Orthophos S and Orthophos SL

Axeos

SureSmile®

Dentsply Sirona Imaging Systems

Orthophos S, Orthophos SL, and Axeos

Dentsply
Sirona

Dentsply Sirona | SureSmile®

SureSmile® has its headquarters in Richardson, Texas, with offices in Berlin, Germany and St. Leonards, Australia. For general information about SureSmile®, visit the SureSmile® website at www.SureSmile.com.

Contact us for support

To contact us, please call one of the phone numbers listed below, or email us at customercare@SureSmile.com

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United States & Canada	1 888 672 6387 or 1 972 728 5902
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France	+33 (0)1 30 97 65 03
Germany	+49 625 116 16 14
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Ireland	+44 (0)1932 838323
Italy	800310333
Japan	+800 6655 1234
Lichtenstein	+41 800 33 11 99
Netherlands	+31 88 024 52 00
New Zealand	0800 336 877
Nordic Countries	+4543713377
Poland	+48 22 502 99 66
Portugal	+34 93 264 35 60
South Korea	+82 2008 7662
Switzerland	+41 800 33 11 99
United Kingdom	+44 (0)1932 838323
Note: We are currently rolling out this number on a country-by-country basis. If not yet available in your country, you can still call us by using our **All other countries** toll number below.	
All other countries	+1 972 728 5902

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About This Guide

The SureSmile treatment process supports the Extraoral 2D/3D hybrid systems Orthophos S, Orthophos SL, and Axeos. This document covers the SureSmile scanning protocols for each unit, followed by the ordering process for submitting CBCT scan data via SureScan software.

Use of CBCT Scanners with SureSmile

The following Planmeca CBCT scanners are certified for use with SureSmile

System Model	Configured with
ProMax® 3D Classic	Romexis 4.3.0 or later ProMax 3.7.0 or later
ProMax® 3D Mid	
ProMax® 3D Max	

You may use your Orthophos or Axeos system to produce three types of models for SureSmile treatment:

- **Diagnostic Model** - a model of the malocclusion comprised of individual tooth models created from a scan of a plaster model or a patient. It is used for diagnostic purposes.

- **Therapeutic Model** - a model of the patient's tooth anatomy captured in an in-vivo CBCT scan during treatment. This model is required to produce custom aligner cases.

- **Final Model -** a model of the final tooth anatomy and positions after completion of treatment from a scan of a plaster model or a patient.The table below illustrates that a model can be created from a CBCT scan of a plaster model or a CBCT scan of a patient (in-vivo), with the exception that the Therapeutic model must be taken in-vivo.

Notice an intraoral scan can supplement a CBCT scan to bypass limitations in CBCT processing or capture more teeth to produce a premium quality model (additional fee applies). Take the supplemental scan with an optical scanner such as the orascanner®, iTero®, 3shape TRIOS®, 3M™ True Definition, or CEREC® with Omnicam.

	Plaster	In-vivo	In-vivo + Supplemental Scan
Diagnostic Model	X	X	X
Therapeutic Model		X	X
Final Model	X	X	X

Prerequisite Training

Prior to conducting the SureSmile training and launch, the practice should be trained in the proper use of the DS imaging system by your authorized dealer or trainer of Dentsply Sirona.

Cybersecurity Guidelines

1. Keep your computer's operating system up to date with patches and fixes.
2. Install and maintain an anti-virus program.
3. Install and maintain a firewall between your LAN and the internet.
4. Avoid installing browser add-ins or plug-ins.
5. Avoid downloading or installing software from unknown sites
6. Create a hard to guess password by using at least 8 characters of mixed case letters, numbers, and symbols.
7. Avoid using common words or phrases.
8. Do not reuse the same password for any accounts.
9. Consider using a password program to manage passwords, such as KeePass or LastPass
10. Do not display your password where others can see it.
11. Change your password periodically, every 60 to 90 days.
12. Logout or lock your workstation when leaving your desk.
13. Avoid clicking on links in email. Instead, go directly to the site and login using your user-id and password.

Contacts for service or software issues:

For issues with SureSmile orders, software, or CBCT protocols for SureSmile, contact Customer Care per the listing on page 2 or in the SureSmile online help. To access this area, go to SureSmile via your web browser, click the ❓ icon and select "Help Center."

For issues with Orthophos and Axeos imaging systems or exporting data, please contact your authorized dealer. You can also contact Dentsply Sirona Customer Service Center by using our online contact form at the following address: http://srvcontact.sirona.com

What is SureSmile®?

The SureSmile system is the first end-to-end solution that allows the orthodontist to apply 3D diagnostic imaging and computer-aided treatment planning to produce custom appliances. This results in greater control and efficiency for orthodontic care.

The SureSmile system is comprised of several technology components:

- Scanning technologies to produce a 3D model of the patient's dentition that may be captured in an optical scan by our orascanner or a certified third-party scanner; scans may also be captured by a certified CBCT system.

- SureSmile 3D software, which provides powerful visualization tools for precision diagnosis, treatment simulation and customized appliance design. The doctor can review the digital setup with this software and use it to communicate with patients and with the SureSmile Digital Lab.

- SureScan software primarily used for scan acquisition with the orascanner or CBCT data submission

The SureSmile Digital Lab provides scan and setup processing to produce precise robotically bent custom archwires and aligners; or you may order aligners.

IMPORTANT: SureSmile does not determine patient care. SureSmile provides therapeutics as directed by the doctor. The best possible results from the SureSmile process depend on the application of the doctor's diagnostic and clinical judgment.
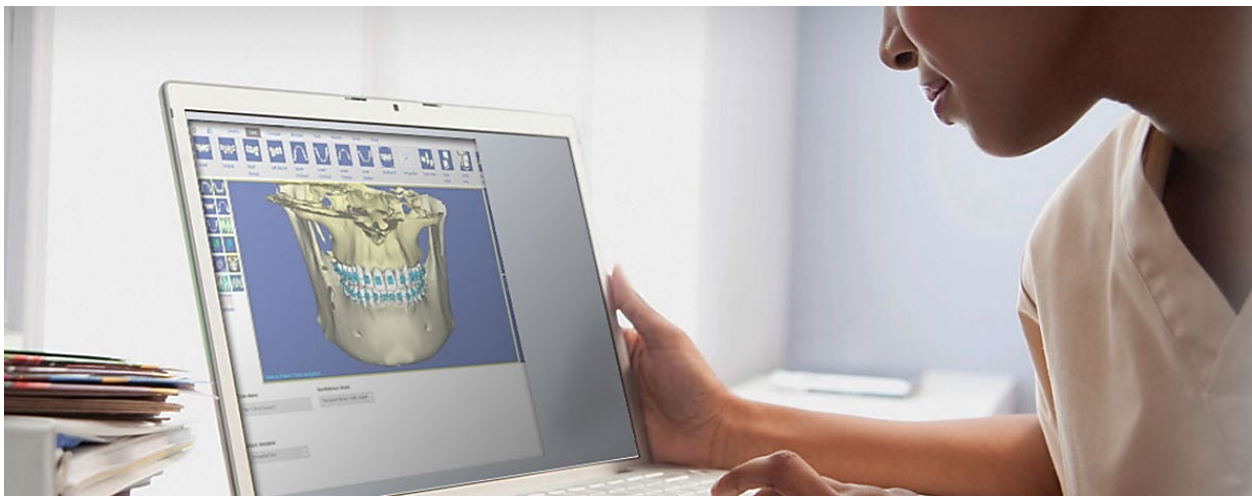
Getting Started

Prior to sending CBCT data to SureSmile, your practice must meet prerequisites that enable us to produce high quality modeling results for your patients.

Meeting System Prerequisites

1. **Validate your CBCT equipment**

    The CBCT equipment at your practice must be validated by SureSmile® to work with SureSmile before the Digital Lab can accept CBCT scans from your practice.

    As part of the setup process, Customer Care will provide a "phantom" (plastic model) for you to scan. After we receive the scan data, we will test it for accuracy and inform you of the results within 30 days. Once your system is validated, please follow the manufacturer's instructions for quality assurance.

2. **Set up a share drive for CBCT data**

    To facilitate SureSmile orders based on CBCT data, export your CBCT scan data from your CBCT system to a folder on your practice network. This folder can be located on the CBCT computer itself, a practice computer, a practice server or on some type of physical media. You will need to have your IT support provider, or your Network Administrator, set this up for you as SureSmile Customer Support cannot make changes to your practice network.

    a. Within Sidexis, go to **General Settings →** **Communications partner**

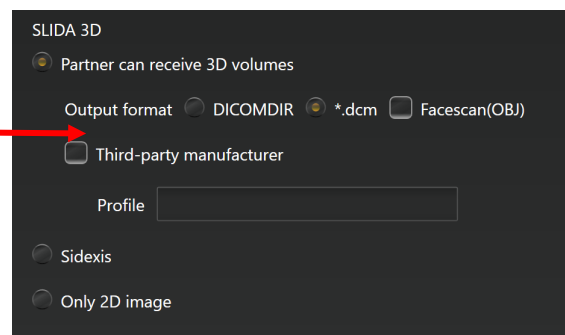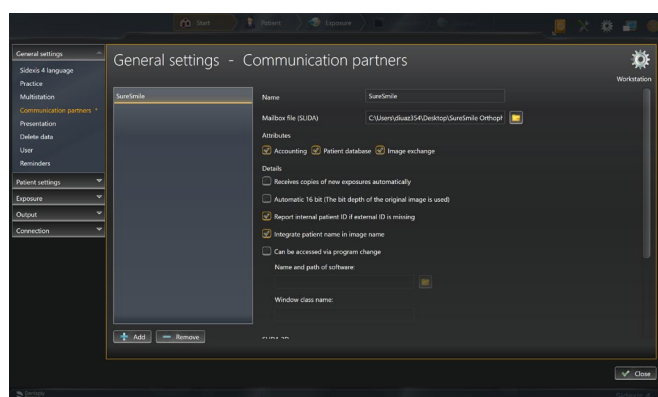   b. Click ![Add] to add a communication partner.

    c. Enter a "SureSmile" as a name

    d. Locate the **Mailbox file** (SLIDA). Click on the 📁 icon to the right to select the pathway for the mailbox file (Slida)

    e. Select all the other details as shown in the illustration to your right.

    f. Click **Close**.

    g. Restart Sidexis 4.

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3. **Check your CBCT order options**

The SureSmile scan acquisition software is called SureScan. You will find the CBCT scan option in the SureSmile browser order page. If you do not see a CBCT selection under the **Select your 3D scan data files** section, your site has not been validated for CBCT. Please contact SureSmile Customer Care for assistance.

For SureSmile Ortho and SureSmile Aligner – if you don't have SureScan downloaded on the computer you are working on, you can either go to that computer and open SureScan or download SureScan using the link on this page.
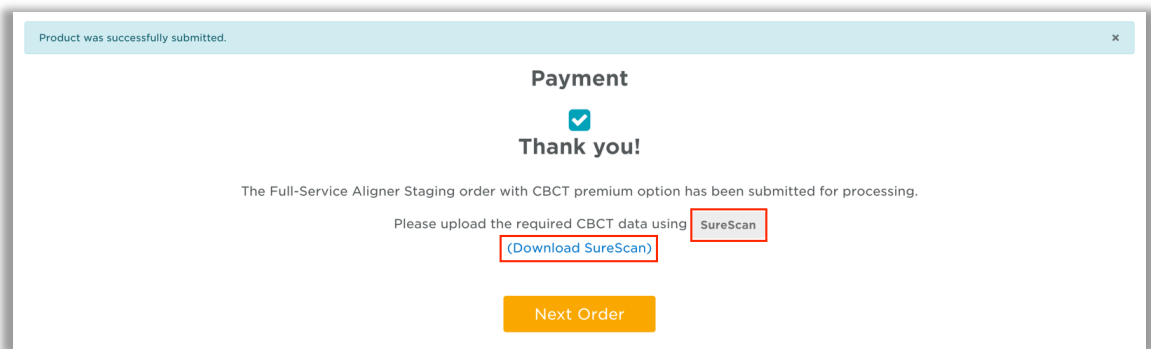
Ordering Supplies

Material for bite separation

You will need to keep bite wafers on hand to separate upper and lower teeth during the CBCT scan. (The Digital Lab cannot process CBCT scans where teeth are in contact.)

SureSmile recommends bite wafers that are a minimum of .5 mm to 1.0 mm thick. You may use any brand such as the U-Shaped wafers supplied by Modern Materials®.

Selecting Patients

When selecting patients, remember the patient must be eligible for a CBCT scan according to the manufacturer's intended use for the device and any state and local regulations.

The SureSmile system cannot create models for patients with metal appliances such as expanders.

NOTE: TADs and lingual buttons are acceptable as long as any metal appliance is not within 0.5 mm of teeth or brackets.

Considerations for Turbos

You may scan turbos whether they are composite or metal. However, if you can see the occlusal turbos on the x-ray, they will show up on the SureSmile model. Therefore, we recommend removing these turbos prior to the scan.

Alternatively, use a material for turbos that will not show up in the x-ray; for example, Transbond™ LR by Unitek.

Additional considerations for turbos:

- Remember photos must match scan data. If you left the turbos on for the scan (because the material won't interfere), leave them on for the photos.

- Don't skip the step of using the bite wafer—it ensures you have adequate separation and helps stabilize the teeth so the patient doesn't shift during the scan.

Scheduling a Supplemental Scan

For SureSmile Ortho and SureSmile Aligner cases, a full upper and lower supplemental scan is required for all orders with CBCT scans.

A CBCT scanner works by transmitting x-rays and detecting where the rays meet hard tissue. If the rays meet metal, they are thrown off track and cause "scatter" in the data that makes the image less clear. The larger the amount of metal, the more scatter created.

Through testing and experience processing CBCT scans, we have found the limits where there is too much distortion to produce tooth models. We have the opposite problem with some non-metal restorations. In certain cases, the CBCT scanner does not capture these areas adequately for modeling because they do not have sufficient density.

If you have an orascanner or other certified 3rd party scanner in your office, you have the ability to take a supplemental scan to compensate for areas of the CBCT that cannot be processed due to these limitations. Whenever you discover during an exam that a supplemental scan will be needed, remember to allow time in your schedule for both procedures: CBCT scan and supplemental scan.

Restorations that cause too much "scatter" in the CBCT Scan:

Cannot support metal crowns or bridges with metal such as:
- Porcelain veneer crowns or porcelain fused to metal (PVC or PFM)
- Porcelain veneer bridges
- Cantilever bridges
- Gold Inlays, onlays and ¾ crowns

Cannot create tooth models for patients with a metal filling that is 3 mm or larger.

WARNING: Patients with the restorations described above are not eligible for SureSmile treatment unless you capture the area in a supplemental scan with an orascanner (or a SureSmile-certified 3rd party intraoral scanner).

Restorations that are not captured adequately by a CT Scan:

- Porcelain jacket crowns
- Composite fillings on critical anatomy; i.e., incisal edges, contacting occlusal surfaces

WARNING: Patients with the restorations described above are not eligible for SureSmile treatment unless you capture the area in a supplemental scan with an orascanner (or a SureSmile-certified third party intraoral scanner).

Check the panoramic radiograph during the patient exam. If the tooth structure is not visible or appears as an outline, the restoration is not dense enough to be captured by your CBCT scanner.

NOTE: You do not need a supplemental scan to capture non-metal restorations in a therapeutic scan if ALL of these conditions can be met:

- The Digital Lab has already modeled the teeth in a diagnostic model.
- The anatomy hasn't changed from the time of the diagnostic scan to the therapeutic scan.
- The quality of the diagnostic scan was good and had no distortion or discrepancies in the diagnostic scan data.

When a Premium Model Service is Incurred

NOTE: This is required for SureSmile Ortho and SureSmile Aligner cases. Additional fee applies for SureSmile Advanced cases.

Extensive restorations as described above can compromise the quality of the CBCT data. Your options for using supplemental scan data to enhance modeling accuracy depend on the number of affected teeth:

Patient Condition	Appropriate Data
No teeth with problem restorations.	CBCT scan Alternatively, capture a full scan (intraoral upper & lower) using your optical scanner if the patient declines to be irradiated.
Problem restorations in 6 teeth or less in one arch or 10 and less in total.	CBCT scan and supplemental scan Capture the problematic teeth with a full arch scan, or you may capture a partial segment (include adjacent teeth for a minimum of three teeth in a segment).
Problem restorations in 7 teeth or more in one arch or 11 or more in total.	CBCT scan and a premium supplemental scan (additional fee required). Capture full arches to obtain the most benefit from the premium service. Alternatively, capture a full scan (intraoral upper & lower) using your optical scanner to avoid the premium fee.
Treatment requires a premium model; for example, a surgical splint is planned. Patient may or may not have problematic restorations.	CBCT scan and a premium supplemental scan (additional fee required). Capture full arches, selecting the upper/lower options to include all teeth and gingiva.

Taking Required 2D Records

The SureSmile system requires current photos and x-rays any time a scan is taken to optimize 3D modeling accuracy. Each photo is used for a specific purpose in Digital Lab modeling or setup processing. A standard photo set consists of:

- 3 extraoral photos: Extraoral photos indicate the natural jaw position and natural smile line. The Digital Lab uses this information when orienting the 3D model to the head position.

- 5 intraoral photos: The Digital Lab references intraoral photos to confirm tooth anatomy, check bite registration, and confirm bracket placement.

The following table illustrates the records required (or recommended) for each model type.

	Required Photos	Required x-rays	Strongly Recommended
Diagnostic Model	-	-	Five standard intraoral + three facial + full mouth Panorex, ceph
Therapeutic Model	Five standard intraoral + three facial	Panorex + initial or current ceph* *(optional for SureSmile Ortho and SureSmile Aligner)*	Full Mouth + Overjet
Final Model	-	-	Five standard intraoral + three facial + full mouth Panorex, ceph

For best results, photos should be taken the same day as the scan. To meet minimum modeling requirements, they must be taken within 4 weeks before or 2 weeks after the scan.

> * For the most accurate orientation of the model to the head position, the Digital Lab recommends importing a ceph that includes the Frankfort Plane. If the patient's CBCT scan does not capture this anatomy, you can import the ceph from the initial records.

Import Records on Time

Import required photos/x-rays into the patient's SureSmile record before the data is sent to SureSmile.

If the 3D data arrives at the Digital Lab without the required records, the order will be placed on "customer hold," and you will have to release the hold before work can begin in the Digital Lab.
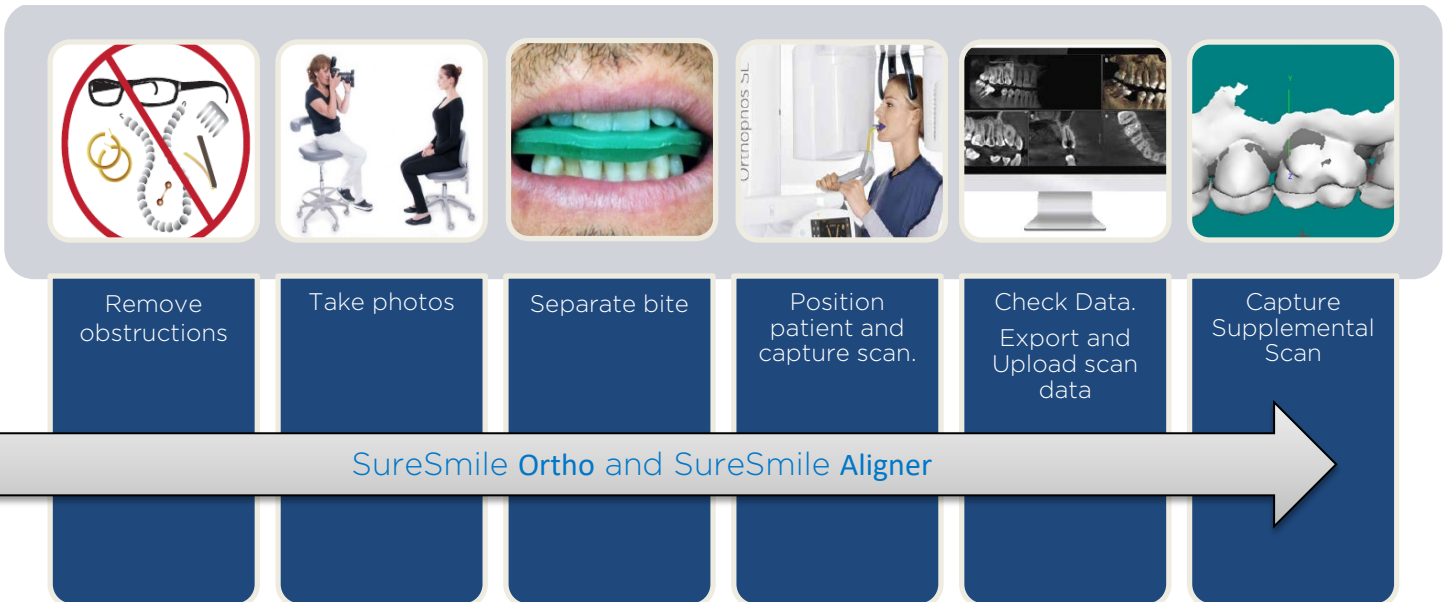
Rules for 2D Equipment

The i-CAT® allows you to extract both the pano and ceph from your CBCT scan. If you prefer to use your 2-D equipment for capturing the ceph or pano, SureSmile's requirements are:

- Panorex (and photos) should be taken within 4 weeks before or 2 weeks after the date of the scan.

- SureSmile does not require a current ceph if a ceph from the initial records is available.

Overview of the Therapeutic Scan Appointment

The illustration below (and continuing on the next page) outlines the steps of the therapeutic scan appointment. Remember prior appointments led to this point in treatment:

- Patient Exam—determined if a supplemental scan is required in addition to the CBCT scan

| Remove obstructions | Take photos | Separate bite | Position patient and capture scan. | Check Data. Export and Upload scan data | Capture Supplemental Scan |

SureSmile **Ortho** and SureSmile **Aligner**

The steps for creating, assembling and submitting the SureSmile order do not have to be completed during the patient appointment:

- Create the SureSmile patient record before the appointment, or at the time you are ready to enter data.

- Upload photos and x-rays during the appointment, or as time allows during your workday.

- Enter the Dental Exam (including bracket information) during the appointment or any time before you submit the order.

- Import CBCT data any time before you submit the order.

To avoid delays to treatment, make sure you complete and submit orders by the end of the day.

This section describes how to take an in-vivo scan with your Orthophos and Axeos that will produce clear data resulting in accurate tooth modeling. The steps for scanning should:

- Ensure the patient is comfortable and relaxed

- Ensure that the patient grasps the handles for further stability

- Ensure the patient's head is steady by closing the headrest

- Provide instructions on how to minimize patient motion during the CBCT scan

Scan Criteria

- No blurring, usually caused by patient movement

- No refraction ("scatter"), usually caused by metal.

- No contact between teeth

Orthophos   Axeos

Enabling exposure readiness in Sidexis 4

NOTE: The procedures for starting Sidexis 4, for logging in a patient, and for selecting the processing step "Exposure" can be found in the technical document "Sidexis 4 Operator´s Manual"

✓ Sidexis 4 must have been started.

✓ A patient must be logged in.

✓ The processing step "Exposure" must be selected.
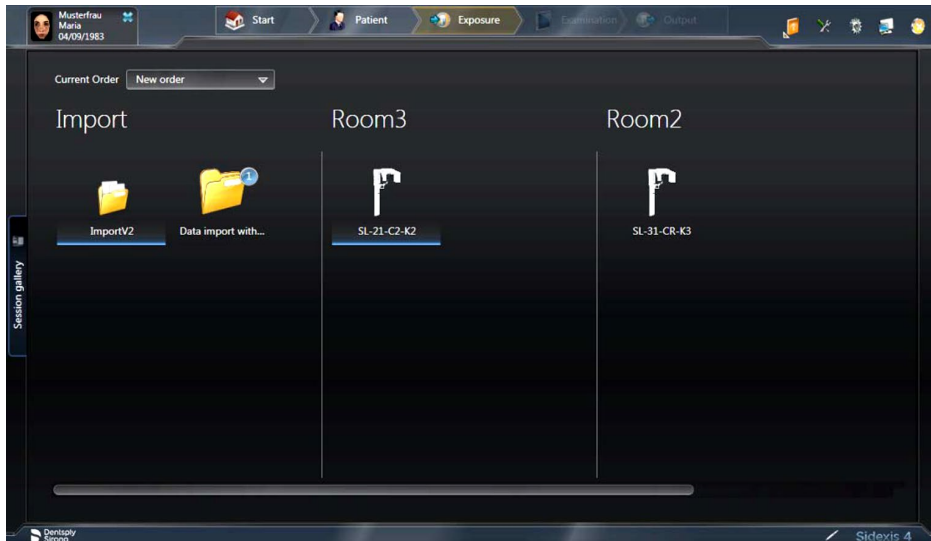
1. Select an X-ray unit for the exposure

   The dialog for preparing the exposure appears.

2. Enter the indication for the exposure in the input field "Indication" .

3. Activate or deactivate the check box "Patient pregnant" .

4. Click on the "Start acquisition" button. Sidexis 4 makes the unit ready for exposure.
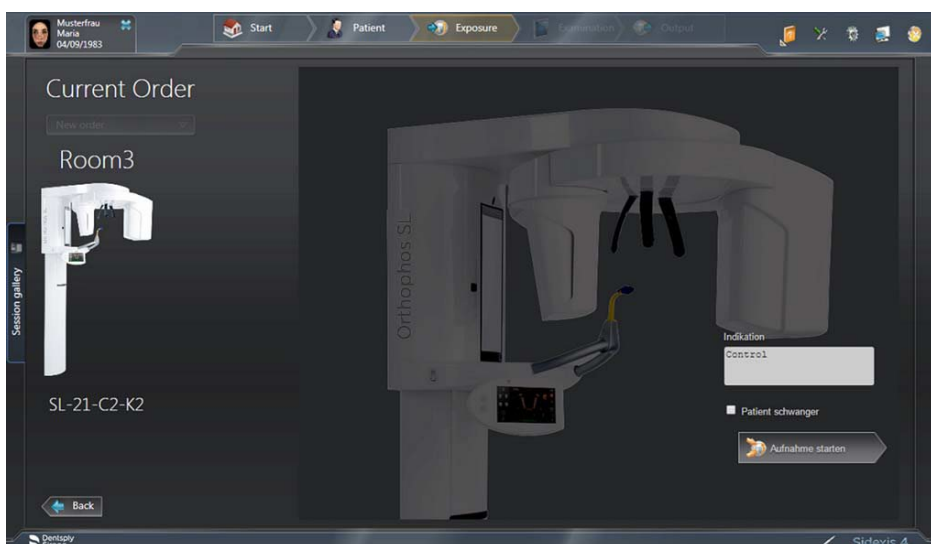
5. Based on the program (panorex, ceph or 3D). Select the following parameters on the EasyPad

    a. Panorama P1

    b. Lateral Ceph.

        i. C3 - Lateral exposure, asymmetric. This program displays a full-format lateral view (approx. 18x23cm).

        ii. C3F - Lateral full-format exposure. This program displays a full-format lateral view (approx. 30x23cm).

    c. 3D

        i. Volume size: either VOL1 (diameter 8cm, height 8cm) or VOL3 (diameter 11cm, height 10cm). For Axeos, VOL4 (diameter 17cm, height 13 cm) is also available.

        ii. Mode: High Definition (HD) or Standard Definition (SD)

Preparing the Patient

(SureSmile Ortho and SureSmile Aligner – proceed to next section "*Remove Obstructions*" since no brackets are involved)

1. If the patient is in treatment, remove the patient's upper and lower wires along with any metal appliances that are no longer needed for treatment. Save these wires for reinsertion following the CBCT scan.

2. For self-ligating brackets, make sure bracket doors are fully closed.

Remove Obstructions

✓ Remove any head or hair accessories that might prevent the patient's head from being properly positioned, including ponytails, barrettes and hats.

✓ Remove any clothing outerwear, such as heavy coats, that might prevent the patient's back from being properly positioned against the chair or wheelchair.

✓ Remove any metal items that the patient is wearing such as glasses.

✓ Remove all jewelry from the neck up, including lip and tongue piercings.

Separate the Teeth

Teeth must be separated at minimum by 0.5 to 1.5 mm. The Digital Lab cannot process scans of teeth and brackets that are in contact or closer than 0.5 mm. Use wax that is thick enough to prevent the teeth and brackets from touching.

SureSmile recommends softening the wax to allow the patient to gently bite into it to help "lock" the patient's jaws to avoid movement. Remember the patient cannot bite through the wax or there will not be space between the upper and lower arches.

1. Warm the bite wax in warm water to make it soft and pliable, and trim it to fit the patient's mouth.

2. Insert the wax into the patient's mouth and place the wax against the upper teeth.

3. Ask the patient to press the upper and lower teeth together into the wax. Do not allow the anterior teeth to contact or any tooth and bracket contact.

4. Remove the wax bite and check it for show-through. If the bite wax seated correctly, proceed to restraining the patient. Otherwise, discard the wax and repeat these steps

Restraining the Patient and Capturing Scans

WARNING: It is critical that the patient remain still during the scan. ANY movement will cause blurring in the scan data that will prevent it from being processed for SureSmile. If the data's quality is insufficient, it will be rejected, and you will need to schedule the patient for an intraoral scan.

1. Cover the patient with the protective apron.

2. Guide the patient to the unit

3. Insert the wax bite and ask the patient to fit his or her teeth to the wax.

4. Instruct the patient to hold the handles with both hands and place his subnasale (the base of his nose) against the contact segment as shown in illustration.

5. Check the position of the patient's spine. Ensure that the patient's spine is slightly inclined, as shown in the diagram.

6. Refer to the unit's alignment lighting to adjust positioning.

WARNING: You must capture the upper/lower root tips. If these elements are not visible, check your positioning or field of view.

7. Close the headrest to ensure head stability.
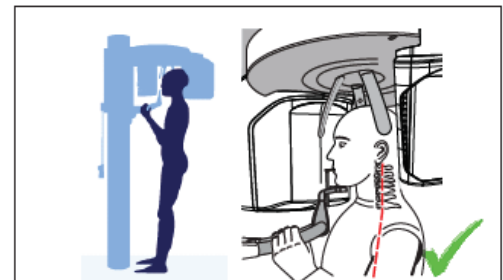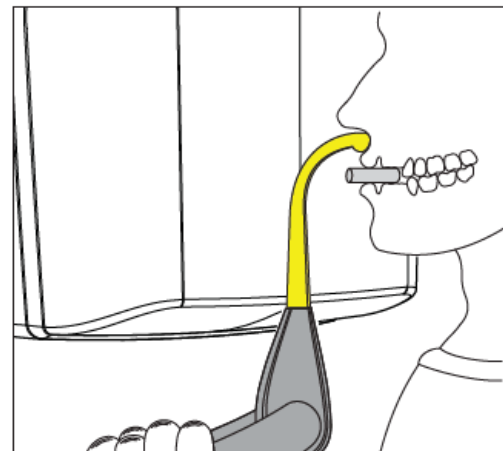
8. Instruct the patient as follows:

- You must remain completely still until you hear the triple-beep sound, or the scans will not be clear

- You will hear a steady beep during the scan

- Take gentle, shallow breaths so that you do not move

- Swallow now, try not to swallow during the scan

9. As soon as the scan is complete, the headrest will automatically open.

10. Discard the bite wax.

   Send the patient for a supplemental scan—these steps are described in later section
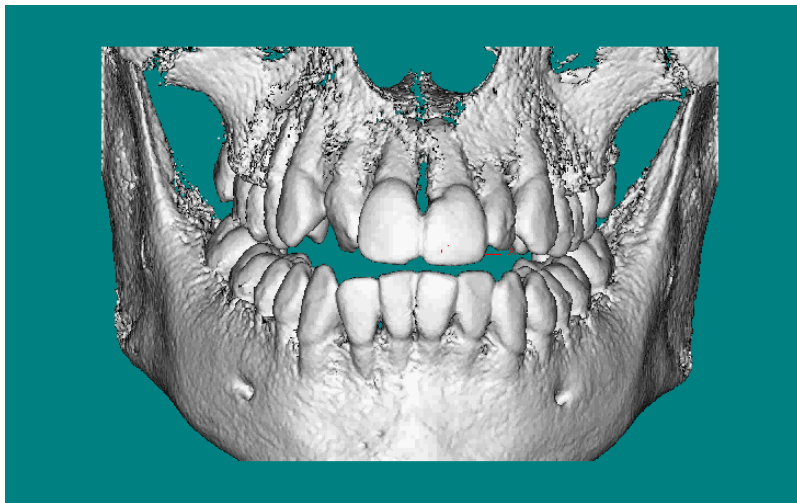
CBCT visualization in SureSmile Aligner and SureSmile Ortho software.

Checking Data

Before you release the patient, check the data.

✓ After reconstruction finishes the 3D image automatically opens.

✓ Evaluate if upper and lower arches are slightly touching or intersecting in multiple areas. If so, supplemental data should be added to include those occlusal/incisal areas and 3D scan does not need to be recaptured.

Check for signs of motion:

- In the panorex view, check each tooth with special attention to the bicuspids. If the teeth images are fuzzy or look like double images, the patient moved during the scan.

If there are signs of motion, you may need to repeat the scan. Ask the doctor for instructions. Otherwise continue to the next step.

✓ If the patient has metal restorations and bonded appliances, a supplemental scan will be needed in addition to the 3D scan.

NOTE: Submission of x-rays are optional for SureSmile Aligner.

Ceph

A ceph is required to orient a SureSmile 3D therapeutic model according to the natural head position. The Digital Lab will accept any ceph taken of the patient including the initial ceph; however, for the most accurate representation of the patient, a current ceph is preferred.

If you do not include a current ceph in the SureSmile record but a diagnostic model and/or ceph is available, the Digital Lab will link the therapeutic model to the diagnostic model and/or the diagnostic ceph. However, if there are no previous diagnostic records, the case will be placed on "**Customer Hold**." This status halts all work on the case until a ceph is imported.
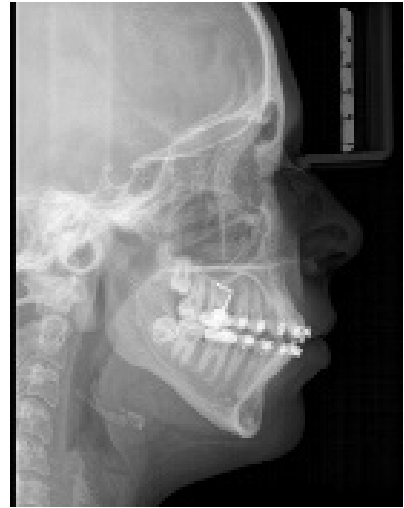
REMINDER: Import x-rays into SureSmile before submitting the model order to the SureSmile Digital Lab to avoid a "hold" issue.

Panorex

The SureSmile system requires a current panorex for therapeutic model orders.

REMINDER: Import x-rays into SureSmile before submitting the model order to the SureSmile Digital Lab to avoid a "hold" issue.

Exporting the CBCT Data

1. Within Sidexis 4, open the 3D dataset of interest

2. Open Tools

3. Click on "Send image to communication partner" . The CBCT will be automatically stored within your "SureSmile" folder for subsequent upload.
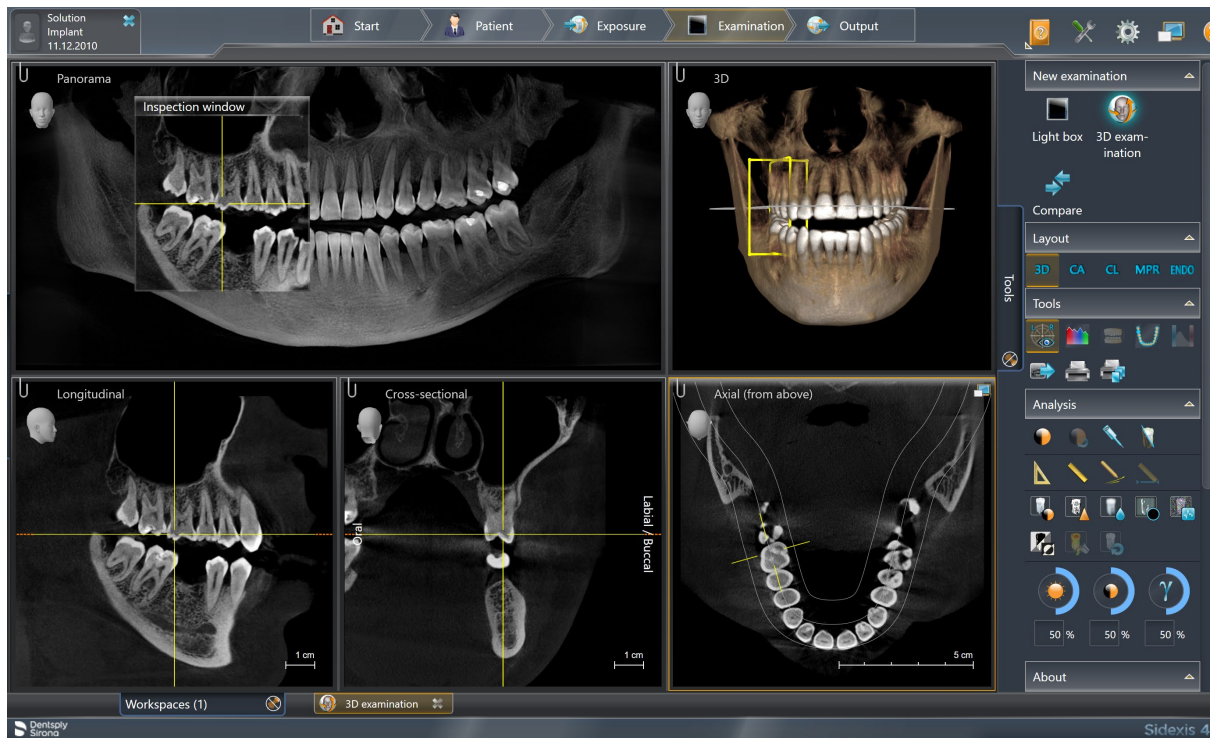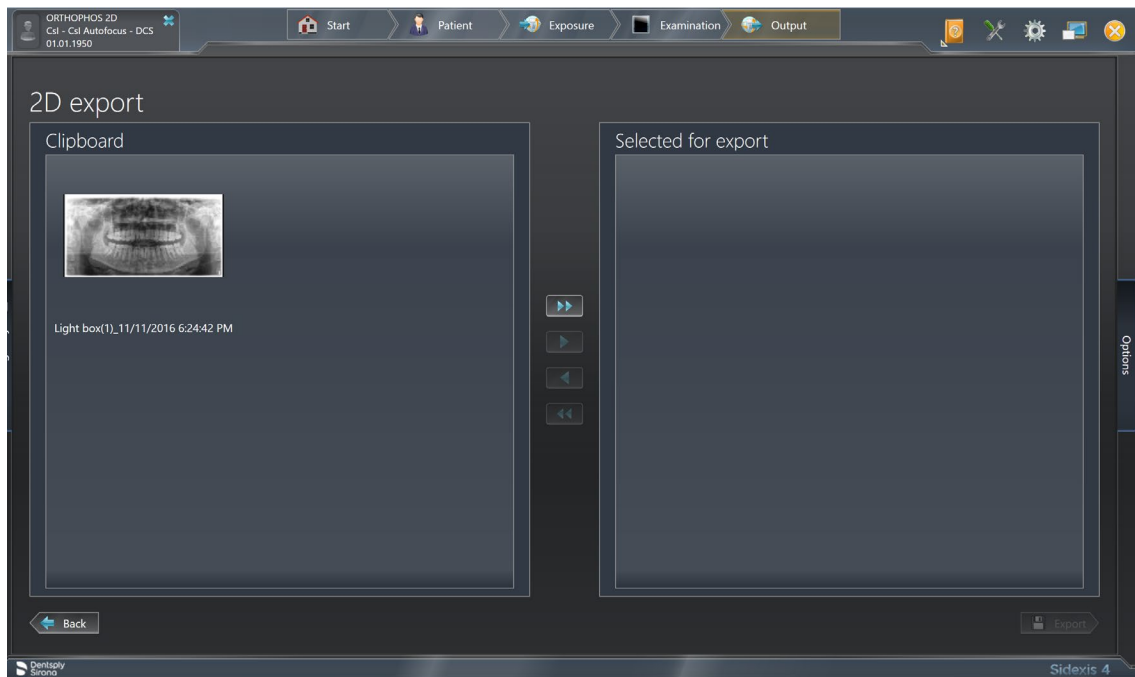

Export 2D Data

Sidexis 4 provides you with various options for exporting and sending media items and examinations saved with a patient in the "Output" work phase. The export formats that are available to you in the "Output" work phase can be configured in the "Output" ⇒ "Export options" configuration menu.

1. Within Sidexis 4, open the 2D dataset of interest

2. Go to the "Output" work phase

3. Click on the "2D export" button. The "2D export" export menu opens.

4. In the left "Clipboard" window, click on all media items that are to be exported.

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5. Transfer the highlighted media items by clicking with the mouse on the button with the single arrow in the right "Selected for export" window. The media items appear in the right "Selected for export" window.

6. Click the "Options" tab. The window for setting the export options opens. The "Default target directory" defined in the "Output" ⇒ "2D export settings" configuration menu is entered in the entry field. If you would like to select a different export directory, click on the folder icon and select a different export path.

7. Click on the "Next" button. The selected 2D media items are exported.

Continue to the **Model Order...** section
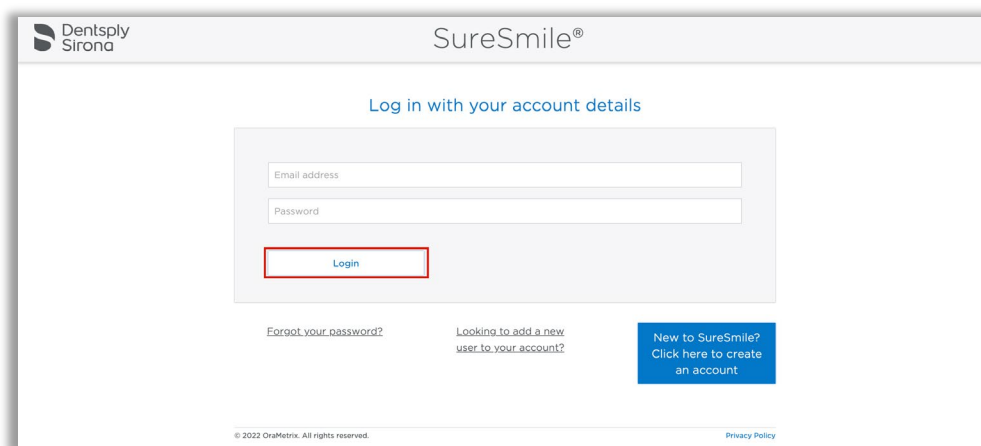
Model Order for SureSmile Ortho or SureSmile Aligner

This section describes how to work with SureScan and SureSmile Ortho or SureSmile Aligner for a model order which includes CBCT scan data.
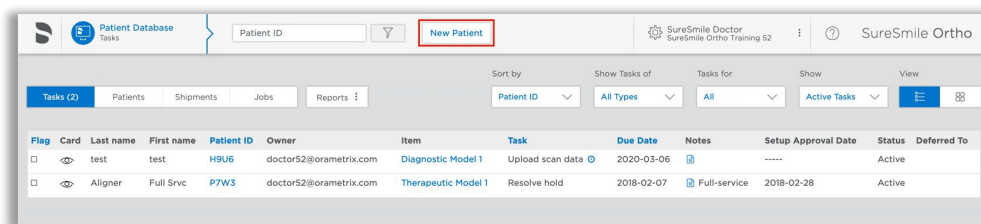
Start with SureSmile

1. Log onto SureSmile on the web.

    - Open your web browser and type https://login.suresmile.com into the address bar.

    - Type your Email address and Password and click Login

    NOTE: You should use Google Chrome, Mozilla Firefox or Safari

2. Add a new patient or open the Patient Overview for an existing patient.

3. Enter patient information

    - Enter the patient's first name, last name and DOB. The orthodontist will populate automatically but you have the option to choose a different doctor if needed. Staff is optional.

    Click on Case Selection Criteria to review the recommendations.

4. Select Package type.

(this step does not pertain to SureSmile Aligner, only SureSmile Ortho)
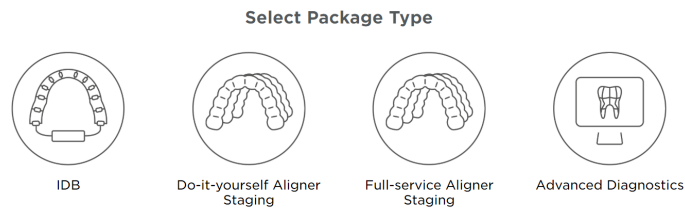
5. Upload surface scan data. Check the check box for CBCT premium option ($). If you select the check box, the system will prompt you to upload the CBCT scan files after the order has been placed.

Click Next.

6. Upload images

- Click 'Choose files to upload' to locate the photos & x-rays on your computer or drag them to this box.

Note: X-rays are optional for SureSmile Aligner

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7. Complete Dental Examination

    Mark any teeth that are not present in the scan as 'missing

8. Complete Aligner Prescription

    - Choose which arch(es) to treat and decide if you want to treat to 'Ideal' or choose 'Custom' to give the Digital Lab specific instructions.

    - If you choose 'Custom' you will need to complete the aligner prescription we call MACROS. There is more information on MACROS in the next section.

9. Select payment method and place order

    You will then see a confirmation that your order was submitted for processing. The Digital Lab will process your case and return it for your review. Cases are typically returned within 6 business days but no longer than 10 business days.

10. If you selected the CBCT premium option ($) you will be prompted to upload your CBCT scan via SureScan. You will need to install SureScan on the computer where the CBCT scan files are located.

    - If you already have the SureScan software installed on the computer you are using, jump to step 12.

    - If you have SureScan installed on a different computer, jump to step 16. If you need to download SureScan to the computer you are working on, please continue to step 11.
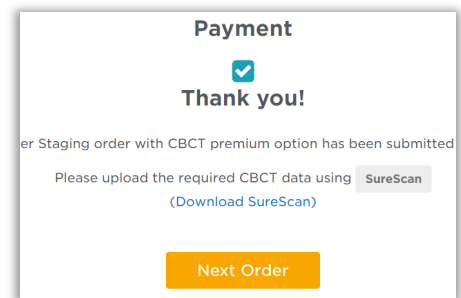
      NOTE: SureScan can only be used on Windows; you cannot use SureScan on a Mac.

11. A few options to download SureScan:

    - Click the (Download SureScan) link; the SureSmile Ortho/SureSmile Aligner Help Center will open.

    - Click Install SureScan/Image Composer under Software Downloads and follow the prompts.

    - You can also click Installation Instructions under the install link for instructions on how to download SureScan.
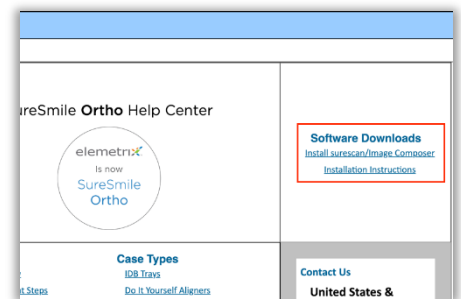
If you have SureScan on the computer, you are working on:

12. Click the SureScan button to open SureScan. If you get a pop-up asking if you want to open SureScan, click the affirmative option to open the program.

13. Login with your SureSmile credentials.

14. The patient should open. If the patient does not automatically open, find the patient in the task list and double click their name to open it.

15. Click the Select CBCT scan data folder ... button and locate the CBCT scan files. Once the files have been uploaded, click **Finish Scan**.
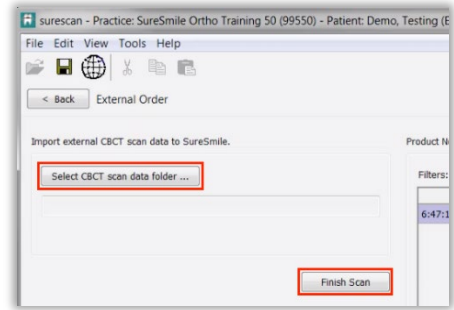
OR

If you will be using SureScan on a different computer:

12. Open SureScan and login with your SureSmile credentials.

13. Find the patient in the task list and double click their name to open it.

14. Click the **Select CBCT scan data folder ...** button and locate the CBCT scan files. Once the files have been uploaded, click **Finish Scan**.

Once the CBCT data has been submitted, SureSmile begins transferring the data over to the Digital Lab. Due to the large size of the files, this process may take a while depending on your bandwidth.

Please do not close your computer or allow it to go into "sleep" mode for at least 3 hours after submitting so that all of the data can come across. If this is done at the end of the day, you may want to leave your computer on overnight.

If you want to check the transfer status you can right-click the green SureScan icon in the taskbar at the bottom right corner of your screen and select **Show**.

A window will display where you will see the number of files waiting to be uploaded. When the window is empty, all of the CBCT data has been transferred and it is safe to turn off your computer.
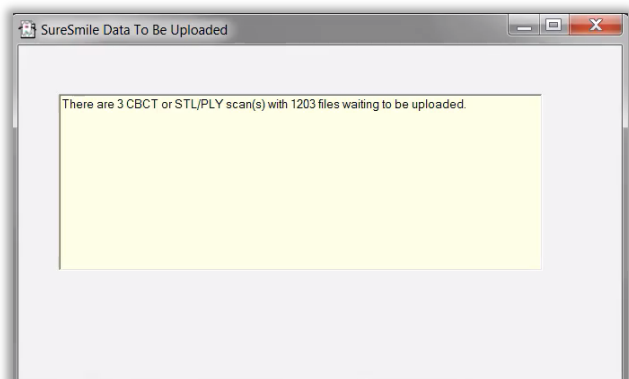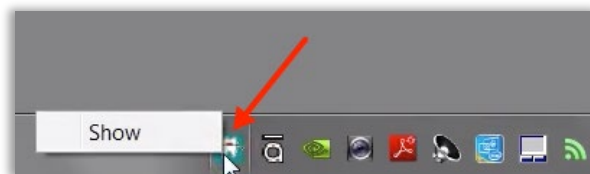
Receiving Models from CBCT Scans

When your order arrives at SureSmile, the Digital Lab temporarily loads the scan data into SureSmile matching it to the appropriate record. Due to data size, the CBCT scan is discarded after processing is complete and will not be available for viewing by the practice in the SureSmile software.

You will receive the digital model within five business days of sending the scan data and corresponding order to SureSmile.

Models produced from CBCT scans will appear the same as models from intraoral scans with a few exceptions:

- Gingiva is not available unless ordered with the premium service, or it was previously captured in a diagnostic model or prior therapeutic model.

- Roots are modeled and represent the patient's real tooth roots

- Tooth models are not as smooth
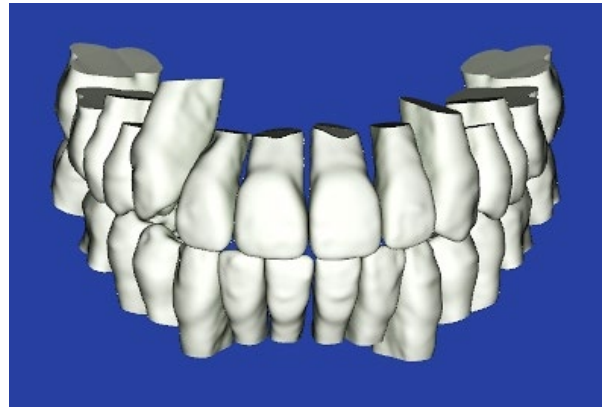
To view or hide roots or bone, click the corresponding icon:
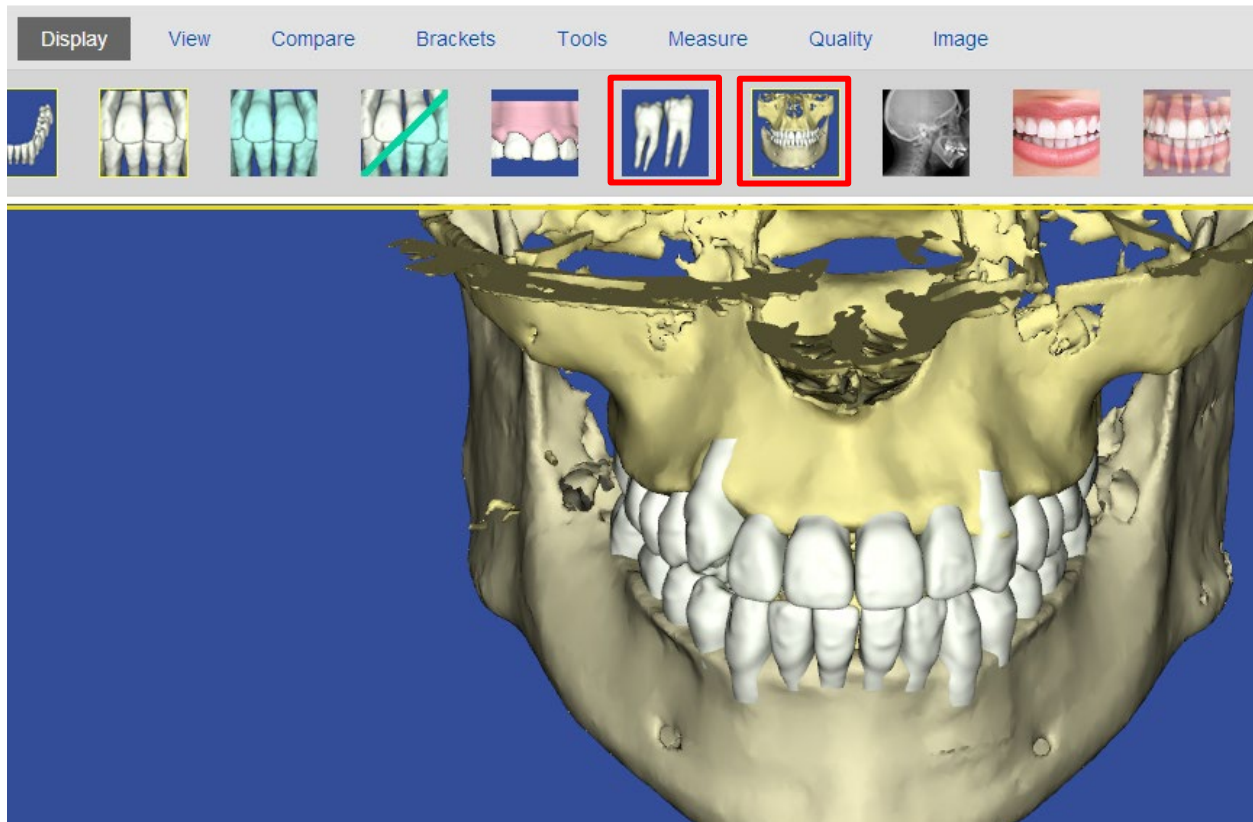
Imaging Centers

The CBCT scan taken for SureSmile patients is a critical part of SureSmile treatment. SureSmile processes the scan the imaging center takes to produce individual tooth models that SureSmile doctors can reposition to plan care and then design prescription archwires and/or aligners.

Getting Started

Once the practice has recommended an imaging center, Customer Care will work with the center to validate the CBCT equipment. Before patients can be scanned successfully, the unit must be calibrated to produce data that we can process. Validation involves scanning a "phantom" that we have manufactured for this purpose. We will test the data and inform you of the results within 30 days.

Imaging Center Supplies

The imaging center will need to keep a few supplies on hand:

- Bite wafers, minimum thickness of .5 mm to 1.0 mm (any U-Shaped brand)
- CD envelopes for shipping
- DVDs or CDs (depending on the size of the data produced by your CBCT scanner)

Providing Authorization (Optional)

The SureSmile practice will place an order through the SureSmile software to process the CBCT data. While creating the order, the practice can print a lab slip with the doctor's signature to authorize the CBCT scan. The patient can be given a copy to bring to the CBCT Scan appointment.

Coordinating Appointments

Because the wires must be removed for a CBCT scan, the practice will need to coordinate the imaging center appointment between appointments at the practice to remove and then reinsert the patient's wires.

Sending the Data

The Imaging Center will store the CBCT data on a CD or DVD and send it to the practice, typically by mail. Enclose the signed lab slip (if provided) and the disc in a CD mailer to prevent damage in transit. Alternatively, some centers give the disc to the patient to take back to the practice.

Once the data is at the practice, the records assistant will need to copy the data to a folder where he or she can access it to submit an order to the Digital Lab.

CBCT FAQs

How long does it take to get a model processed from a CBCT scan?

Up to 5 business days AFTER you send the SureSmile order and CBCT data.

When is a supplemental scan required?

There are three situations when a supplemental scan is required:

1. During the initial examination, you determine that the patient has restorations* that do not meet our requirements for CBCT-only scans. (Remember to set time in your appointment schedule for a CBCT scan AND an intraoral scan.)

2. Your CBCT scan was rejected due to distortion (usually from metal fillings). In this case, recall the patient within two weeks of the date of the CBCT scan. At the appointment, reopen the SureSmile order and add a supplemental scan* according to DL instructions.

3. For SureSmile Ortho and SureSmile Aligner, full upper and lower supplemental scans are required for cases being submitted with CBCT data.

   *If you have 7 or more teeth in one arch or more than 11 in total, a premium modeling fee is incurred

Do we need to take the CBCT scan and the supplemental scan the same day?

Yes. When you examine the patient at the beginning of treatment, you will determine when a supplemental scan is indicated. At that time, schedule the patient for the CBCT scan AND chair time with the scanning station at the same appointment. Since the data will be combined in the Digital Lab, the scans should be taken the same day.

Why are adjacent teeth needed in the scan?

The Digital Lab requires "anchor teeth," which serve two important purposes in tooth modeling,

1. They provide a boundary to help us size a new tooth model correctly.

2. They also help us register new data from a supplemental scan with the data in the therapeutic model. We need two anchor teeth to help us register the scans together. If the neighboring tooth is missing, please scan to the
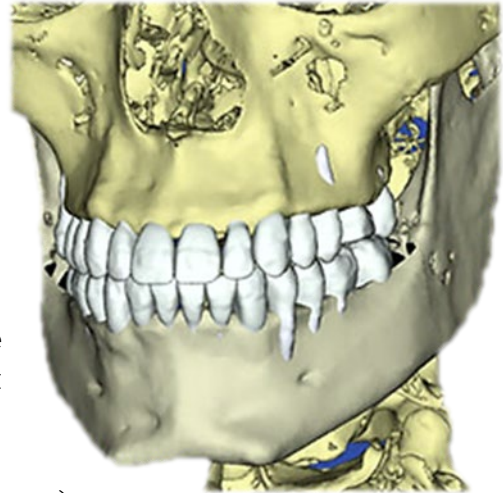
next tooth. If there is not an anchor tooth available on each side of the restored tooth, scan two extra teeth on the side where they are available.

NOTE: For the patient pictured here, you would capture the molar due to the large filling plus the LL4 and LL5 to provide two anchor teeth.

Are patients with restorations in all quadrants eligible for a CBCT scan?

If the patient has 7 teeth in one arch *(or 11 total)* with problematic restorations, the CBCT scan will be very distorted.

To compensate for this issue, you may scan full arches in the supplemental scan area to request our premium service *(available for an additional fee).*

Or, to avoid the fee, do not submit a CBCT scan. Instead, submit a full intraoral scan of the patient using your orascanner or certified 3rd party scanner.

What are the reasons why the Digital Lab might reject my scan?

If you do not follow the protocol for taking a CBCT scan for SureSmile patients, you run the risk of sending the Digital Lab data that cannot be processed into an accurate model. In these situations, the DL will reject the scan and provide instructions (in the product notes) to indicate your options and next steps. The reasons for a rejection include:

- Incorrect Voxel size – the data may not have been captured with the correct settings or exported correctly.
- Full data not received – the data did not transfer successfully.
- Movement – the patient moved during the scan.
- Teeth/brackets touching during scan – You may have forgotten to use the bite wafer or the patient may have bitten down through the wafer.
- Supplemental scan needed – the patient has restorations requiring a supplemental scan but you did not include one with the order.
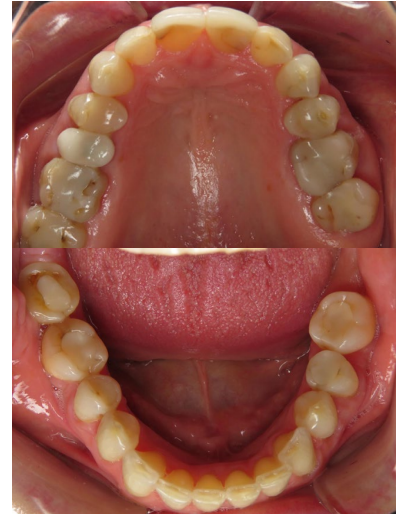
What if my CBCT scan is rejected for movement?

If you are replacing CBCT data only, reschedule the patient. You will need to schedule the appointment within 2 weeks of the prior appointment if you captured a supplemental scan. When you open the patient record in SureScan and select the rejected product, you will need to click "Yes" to acknowledge the message. Attach the new data (replacing the previous CBCT data), and submit the order again.

OR

If you are replacing the CBCT scan with an intraoral scan, reschedule the patient. When you open the patient record and select the rejected product, you will need to click "Yes" to acknowledge the message. Next, cancel the rejected scan, and order a new scan.

Sometimes I can't tell the patient moved, how can the Digital Lab tell?

When the patient moves during the scan, the resulting data is not distinct enough to create tooth models and register brackets. Here is how the data appears in the Digital Lab software after the data is derived from the CBCT volume and the modeling process begins:
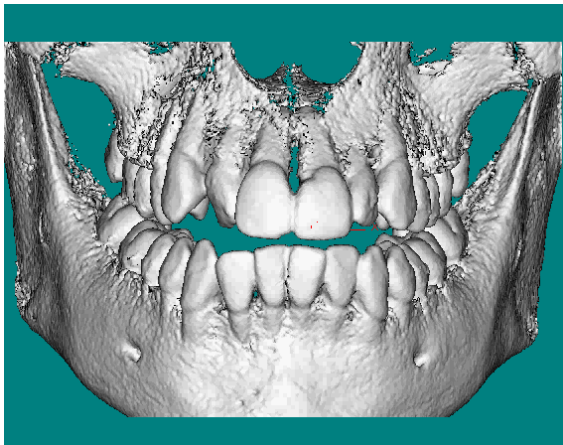
Accepted scan – tooth and bracket data is adequately defined
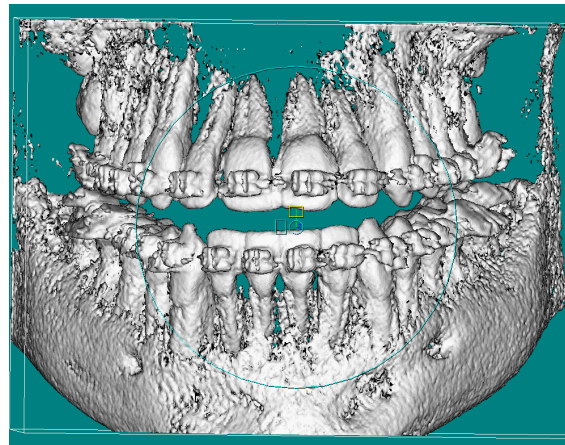
Rejected scan – teeth and brackets appear blurred

Will the Digital Lab reject a CBCT scan of a patient that is not accompanied by a supplemental scan of posterior composite fillings?

No, however the Digital Lab can only model the tooth anatomy that is present in the scan data you provide.

Consider these options:

- **Recommended:** Take a supplemental scan to achieve the most accurate model of the patient's dentition. This option can be the most efficient choice when you routinely take a bite scan (available to orascanner users) or if you are already planning to take a supplemental scan for metal crowns, bridges or metal fillings 3 mm or greater in size.

- **Alternative:** Order the therapeutic model and wait to see the result. If the tooth could not be modeled accurately, schedule an update scan. This option produces accurate tooth anatomy, but the bite may still be compromised.
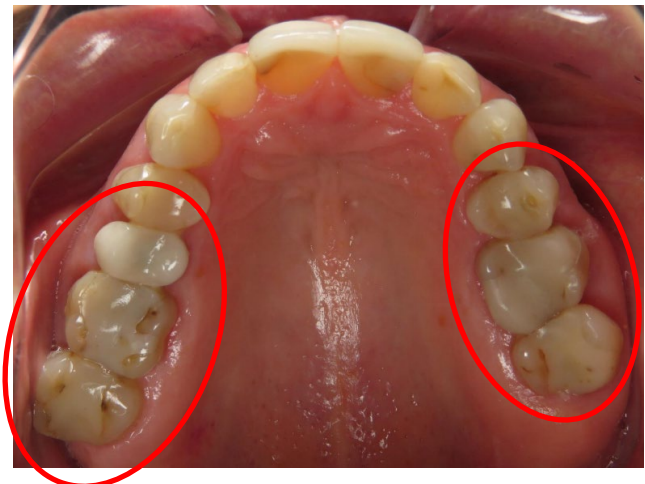
NOT Recommended: Continue without a supplemental or update scan. In this option, the doctor takes the compromised modeling into consideration when planning the setup and bite.

What is needed for a CBCT diagnostic in vivo scan?

- The patient must NOT be bonded and all appliances (such as a palatal expander) must be removed.

- The mouth must be opened by a wax bite that is between 0.5 and 1.5 mm.

- You must take a supplemental scan of the restorations that do not meet our requirements for CBCT-only scans.

- Before submitting the SureSmile order, enter the dental exam and upload the recommended records: Five standard intraoral + three facial + full mouth, panoramic radiograph, ceph.

- When ordering, select the Diagnostic option for CBCT In-vivo Scan.

What if I don't have a supplemental scan to upload when I'm importing my CBCT scan?

If supplemental cannot be provided at the same time as importing of CBCT Data, do not Finish Scan

Click Save

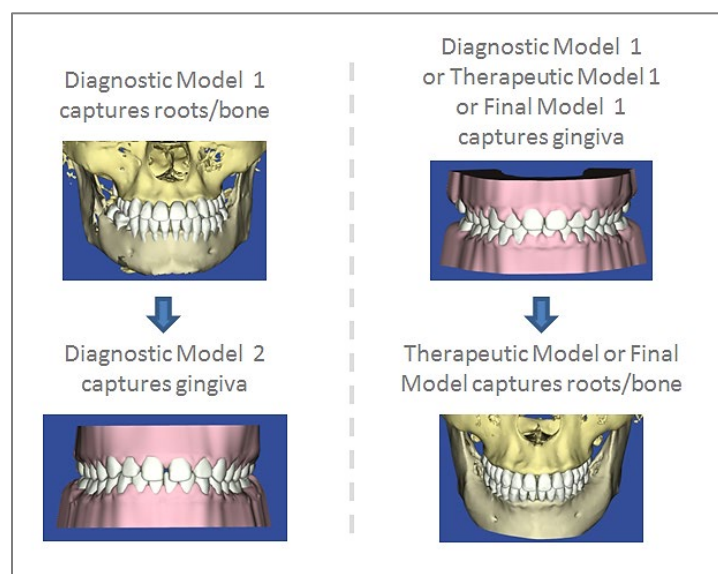Click Back. This will create a task for this patient and return you back to the Tasks page in SureScan

How can I include gingiva in my model?

TIP: If you are capturing gingiva for the purpose of fabricating aligners, SureSmile recommends taking an intraoral scan (rather than a CBCT scan) to capture data that includes gingiva and more detailed tooth models.

Recommended: To follow the most straight-forward approach for including gingiva in the model, order a premium model by checking the full arch options in the supplemental scan dialog and attaching complete data.

Alternative: Or, you can submit two orders with one order containing an optical scan that captures gingiva, and the other containing the CBCT data. When following this approach, you must be careful to submit orders in the correct sequence (see picture at right).

Diagnostic Model 1 captures roots/bone

Diagnostic Model 2 captures gingiva

Diagnostic Model 1 or Therapeutic Model 1 or Final Model 1 captures gingiva

Therapeutic Model or Final Model captures roots/bone

Go to the supplemental scan feature and select the appropriate teeth for modeling. If you have STL data from your intraoral scan, attach it again here as needed.

A premium model fee may apply.

Here are the advantages of each approach.

Premium model:

- If a diagnostic model was taken just to capture gingiva, you can receive more current gingiva by including an optical scan with the CBCT order.

- One order to submit – no issue with which model ordered first, less steps for staff.

- Encompasses any supplemental scanning required for restorations.

- One model for the doctor to view; no confusion on choosing the reference model.

- Highest modeling accuracy for tooth crown data (taken from the optical scan).

- Although a premium surcharge applies, this service produces the most detailed and complete model of the patient.

Two orders:

- The first model may be a diagnostic model (lower fee, records not required).

- A la carte fees may be lower than the premium surcharge.

Training Outline

This section recommends steps for rehearsing CBCT scans in your office.

Complete Orthophos and Axeos Training

Complete training on your CBCT unit with a dealer representative and/or manufacturer representative* (*depending on the market). If the rep has not been trained on SureSmile CBCT scans, invite him/her to remain and be trained with you.

Prepare for SureSmile CBCT Training

1. Review the procedural steps in this guide.

2. Configure any settings recommended by the guide to get ready to take scans.

3. Watch a demonstration of an in-vivo scan by your AM on a volunteer. If your system offers a "dry-run" feature, use it to conduct the procedure without irradiating the volunteer. If not, the AM should go through the motions without taking a real scan.

Practice Scanning Models

If the doctor plans on scanning plaster models to capture initial or final records, turn off the test cycle feature and take a real scan of a model. Complete the SureSmile order.

Job Aid for Dentsply Sirona Imaging systems

Is Your Patient Ready?

☐ **Remove Obstructions**   ☐ **Wax bite** (Teeth separated by 0.5 to 1.5mm)

Scan Criteria
- No blurring, usually caused by patient movement
- No refraction ("scatter"), usually caused by metal in the patient's mouth
- No contact between upper and lower teeth

Take Scans
1. Insert the wax bite and ask the patient to fit his or her teeth to the wax.
2. Instruct the patient as follows:
   - You must remain completely still until you hear the triple-beep sound, or the scans will not be clear
   - You will hear a steady beep during the scan
   - Take gentle, shallow breaths so that you do not move
   - Swallow now, try not to swallow during the scan
3. As soon as the scan is complete, the headrest will automatically open.
4. Discard the bite wax.
5. Send the patient for a supplemental scan if needed—these steps are described in later section

Check Data
Before you release the patient, check the data.
1. After reconstruction finishes automatically, select the patient's 3D scan.
2. Evaluate if upper and lower arches are slightly touching or intersecting in multiple areas. If so, supplemental data should be added to include those occlusal/incisal areas and 3D scan does not need to be recaptured.
3. Check for signs of motion. If there are signs of motion, you may need to repeat the scan. Ask the doctor for instructions. Otherwise continue to the next step.
4. If the patient has metal restorations and bonded appliances, a supplemental scan will be needed in addition to the 3D scan.

Data and X-rays

Export Data

Export CBCT Data
1. Within Sidexis 4, open the 3D dataset of interest
2. Open Tools
3. Click on "Send image to communication partner" . The CBCT will be automatically stored within your "SureSmile" folder for subsequent upload.

Export 2D Data
1. Within Sidexis 4, open the 2D dataset of interest
2. Go to the "Output" work phase
3. Click on the "2D export" button. The "2D export" export menu opens.
4. In the left "Clipboard" window, click on all media items that are to be exported.
5. Transfer the highlighted media items by clicking with the mouse on the button with the single arrow in the right "Selected for export" window. The media items appear in the right "Selected for export" window.
6. Click the "Options" tab. The window for setting the export options opens. The "Default target directory" defined in the "Output" ⇒ "2D export settings" configuration menu is entered in the entry field. If you would like to select a different export directory, click on the folder icon and select a different export path.

Checklist for Your CBCT Order

INITIALS

Start the Patient Record at Any SureSmile Computer

This step can be done chairside or any time before linking the CBCT data in SureSmile

- Create a new SureSmile patient record and enter demographic information.
- Create a **Therapeutic CBCT order**; enter Dental Exam including brackets.
- Save, but do NOT place the order if you close the record.

INITIALS

For SureSmile Advanced, Remove Wires/Close Bracket Doors

- Keep wires for reinsertion.

INITIALS

Take the CBCT Scan

- Follow SureSmile protocol for your equipment *(on other side of this checklist).*

INITIALS

Export the CBCT Scan

This step can also take place after patient appointment

- Export a panorex and the reconstructed scan data to the appropriate folders.

INITIALS

Mark Bite with Articulating Paper & Take Patient Photos

This step can be done anytime during the appointment after wires are removed, preferably BEFORE the supplemental scan (if needed)

INITIALS

Import the CBCT Scan - WITH a Supplemental Scan

The SureSmile patient record can be created and patient photos/x-rays can be imported at this step

- Go to a **scanning station**.
- Open or create a **Therapeutic CBCT Scan**; add the Supplemental Scan.
- Click **Import CBCT data** to link the data.

-OR-

Import the CBCT Scan - WITHOUT a Supplemental Scan

The SureSmile patient record can be created and patient photos/x-rays can be imported at this step

This step can also take place after patient appointment

- Go to a **Treatment Planning station**.
- If the order has already been started, see Tasks filtering for "Items to be ordered." Otherwise, start a Therapeutic CBCT Scan.
- Click **Import CBCT data** to link the data.

INITIALS

For SureSmile Advanced, Reinsert Wires

- Reinsert wires after patient brushes.

PATIENT THERAPEUTIC SCAN APPOINTMENT

INITIALS

Import Photos & X-rays

To avoid a Customer Hold, perform this step before placing the order or within one hour

- Go to a **Treatment Planning station** where you have access to stored images.
- Find the patient record under the Patients tab and open it.
- Create a new image set and import the patient's photos and x-rays.
- Close and save the patient record if you are not ready to order.

INITIALS

Place the Order

- If the record is closed, see Tasks filtering for "Items to be ordered"; open the Therapeutic CBCT Scan.
- Place the order when it is complete

Learning Resources

There is no requirement of specific training for the use of SureSmile Ortho Software 7.6, However, you can find additional information here:

Search the Help Center in SureSmile for:

- Online help topics with step-by-step instructions

- Downloads including forms and reference documents
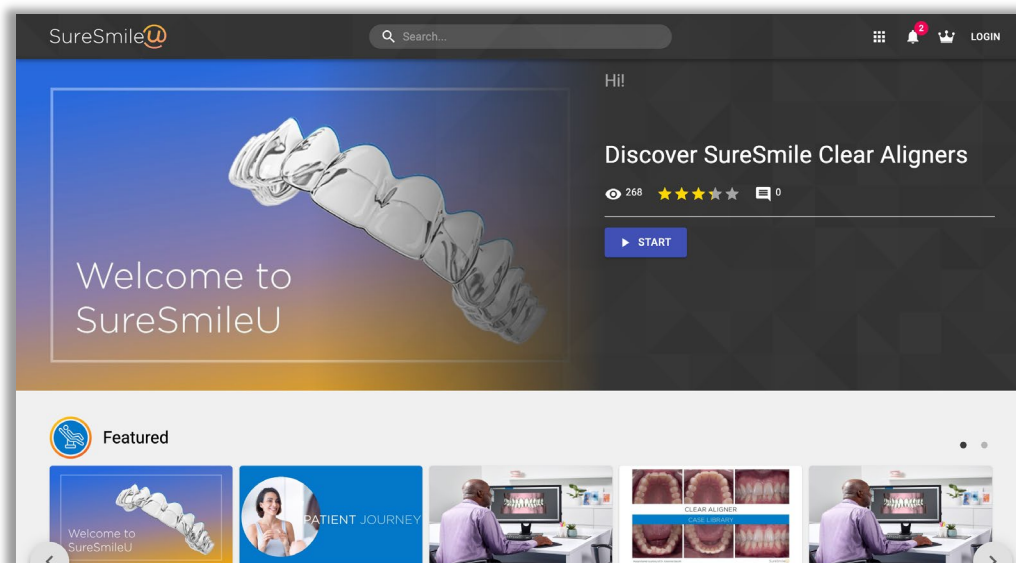
- Video demonstrations of software features
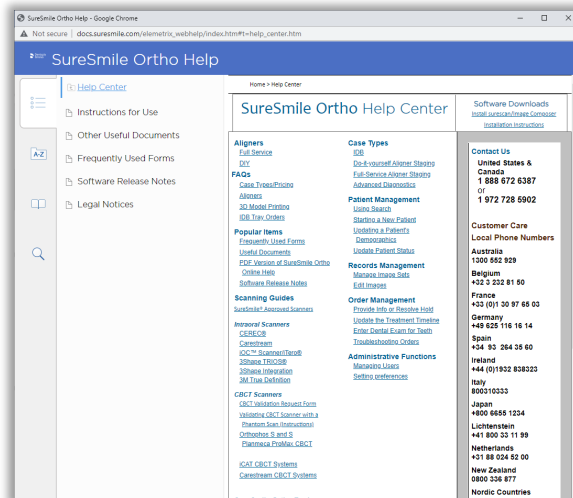
To open the Help Center, click the question mark button [?] and select **Help Center**.

Visit www.suresmileu.com for online learning resources including:

- Archived SureSmile webinars

- Recordings of presentations from events

- Class materials
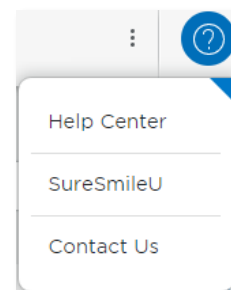
To open SureSmileU from the SureSmile software, click the question mark button [?] and select SureSmileU.