

CS SOLUTION NEWS

WINTER 2016



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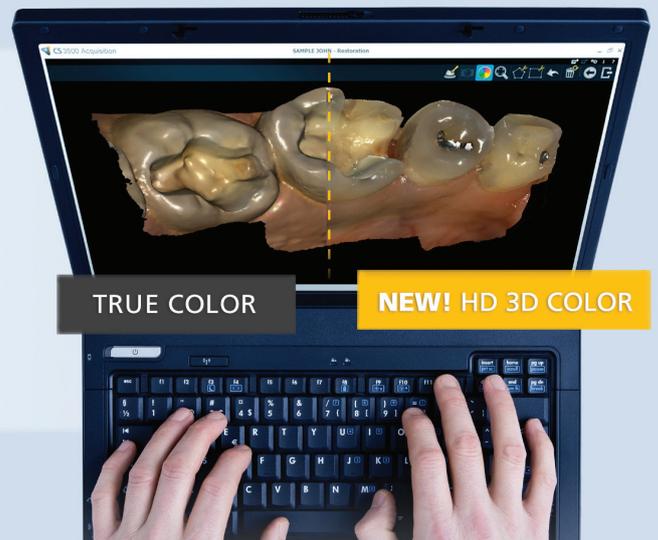
CUSTOMER UPDATES

Carestream Dental is constantly investing in its CS Solutions portfolio to continually improve the doctor and patient experience. With that in mind, we wanted to take some time to update you on all the latest updates to the CS Solutions portfolio.

By purchasing CS Solutions, you committed to advancing your practice's technology and providing your patients with a higher level of care, and we want to assure you that you made a wise investment. Technology is changing rapidly, and Carestream Dental is keeping pace by offering doctors new workflows and high-definition images, to name just a few advancements. Ultimately, these updates add value to your investment.

THE FUTURE IS NOW.

INTRODUCING **HD 3D COLOR**—
WELCOME TO THE NEXT DEFINITION OF REALITY





CS 3500 Intraoral Scanner at a Glance

- New workflow— A dedicated workflow has been specifically designed to acquire digital impressions of scanbodies which can be used to perform implant-supported restorations including customized abutments and screw retained restorations.
- A specific integration with exocad enables the doctors to take advantage of all the new features developed for the CS 3500 in a chairside environment
- Awards and Recognition
 - Edison Award™—the CS 3500 was awarded a bronze 2015 Edison Award in the category of Dental 3D Printers and Services by the internationally renowned Edison Awards.
 - Top 10 Dental Products of 2015—the CS 3500 scanner was named one of the Top 10 Dental Products in 2015 by Dentalcompare.

CS Model at a Glance

- CS Model now displays the HD 3D color rendering that was acquired with your CS 3500 during the acquisition process.

CS Restore at a Glance

- Improved display features which include the HD 3D color rendering that was acquired with your CS 3500.
- The ability to customize the background color of CS Restore allows the doctor to create a uniform appearance of all of their 3D visualization software across various diagnostic platforms.
- Improved Multiple Case Management—3D Design tools have been added and improved for fewer clicks and a greater productivity.
- Automatic 3D Margin Line Importation —for practitioners acquiring digital impressions with an intraoral scanner using the chairside workflow, the marked HD 3D margin line is transferred directly into CS Restore software.
- Automatic quality control – alerts the user of any issues with the proposed restoration.
- Improved milling options – including sprue removal, the ability to change the sprue position, and a new block library for Yamakin blocks.

CS MeshViewer at a Glance

- Support for new HD 3D digital models which allows your referrals and labs to see what you are seeing
- Ability to control the scene lighting - gives the doctor a different perspective on the clinical details of the scanned model
- Cervical margin line display - highlights which margin line is currently active
- STL and PLY export options, for increased flexibility for communicating with your labs and referrals

CS 3000 at a Glance

- The availability of new dedicated burs for the milling of restorations using hard materials



CS 3500

Implant-Supported Restorative Workflow

Carestream Dental now offers three dedicated scanning workflow for the CS 3500 intraoral scanner: restorative, orthodontic, and implant-supported restorations. In response to a growing demand from oral surgeons, Carestream Dental introduced an implant workflow for the CS 3500, allowing the doctor to acquire both photos and digital impressions of scanbodies to perform a customized abutment or a screw retained restoration, as show in Figure 1.

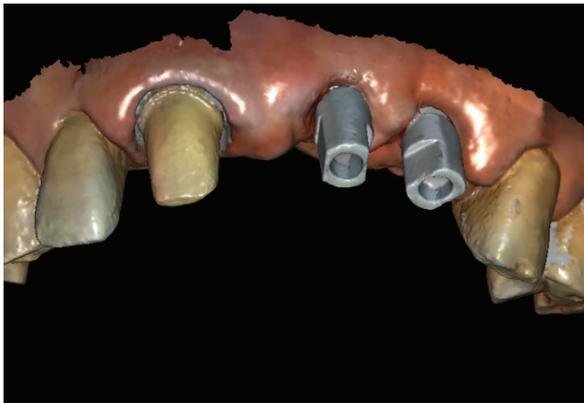


Figure 1: CS 3500 digital impression of scanbodies

A step-by-step intuitive interface guides practitioners through the acquisition process. With the implant in position, a first scan is obtained by scanning the patient's arch. The second scan, with scan body, is then obtained from the first one by cutting the implant region (Figure 2) on the mesh and rescanning only the specific area rather than rescanning the entire arch. The before and after models can then be viewed side by side for comparison (Figure 3). Doctors and patients alike benefit from highly accurate scans for truly precise implant supported restorations.



Figure 2: Cutting tool for easy editing and simplified rescanning.

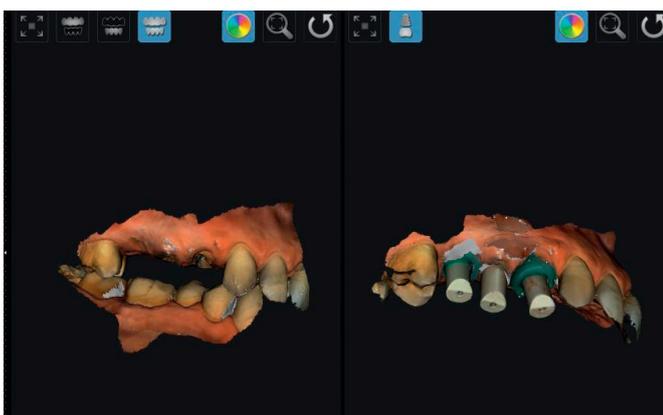


Figure 3: Split-screen viewing for side-by-side comparisons

Carestream Dental continues to work with all leading implant manufacturers to validate the scanbody workflow. However, to ensure that your lab can produce the desired abutments or restorations, it is necessary to verify that they are in possession of the scanbody library. If you have doubts, please contact your implant company or reseller.

Although intraoral scanners are relatively new to the field of oral surgery, they can be used to scan existing abutments; produce a dataset that can be used by third parties for the creation of basic surgical guides; or to fabricate mouth guards or other functional appliances. Whatever the next advancement in oral surgery, Carestream Dental is ready to meet your needs.

Full HD 3D Color Imaging and Cervical Margin Tracing

The move from traditional to digital impressions has been a game-changer in the industry. Now, the full HD 3D color feature of the CS 3500 goes a step further by providing incredibly realistic digital impressions as shown in Figure 4. Doctors and patients alike will all notice significant improvements to the images.



Figure 4: Realistic 3D HD digital impressions

The full HD 3D color rendering offered by this latest update to the scanner's CS Acquisition software makes case review and patient education easier and more effective. Vivid colors and detailed texture improve diagnosis and analysis. These color updates also aid in patient/doctor communication, as doctors can point to lifelike digital impressions of a patient's own mouth when explaining a diagnosis. Additionally, HD 3D color can increase case acceptance, as patients can better visualize proposed treatment.

Additionally, the updates now offer the doctor the opportunity to trace the margin line from the CS 3500 acquisition software (Figure 5). This can even be done while the patient is still in the chair. Once acquired, the margin line is saved and can also be viewed in the CS Restore Design software or in the chairside exocad integration workflow.

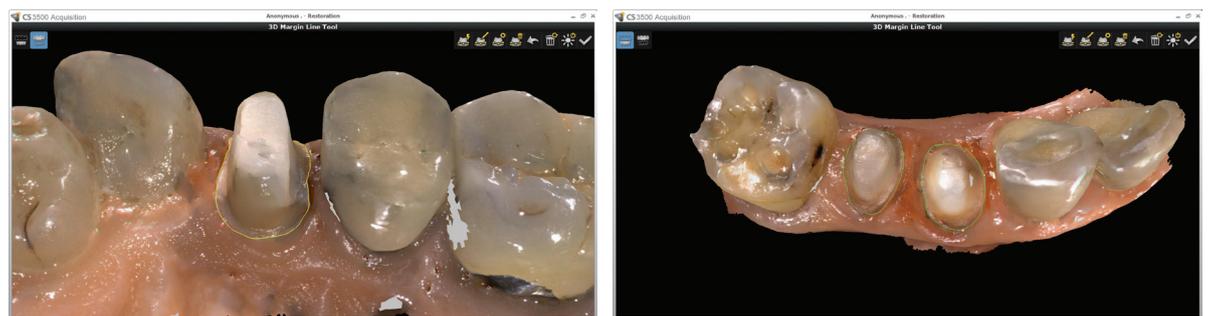


Figure 5: Cervical margin line on single unit case (L) and multiple unit case (R)



Edison Award

The innovation behind the CS 3500 was recognized earlier this year when the scanner was awarded a bronze 2015 Edison Award in the category of Dental 3D Printers and Services by the internationally renowned Edison Awards™.



The award was announced April 23, 2015, at the Edison Awards Annual Gala, held in the historic ballroom of The Capitale in New York City. Carestream Dental is proud of the way the CS 3500 is changing restorations, appliance fabrication and implant planning. This honor sets the bar high as we continue to advance this award-winning technology.

Edison Award nominees are judged by more than 3,000 senior business executives and academics from across the nation, whose votes acknowledge the CS 3500's success in meeting the award's stringent criteria of quality. The voting panel includes members of: Chief Marketing Officer (CMO) Council; Design Management Institute (DMI); American Productivity & Quality Center (APQC); American Society of Mechanical Engineers (ASME); Georgia State Marketing Roundtable (GSU); Product Development and Management Association (PDMA); Association of Technology Management and Applied Engineering (ATMAE); past Edison Award winners; marketing professionals; scientists; designers; engineers; and academics.

Top 10 Dental Products of 2015

Each year, Dentalcompare, an objective online resource for dental professionals, highlights the most popular products on its website. This year, the CS 3500 ranked third among all dental products on the site, and was also the highest ranking scanner. The rankings are based on the number of times each product page was visited during 2015. In other words, the success of the CS 3500 is due to oral health care professionals like you.



CS Model

3D HD Color

By default, the HD 3D view of the model will be displayed without the model base. The ABO base (Figure 6) or a simple cut base (Figure 7) can also be applied to the model if preferred.

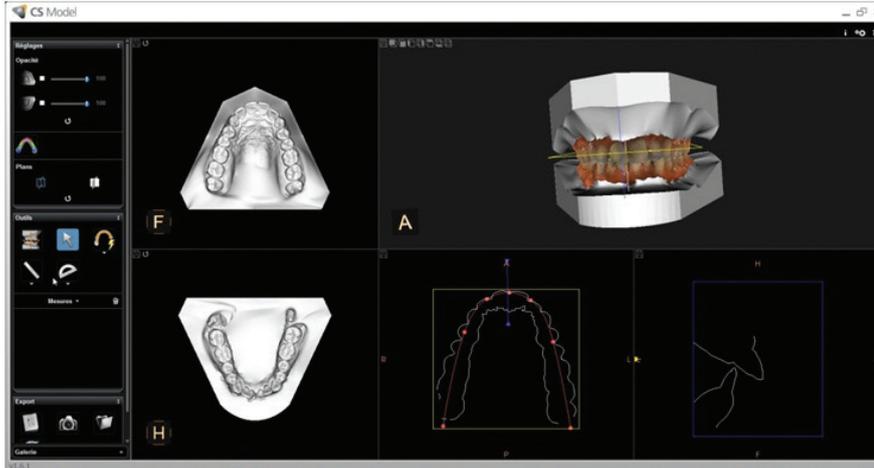


Figure 6: ABO base

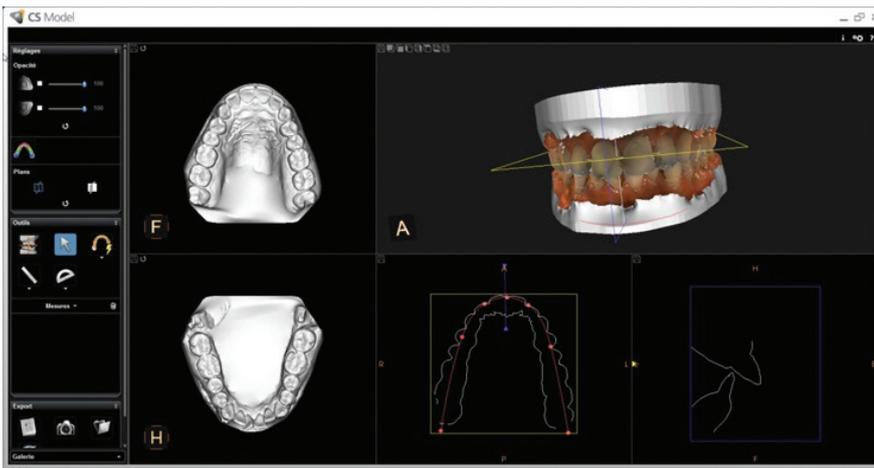


Figure 7: Simple cut base

If you wish to add the base, simply drag the slider bar to 100 to display the full model with the base (Figure 8). By default, CS Model will display the 3D HD color model that acquired. However, if you prefer to view the standard white model, you can modify the rendering by selecting Preferences.



Figure 8: Slider bars enable the viewing of the base



If you prefer to view a traditional white model, you can deselect the texture display from Preferences (Figure 9).

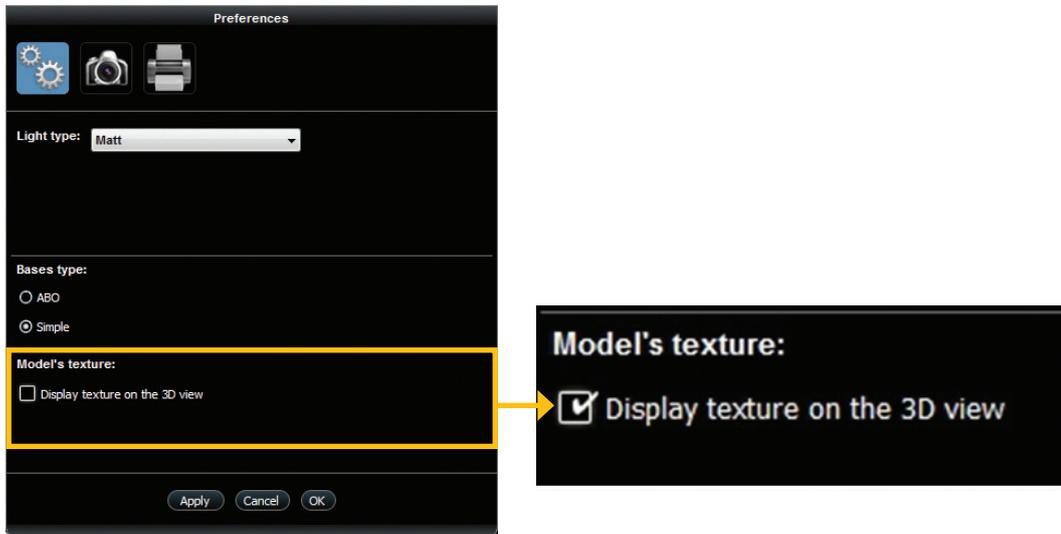


Figure 9: Deselect texture display on the model

The Printing button in CS Model now provides a new printing option which allows the user to save the report as a .jpg file for easy electronic transmission (Figure 10).

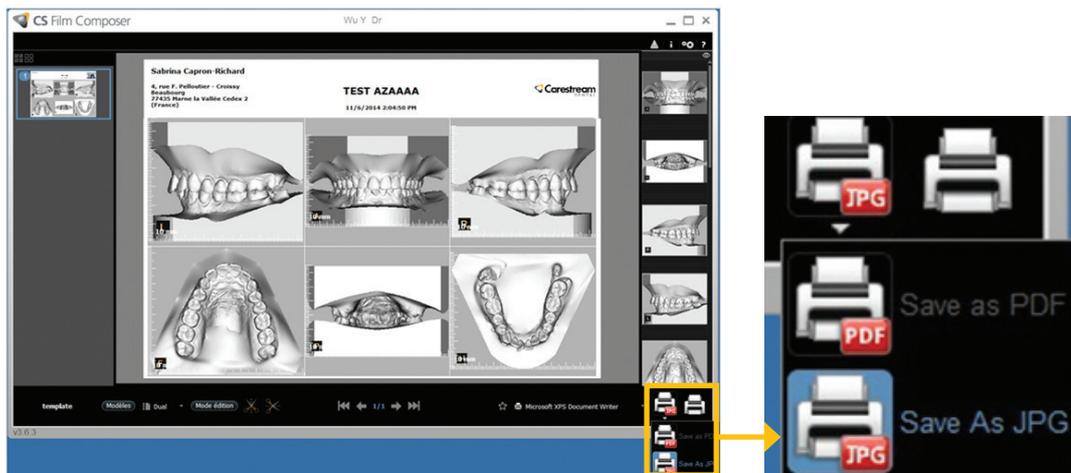


Figure 10: New .jpg option from print screen

CS Restore

Improved display features

By default, the HD 3D color rendering that was acquired with your CS 3500 will be available to enable the dentist to design incredibly realistic 3D restorations while improving patient communication.

Custom background color selection has also been added to allow the doctor to create a uniform appearance of all of their 3D visualization software across various platforms. This feature has been added as a setting which allows you to select the specific background color that you prefer from the color selection window (Figure 11). Examples of different background colors can be viewed in Figure 12.



Figure 11: Color selection window

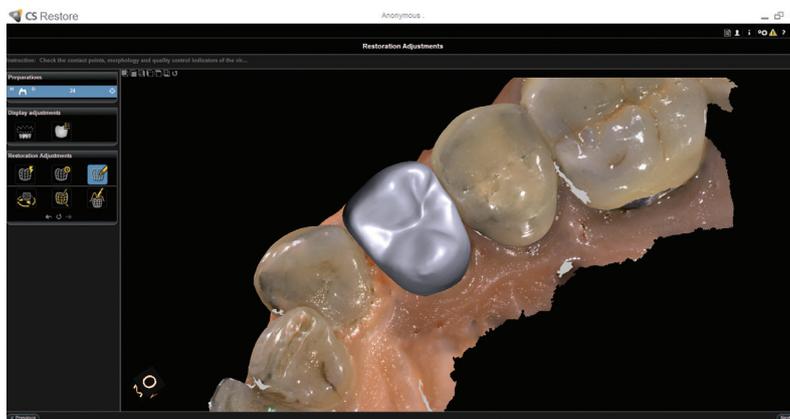
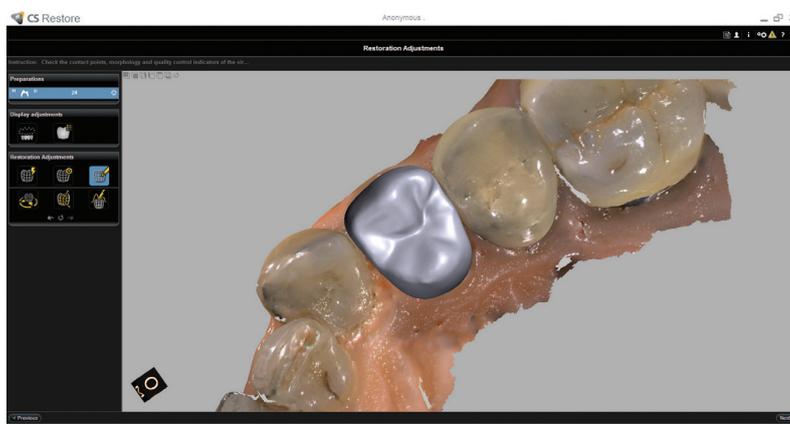


Figure 12: Examples of different selected backgrounds



Improved Multiple Case Management

In order to provide users with an optimized intuitive restoration design process, CS Restore version 1.7.8 allows for the simultaneous design of up to four restorations within the same quadrant on opposing arches. Improvements in the clipping tools and the color map overlays provide the user with more options to validate the occlusal adaption of the restorations and the contact points. Updated adjustment tools significantly reduce the number of clicks needed to plan multiple restorations on the same screen.

The 3D Scene is now easier to navigate. During the restoration design phase, the practitioner can move seamlessly between restorations directly in the 3D Scene. The 3D scene is centered on the restoration and the antagonist, or opposing dentition, is hidden to give a clear view of the active restoration on which the doctor is working.

For example, Figure 13 demonstrates the use of global modifications to modify tooth #26. Then by double clicking on the 27 on the 3D Scene, the tool stays active and the user can start modifying tooth #27 as shown in Figure 14.

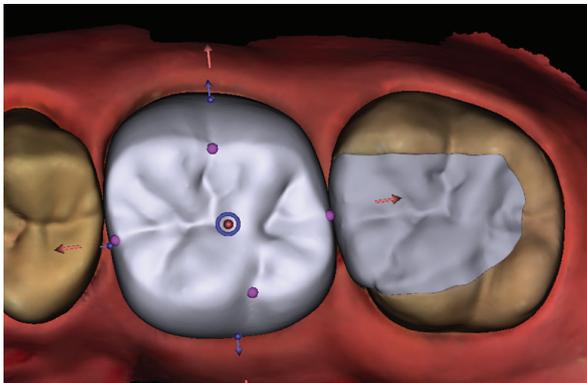


Figure 13 : User is scanning global modifications to modify tooth #26

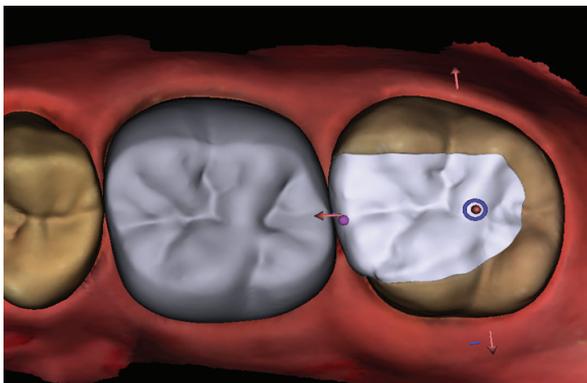


Figure 14 : User has double-clicked on tooth #27 and the tool has remained active

Automatic 3D Margin Line Detection

The 3D margin line tool is designed to meet the increasing demand to draw the margin line immediately after image acquisition when using the integrated chairside restorative workflow. When it's time to design a restoration, the cervical margin line marked during the acquisition process is seamlessly integrated into CS Restore, so there's no need to mark the margin line twice. When used on full HD 3D color images, the 3D margin tool improves helps remove any doubt the doctor may have while positioning the margin line and ensures a more efficient workflow between practices and labs, as clearly marked margin lines reduce the number of remakes. For even more control, practitioners also have the option to draw the margin line manually.



Figure 15: Automated cervical margin line detection

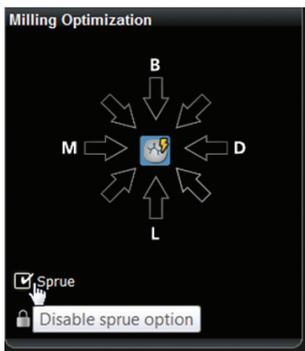


Figure 16: Enable or disable sprue option

Automatic Quality Control

Automated preparation quality controls alert the user of any issues with the proposed restoration, including undercuts and occlusal spacing, to help ensure a custom-fit and highly functional crown.

Improved Milling Options

A sprue removal option (Figure 16) has been added to allow the user to support aesthetics, avoid artifacts linked to the sprue connection, and preserve the margin line. Figure 17 shows how the milled restoration will look with or without a sprue.

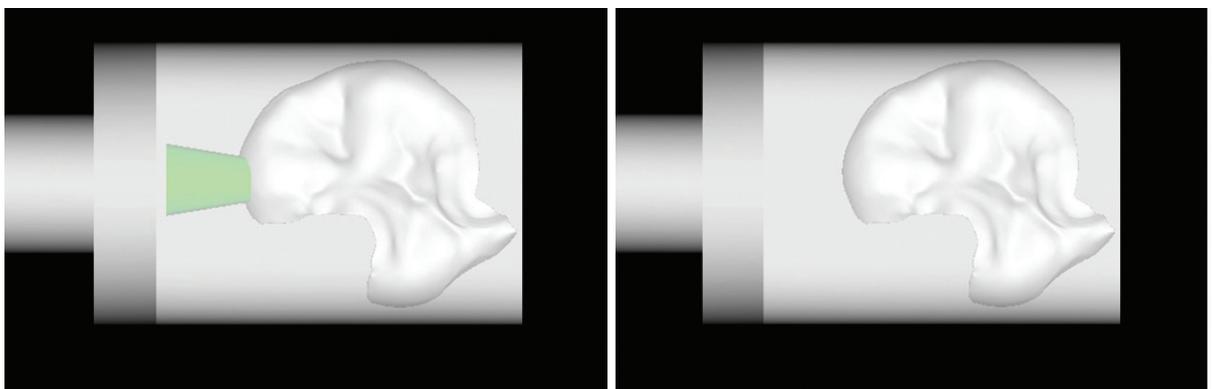


Figure 17: Sprue enabled shown on left, sprue disabled shown on right



As part of the new enhancements to CS Restore, it is also possible during the Block Selection step to change the sprue location to one of 9 predefined positions. The 9 positions, which include the disabling of the sprue option, are shown in Figure 16. This is important for partial crowns where the automatic position could be located close to the margin line. Finally, to enhance the results of the design of the milled restoration, the sprue has been significantly changed to have a conical form with a smaller surface contact on the restoration.

Continuous block libraries updates

Carestream Dental is proud to expand the variety of materials that practitioners can use chairside with CS Solutions—giving them more options for the final restoration.

The block library from CS Restore has been updated with the latest Japanese hybrid ceramic blocks from Yamakin, the KZR – CAD HR 2 (Figure 18) which has outstanding strength and durability. At the same time, it also offers excellent processability and polishability and fluoride sustained release. KZR-CAD HR Block 2 helps to streamline operations to make polishing operations go smoothly after occlusal adjustment. It is less likely to wear natural teeth and maintains glaze.



Figure 18: Yamakin KZR-CAD HR blocks

CS MeshViewer

Better 3D model viewing and export to dental labs

As part of the CS Solutions portfolio evolution Carestream Dental is proud to release the CS MeshViewer software module to enable more comprehensive support, viewing and export capabilities.

Support for the new HD 3D digital Models

The CS MeshViewer supports the review of the new HD 3D digital model produced from the latest version of the CS 3500 Acquisition Software



Figure 19: Sectorial HD 3D restorative scan displayed in the CS MeshViewer

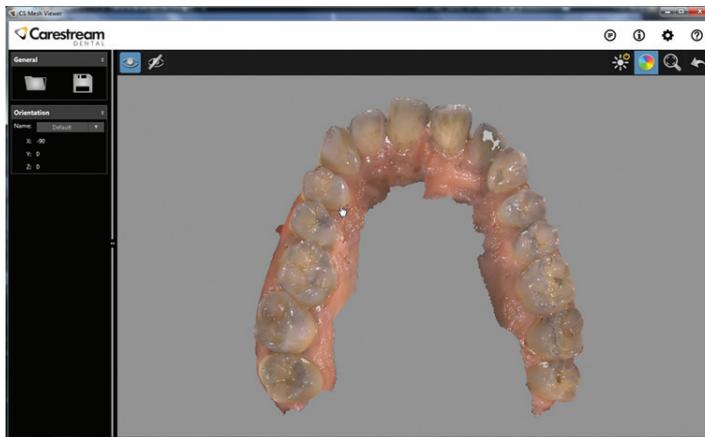


Figure 20: HD 3D full arch digital model displayed in the CS MeshViewer



Ability to control the scene lighting

The CS MeshViewer give the ability to control the lighting in the scene, using the Scene lighting adjustment on/off button. This enables the user to have a different perspective on the scan data to improve the visibility of sharp features and edges of the margin line.

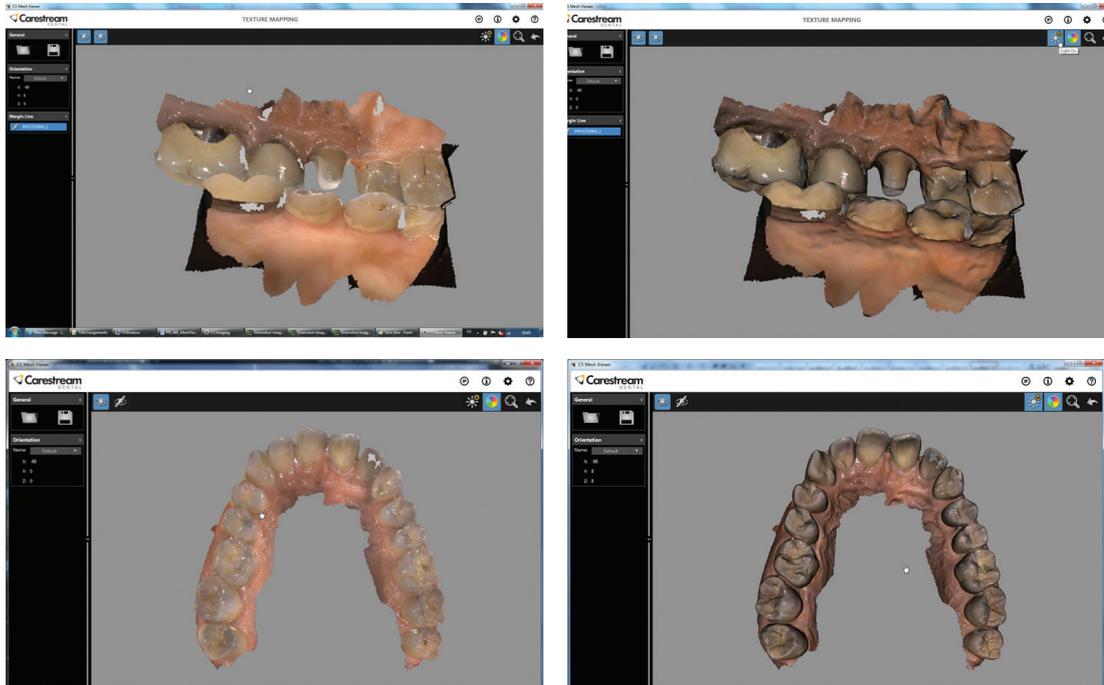


Figure 21: Examples of the impact of the lighting on the scenes in CS MeshViewer

Cervical margin lines display

The margin line data can be viewed in the CS MeshViewer. If the margin line is present it will be available in the left hand panel, shown in Figure 22. The Show/hide processing button in the margin line panel can be used to hide and show the margin line.

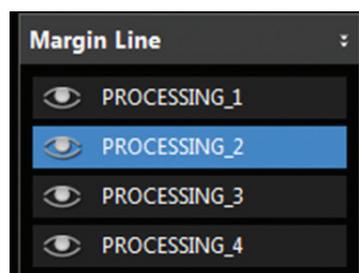


Figure 22: list of margin lines present in the data set.

When the margin line is present it is displayed directly in the view (Figure 23).

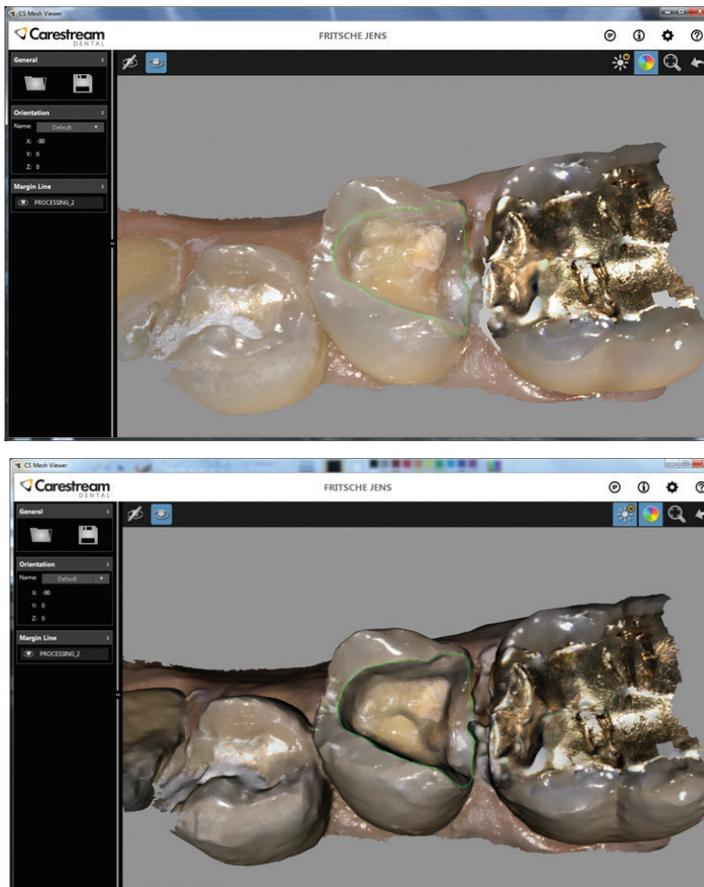


Figure 23: Display of the margin line in the CS MeshViewer with and without lighting

In the case that multiple margin lines are present in the digital model the active margin line is displayed in blue and is highlighted in the margin line selection box, as shown in Figure 24.

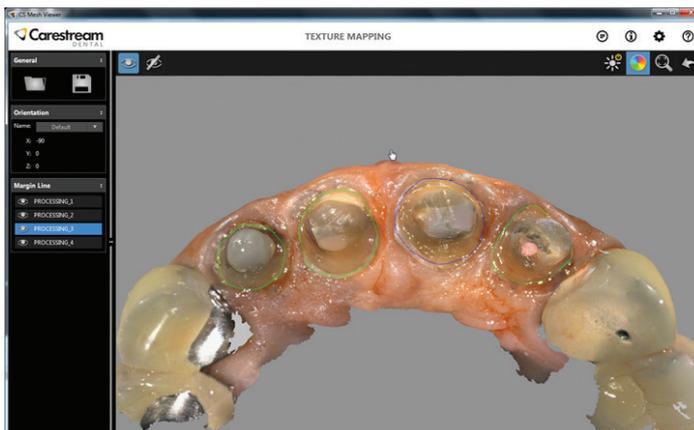


Figure 24: Example of a data set displayed in CS MeshViewer with multiple margin lines present



Supported file format and export options

The CS MeshViewer has different options for exporting the data sets. The basic export function is activated by clicking on the Save button. When the button is selected the user is presented with the Export Settings (Figure 25) dialog box.

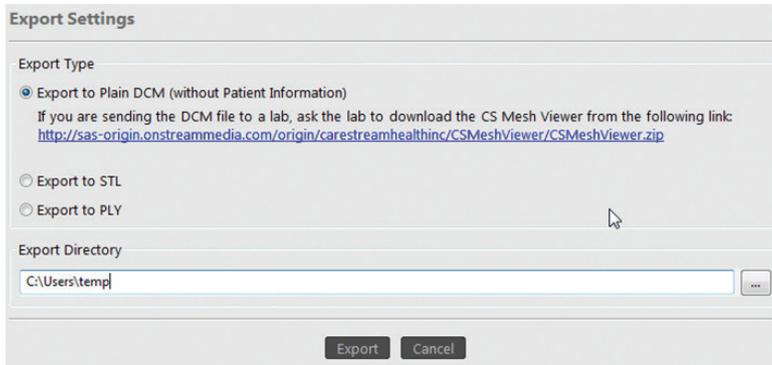


Figure 25: Export Settings screen

The first option enables the exporting to the native DCM file. This format includes the full colour data sets and additional information such as the margin line. In the interests of confidentiality the patient name and other patient information is removed from the DICOM file. This file is saved in the “Export Directory” that can be specified by the user.

The communication of this file to the lab has several advantages including:

- The ability to view the full HD models in the lab environment
- Seeing the margin line traced by the doctors
- Ability to reorient the data sets, prior to exporting, based on the requirements of the design software used in the lab
- Choice of export formats: PLY and STL

To enable the lab to manage the dcm file it is important that they install the CS MeshViewer. This can be downloaded from the using the following link <http://www.crestreamdental.com>.

Selecting the “Export to STL” will creates the basic digital model. In this format the colour information will not be available. The use of “Export to PLY” option will produce a digital model file that includes the colour information. Certain design software, including exocad, can support the use of the PLY format thus enabling the lab to design the restorations on a more realistic digital mode.

CS 3000

New Burs for Hard Materials

A specific bur kit has been designed for use with the milling of restorations using hard materials. The new bur kit remedies premature bur breakage when milling harder material such as Lithium Disilicate and Reinforced Glass Ceramic. For hard material, the recommended number of millings performed using a single bur is 10 restorations*.





CS SOLUTIONS



SCAN



DESIGN



MILL

