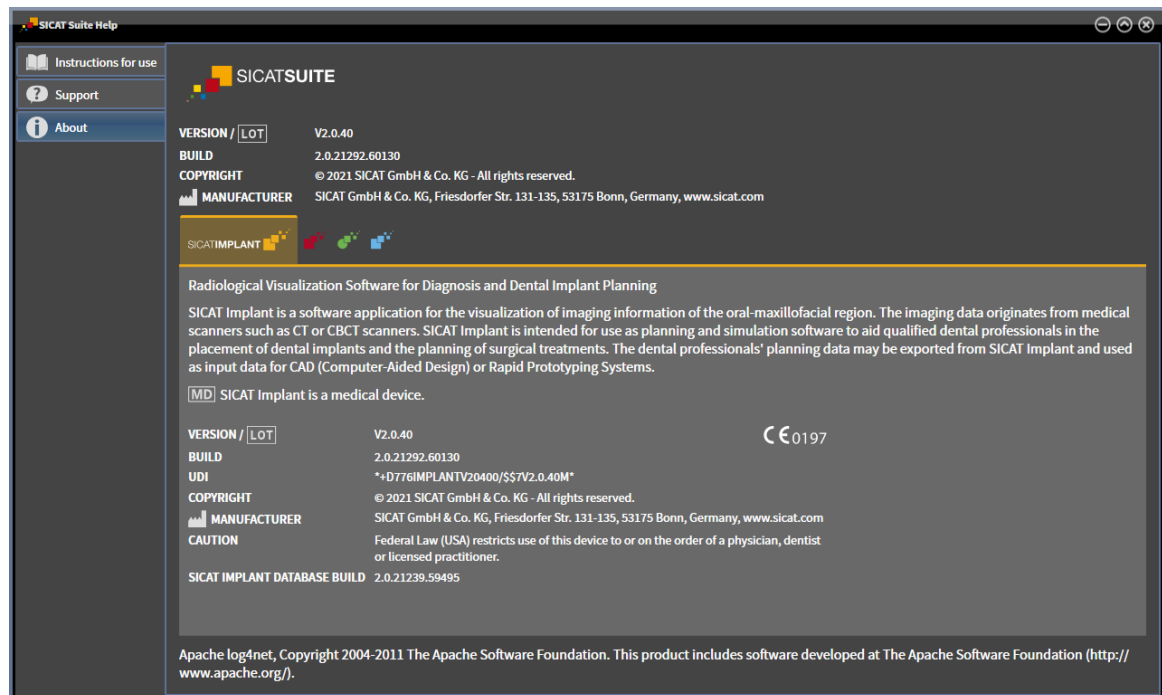
44 OPENING READ-ONLY DATA

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 IMPLANT 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 Implant.

See also

▶ Working with patient records [▶ 100]

45 CLOSING SICAT IMPLANT

To close SICAT Implant, 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.

46 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.

47 KEYBOARD SHORTCUTS

> ℹ️ If you move the mouse pointer over certain functions, SICAT Implant 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

The following keyboard shortcuts are also available for SICAT Implant:

KEYBOARD SHORTCUTS	DESCRIPTION
E	Export for CEREC Guide
I	Add implants
N	Mark mandibular nerve
O	Order SICAT surgical guide
P	Add abutment to the (active) implant
S	Add sleeve to the (active) implant

48 UNINSTALLING SICAT IMPLANT DATABASE

To uninstall SICAT Implant Database, proceed as follows:

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

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

2. Select the **SICAT Implant Database** entry from the list. The entry contains the version of the SICAT Implant Database.

3. Click on the **Uninstall** button and confirm the prompt.

   ► The SICAT Implant Database uninstallation program starts.

   ► After the uninstallation is completed, the **CONFIRMATION** window opens.

4. Click on the **Finish** button.

► The SICAT Implant Database uninstallation program closes.

> **i** To open the SICAT Implant Database uninstallation program, you can also start the SICAT Implant Database installation program on a computer, on which SICAT Implant Database is already installed.

49 UNINSTALLING SICAT SUITE

> ℹ 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 71]*.

> ℹ 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 248]*.

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.

> ℹ 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.

> ℹ 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.

50 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:
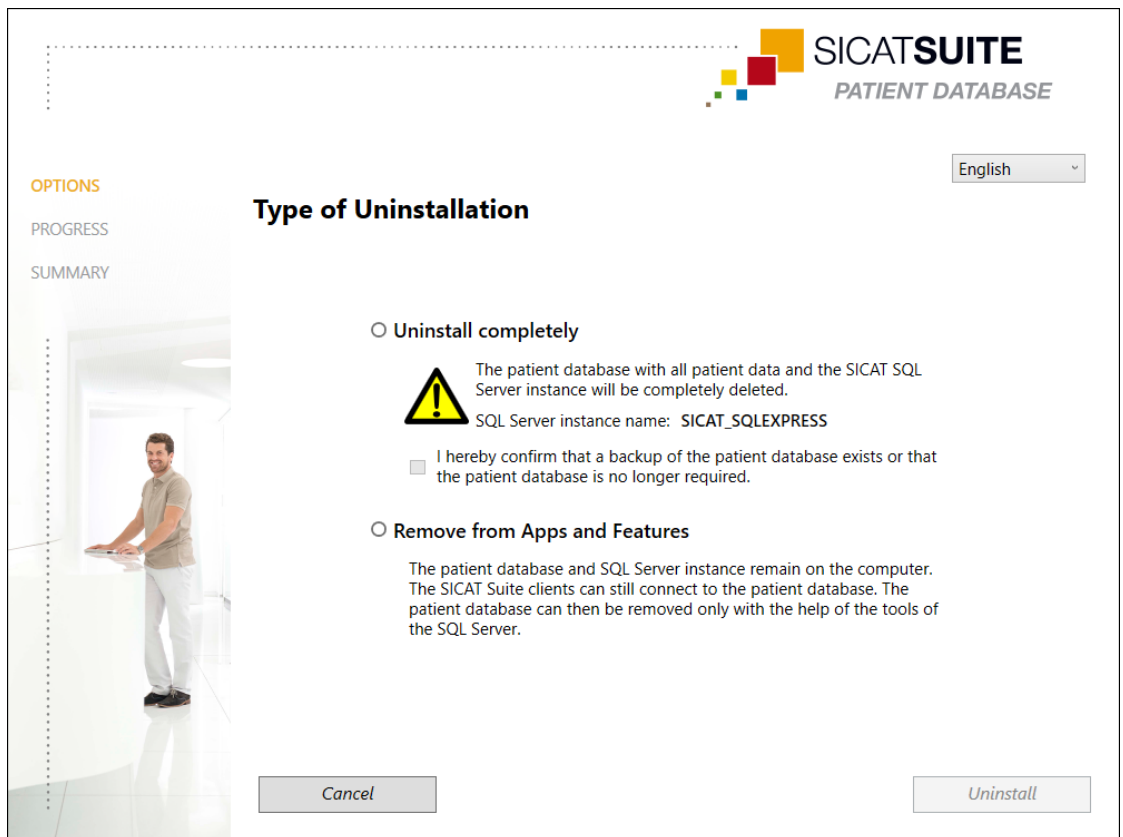
3. Select the check box **Uninstall completely** to completely uninstall the SICAT Suite Patient Database or select the check box **Remove from Apps and Features** to only remove the SICAT Suite Patient Database entry from **Programs and features**.

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.

51 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.

ORDERING SICAT SURGICAL GUIDES

⚠️ **CAUTION**	**An order based on an incorrect plan or incorrect data in an order could result in incorrect treatment.**
	Make sure that your order is based on the correct plan and that you select and submit the correct data for the order.

EXPORT FOR CEREC GUIDE

⚠️ **CAUTION**	**An export for the CEREC Guide based on an incorrect plan or incorrect export data for the CEREC Guide could result in incorrect treatment.**
	Make sure that your export for the CEREC Guide is based on the correct plan and that you select and submit the correct data for the export.

⚠️ **CAUTION**	**When you make an export for a CEREC Guide, SICAT Implant only takes into account the optical impressions you selected. Incorrectly selected optical impressions could result in incorrect treatment.**
	1. Make sure that you have selected the correct optical impressions for the CEREC Guide when exporting.
	2. Make sure that the selected optical impressions cover all implant positions.

⚠️ **CAUTION**

Incorrect sleeve positions could result in incorrect treatment.

Place the sleeves exactly in the position needed for the final creation of the CEREC Guide and the treatment. When your plan for a CEREC Guide is further processed, the sleeve positions will be used exactly as you planned. After the export for a CEREC Guide, the sleeve positions can no longer be changed during the rest of the workflow.

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.

IMPLANT PLANNING

⚠ **CAUTION**	**A plan that is intended as a basis for treatment must be lege artis. Otherwise, this might result in incorrect treatment.** You should only create plans as a basis for treatment that are lege artis.

⚠ **CAUTION**	**Implants, abutments and sleeves from the SICAT Implant Database are displayed according to the manufacturers' specifications. A deviation of the real dimensions from the manufacturers' specifications could result in incorrect treatment.** Check carefully that the displayed dimensions correspond to the real dimensions of the implants, abutments and sleeves.

⚠ **CAUTION**	**Implants from the SICAT Implant Database are displayed schematically if realistic data is unavailable or cannot be loaded. In these cases, the length and diameter of the schematic representation is based on the nominal data provided by the manufacturers. Any deviation of the nominal dimensions from the real dimensions could result in incorrect treatment.** Check carefully how the nominal dimensions provided by the manufacturers correspond to the real dimensions of the implants.

⚠ **CAUTION**	**The automatic positioning and orientation of implants based on restorations from CAD/CAM data records is only a rough initial pre-positioning and pre-alignment. It could result in incorrect treatment.** Always check implants that were automatically positioned and aligned. If necessary, adjust the positions and alignments.

⚠ **CAUTION**	**The automatic positioning of multiple implants is only a rough initial pre-positioning. It could result in incorrect treatment.** Always check implants that were automatically positioned. If necessary, adjust the positions.

⚠ **CAUTION**	**Distance warnings are only displayed if the safety distance between two implants or an implant and a marked mandibular nerve is violated. Violated minimum distances between other objects such as abutments or sleeves could result in incorrect treatment.** Always check the distances between the objects.

⚠️ **CAUTION**	**Distance warnings are not necessarily indicative of incorrect planning. An incorrect planning might result in incorrect treatment.** Always check the distances between the objects.

⚠️ **CAUTION**	**Abutments from the SICAT Implant Database are displayed as red cylinders if the realistic data cannot be loaded. In these cases, the cylinder dimensions do not correspond to the real dimensions of the planned abutments. This could result in incorrect treatment.** Repair or update the SICAT Implant Database or use generic abutments.

⚠️ **CAUTION**	**Sleeves from the SICAT Implant Database are displayed schematically when realistic data is unavailable or cannot be loaded. In these cases, the length and diameter of the schematic representation is based on the nominal data provided by the manufacturers. Any deviation of the nominal dimensions from the real dimensions could result in incorrect treatment.** Check carefully how the nominal dimensions provided by the manufacturers correspond to the real dimensions of the sleeve.

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.

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.

PLANNING REPORTS

⚠ **CAUTION**	**Planning reports are intended exclusively for documentation purposes. Using the planning report for diagnostic purposes or treatment planning may result in an incorrect diagnosis and treatment.** For diagnostic purposes and treatment planning, only use the SICAT Implant views for displaying medical imaging data.

PLANNING VARIANTS

⚠ **CAUTION**	**An Incorrect plan could result in incorrect diagnosis and treatment.** Make sure that you select the correct plan for the export.

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**	**Any changes to the SICAT Implant Database could mean that SICAT Implant does not work as intended.** 1. Do not make any changes to the SICAT Implant Database installation. 2. Do not delete or change any of the components in the SICAT Implant Database 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**	**Insufficient authorizations could cause the SICAT Implant Database installation or update to fail.** Make sure you have the proper authorizations on your system when installing or updating the SICAT Implant Database.

⚠️ **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.

52 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.

Abutment

Connecting part between implant and prosthetic restoration.

ADA

American Dental Association

Application

SICAT applications are programs belonging to SICAT Suite.

CAD/CAM case

For each imported and registered CAD/CAM data record, a corresponding CAD/CAM case is created in the object browser under "Optical impressions".

CAD/CAM data record

Patient-specific data record of a CAD/CAM system that contains one optical impression of a jaw or two optical impressions of both jaws as well as optional restorations.

Clipping

In the 3D view, temporarily cutting away parts of the volume in order to better examine the remaining part or to better assess the position of planning objects in the volume.

CMG.DXD

File format for exporting planning data for the manufacture of a CEREC Guide.

Crosshairs

Crosshairs are lines of intersection with other slice views.

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.

Implant

Artificial tooth root that is placed in the patient's jaw to fix dental prostheses.

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.

Plans

A planning project can contain several alternative treatment plans.

Restorations

A restoration is the result of modeling a digital prosthetic proposal in a CAD/CAM system based on an optical impression. Restorations allow for prosthetic-based implant planning.

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.

Sleeve

Sleeves are integrated into a surgical guide and guide your surgical instruments and, if necessary, your implant accurately to the position you have previously planned.

SMPTE

Society of Motion Picture and Television Engineers

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.

Surgical guide

Custom-made for your patient. After you have placed the surgical guide on the patient's jaw, it guides your surgical instruments and, if necessary, your implant accurately to the position you have previously planned.

TiBase

Titanium base for manufacturing an individual two-piece abutment. TiBases can be planned like standard abutments.

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 284]*.

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 284]*.

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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