SureSmile®
Dentsply Sirona Imaging Systems
Orthophos S, Orthophos SL, and Axeos
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

<table>
<thead>
<tr>
<th>Region</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States &amp; Canada</td>
<td>1888 672 6387</td>
</tr>
<tr>
<td></td>
<td>or</td>
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<tr>
<td></td>
<td>1972 728 5902</td>
</tr>
<tr>
<td>Europe, Australia, New Zealand, Japan &amp; South Korea</td>
<td>+800 6655 1234</td>
</tr>
<tr>
<td></td>
<td>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.</td>
</tr>
<tr>
<td>All other countries</td>
<td>+1 972 728 5902</td>
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SureSmile protocol for DS Imaging systems  

DOC 500576-2  

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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.

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 to produce a premium quality model (additional fee applies). Take the supplemental scan with an optical scanner such as the CEREC® with Omnicam or Primescan. iTero®, 3shape TRIOS® or 3M™ True Definition.

<table>
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<th></th>
<th>Plaster</th>
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<tr>
<td>Diagnostic Model</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Therapeutic Model</td>
<td></td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Final Model</td>
<td>X</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>
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 for password security.
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 "Help Center."  
For issues with Orthophos and Axios 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?

SureSmile®

The SureSmile system is the first end-to-end solution that allows general practitioners and orthodontists 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 a SureSmile-certified intraoral 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 CBCT data submission
- The SureSmile Digital Lab provides scan and setup processing to produce custom 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 folder 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 with the Sidexis. 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.
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.

![Payment](payment.png)

*Link to download SureScan in SureSmile Ortho and SureSmile Aligner*

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**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.

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 a SureSmile-certified intraoral scanner in your office, you can take a supplemental scan to compensate for areas of the CBCT that cannot be processed due to artifacts. 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 a SureSmile-certified 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 a SureSmile-certified 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.

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:

<table>
<thead>
<tr>
<th>Patient Condition</th>
<th>Appropriate Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>No teeth with problem restorations.</td>
<td>• CBCT scan</td>
</tr>
<tr>
<td></td>
<td>• Alternatively, capture a full scan (intraoral upper &amp; lower) using your optical scanner if the patient declines to be irradiated.</td>
</tr>
<tr>
<td>Problem restorations in 6 teeth or less in one arch or 10 and less in total.</td>
<td>• CBCT scan and supplemental scan</td>
</tr>
<tr>
<td></td>
<td>• 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).</td>
</tr>
<tr>
<td>Problem restorations in 7 teeth or more in one arch or 11 or more in total.</td>
<td>• CBCT scan and a premium supplemental scan (additional fee required). Capture full arches to obtain the most benefit from the premium service.</td>
</tr>
<tr>
<td></td>
<td>• Alternatively, capture a full scan (intraoral upper &amp; lower) using your optical scanner to avoid the premium fee.</td>
</tr>
<tr>
<td>Treatment requires a premium model; for example, a surgical splint is planned.</td>
<td>• CBCT scan and a premium supplemental scan (additional fee required). Capture full arches, selecting the upper/lower options to include all teeth and gingiva.</td>
</tr>
</tbody>
</table>
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 and check bite registration

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

<table>
<thead>
<tr>
<th>Model Type</th>
<th>Required Photos</th>
<th>Required x-rays</th>
<th>Strongly Recommended</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnostic Model</td>
<td>-</td>
<td>-</td>
<td>Five standard intraoral + three facial + full mouth Panorex, ceph</td>
</tr>
<tr>
<td>Therapeutic Model</td>
<td>Five standard intraoral + three facial</td>
<td>Panorex + initial or current ceph* (optional for SureSmile Ortho and SureSmile Aligner)</td>
<td>Full Mouth + Overjet</td>
</tr>
<tr>
<td>Final Model</td>
<td>-</td>
<td>-</td>
<td>Five standard intraoral + three facial + full mouth Panorex, ceph</td>
</tr>
</tbody>
</table>

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 cephalometric image that includes the Frankfort Plane. If the patient’s CBCT scan does not capture this anatomy, you can import the cephalometric image 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

Orthophos and Axeos allow you to capture dedicated panorex as well dedicated cephalometric images. 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 cephalometric image if a cephalometric image from the initial records is available.

SureSmile URL: [https://login.suresmile.com/](https://login.suresmile.com/)
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

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 work day.
- Enter the Dental Exam 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.
CBCT Scan Procedure

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
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

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 from being properly positioned.
- 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 that are in contact or closer than 0.5 mm. Use wax that is thick enough to prevent the upper and lower teeth 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.
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.
11. Send the patient for a supplemental scan—these steps are described in later section

![CBCT visualization in SureSmile Aligner and SureSmile Ortho software.](image-url)

**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.

Cephalometric Images (Ceph)

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

If you do not include a current cephalometric image in the SureSmile record but a diagnostic model and/or cephalometric image is available, the Digital Lab will link the therapeutic model to the diagnostic model and/or the diagnostic cephalometric image. 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 cephalometric image is imported.

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

Panoramic Images (Panorex)

The SureSmile system requires a current panoramic image 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.
Export 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.

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

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 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)

If you plan to refer a patient to an imaging center, be sure to send he/she to the scheduled appointment with paperwork which includes doctor’s signature to authorize the CBCT scan. The SureSmile practice will place an order through the SureSmile software to process the CBCT data.

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 SureSmile-certified intraoral 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 Mode – 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.
- Upper and lower Teeth 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.

TIP: If you are using a certified 3rd party scanner, it may be more convenient to open the SureSmile patient record on the web to cancel a rejected CBCT 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. 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 - teeth data is adequately defined

Rejected scan - teeth 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 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?

1. If supplemental cannot be provided at the same time as importing of CBCT Data, do not Finish Scan
2. Click Save
3. 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 straightforward 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).

NOTE: If a supplemental scan is required to overcome limitations in CBCT processing, it must be included in the CBCT scan order.

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. Orthophos and Axeos offer a test cycle feature. Use it to conduct the procedure without irradiating the volunteer.

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.
✓ After reconstruction finishes automatically, select the patient’s 3D scan.
✓ 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. 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.

Data and X-rays

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

SureSmile®

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.
- Save, but do NOT place the order if you close the record.

Take the CBCT Scan
- Follow SureSmile protocol for your equipment (on other side of this checklist).

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.

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)

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.

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.

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

SureSmile URL:  https://login.suresmile.com/