Dear Reader,

Intuitive operation makes CEREC more fun to use

"Ease of use" combined with "intuitive operation" are two key factors today for the success of a software program or technical innovation. But how does one go about designing a high-tech system in such a way that it can be intuitively understood and operated?

In common usage the term "intuition" is generally equated with notions such as "gut feeling" or "instinct". When we talk about the "intuitive operation" of a technical device or software program, the intuition of the user is the vehicle that guides him through the process in a very simple way, without unnecessary detours or deviations.

The new Version 4.0 of the CEREC software does exactly that, thanks to the use of clear, self-explanatory icons, an uncluttered screen layout and design tools that are made available as and when they are needed during the processing sequence. As a committed CEREC user you naturally want to offer your patients a complete treatment service that meets their needs both aesthetically and functionally. The new CEREC 4.0 software allows you to concentrate on the things that really matter. Improved design tools and the facility for designing several restorations in parallel help you to deliver the standard of treatment you demand. In developing the long-awaited new version 4.0 we listened to your suggestions and wishes and took them into account. The result is an even better software program that makes CEREC a real pleasure to use.

Read on to discover all the exciting features that CEREC 4.0 has to offer. Or take advantage of the many opportunities that exist to experience the new software live. You will not be disappointed!

Your CEREC team

More fun and creativity with CEREC SW 4.0

The new CEREC SW 4.0 is here! This month we are pleased to introduce the much-anticipated next generation of software for over thirty thousand enthusiastic CEREC users world-wide. Sirona’s new software again sets the dental CAD/CAM standard for ease of use and attractive design in a clear and cutting-edge style. This fourth generation is an entirely new product, developed from the ground up.

While introducing a new look and feel as well as many new features, it's important for us at Sirona that our existing users feel comfortable with the software. In this edition of CEREC News, we’ll have a basic look at the new software and its most important changes for CEREC 3D SW V3.8x users. So without further ado, we proudly present:

The Main Features

New and Intuitive User Interface

CEREC SW 4.0 is designed to be very intuitive: the typical chairside workflow is graphically represented in five phases at the top of the screen. This Phase Bar is always visible and allows “jumps” between the five phases instead of just the linear “undo” and “next” options – each phase name also has a button that can be clicked on, taking the user directly to the next Phase in the workflow.

Five phases showing clear case progression

Every phase is also divided into individual steps, shown in the Step Menu at the bottom of the screen. The Step Menu shows available options and clearly identifies the succession of actions to be completed. Its contents are completely dynamic depending on the currently active Phase of the case, resulting in an uncluttered workspace in which only relevant options are shown at any time.
Step Menu, showing the available steps in the model phase. Mandatory phases (like “Define Insertion Axis” in this case) are underlined in red until they have been completed (“Draw Margin”), at which point the line turns green. Optional steps, like “Trim Area”, are not underlined.

General system commands, like saving/importing/exporting a case or configuring the program, are not in constant use, so they are tucked away behind the Phase Bar at the top of the screen. This System Menu is accessed by navigating to the very top of the screen with the mouse.

The System Menu contains all the commands needed to deal with files and data. It is hidden out of the way at the very top of the screen.

Multiple Restorations

As many restorations as the case demands! The ability to create multiple restorations in a single case in CEREC SW 4.0 is not only interesting for high-end anterior cases – everyday work like double crowns (either neighboring or opposing) or rows of inlays become much easier – no more “virtual seating”, just straightforward work on all required restorations, even with mixed design modes.

Work Directly on the Virtual Tooth

CEREC SW 4.0 features a completely reworked tool concept with new and improved tools, allowing direct interaction with the virtual restoration. Select the tool to be used, position the mouse over the area of the restoration to be altered, hold the left button and move the trackball – this very simple pattern is universal when customizing a proposal. No workarounds, no tricks, just straightforward interaction, making your work with the software easier.

In order to give you a better idea of the concepts, let’s have a look at an example case.

The Architecture in Detail

General

This new release will run on any CEREC AC hardware (a solution for CEREC 3 owners including a special upgrade PC is on its way and will be...
released in early 2012). In order to achieve superior speed and a comfortable workflow, CEREC SW 4.0 runs under Windows 7 64-bit operating systems only. If your AC runs on Vista, contact your dealer for details on upgrading the operating system.

The Start Screen

When the software is launched, the Start Screen is the first view, allowing the user to create a new patient or access the patient database – either by listing all patients or by typing part of the name or patient ID.

The Start Screen is the first view in the software, allowing access to patient data.

ADMINISTRATION

Once the patient has been created or selected, a new case can be opened, thus beginning the first Phase in our workflow, ADMINISTRATION.
Set the tooth numbers for all virtual restorations in the ADMINISTRATION Phase. For this example case, we will be restoring 14 and 15 (ADA #4 and #5).

Set the tooth number for a required restoration simply by clicking on the correct tooth in the typodont. When a tooth is selected, the view switches, allowing you to set the restoration type and design mode for this restoration – this information is unique for each restoration, no matter how many restorations are created within the case.
Provide the details for each tooth number selected: restoration type and design mode.

Setting up bridge restorations has also become much easier: Simply click on the first and last tooth in the bridge and provide the details for each element. This even allows correlation bridges or bridges with mixed design modes.

Set the details for the current restoration and click OK in the Step Menu. The screen returns to case administration, where additional restoration sites can be added, again simply by clicking on each tooth. Once all the required restoration sites have been selected, we continue via the double arrows in the Step Menu or by clicking on the next Phase, ACQUISITION, in the Phase Bar.

ACQUISITION

Now it’s time to take pictures. The ACQUISITION Phase features the camera view and the 3D preview of the virtual model in the centre of the screen.

ACQUISITION features image catalogs for the upper and lower jaws as well as the buccal bite registration. Additional catalogs can be added as needed.

The default catalogs here are upper jaw, lower jaw and buccal bite registration. There are no preparation/antagonist catalogs, as we may have preparations in both jaws. The buccal bite is used in every case – if additional catalogs are needed (e.g. for the pre-op situation), they can be created by clicking “Add New Catalog”.

MODEL

Once all the imaging is done, the MODEL Phase begins with the buccal bite registration, much as we remember it from CEREC 3D V3.8x
Drag the buccal impression onto the corresponding areas in both jaws to bring the virtual models into occlusion.

Once the bite has been registered, a click on the double arrows in the current Step Menu brings us to the next part of the MODEL Phase – drawing the preparation margin and defining the insertion axis for each restoration to be created. This is where the new, flexible workflow comes into play with multiple restorations: Depending on the case, you can choose how to proceed.

**Option 1:**
Option 1: Draw the margin for the first restoration, define the insertion axis and proceed to the DESIGN and MILL phases. While the first restoration is milling, you can commence work on the second restoration. This option leverages your milling time against the time spent designing in the software, so it is the fastest way to go. However, if the design of the second restoration forces a change in the first, progress is lost and a block wasted. For this reason, this is the method of choice for restorations independent of one another, for example contralateral crowns or multiple inlays.

**Option 2:**
Option 2: Draw the margins and define the insertion axes for multiple restorations, then design them simultaneously. Since we are dealing with neighboring crowns in this case (and we want to have all contacts and cusp positions just right), this will be our method of choice here.
Drawing the margins is much the same as in previous software versions. Note the Tool Menu on the right side of the screen, offering quick access to each drawing tool – no keyboard commands required.

After drawing each margin, we define the insertion axis – individually for each restoration. The orientation is quite similar to what you are used to from the previous Biogeneric software: eliminate yellow undercuts while keeping the insertion axis close to the long axis of the restoration to be created.

With the MODEL Phase completed for both restorations, we’re ready to have a look at the initial proposals.

**DESIGN**

Once we enter the DESIGN Phase, we can see that one of the crowns is active. We can switch between active restorations at any time by either clicking the restoration icon at the bottom of the screen, or by double-clicking the virtual restoration itself – much as bridge elements were activated in CEREC 3D V3.8x. The active restoration can be discerned by the lighter color of the virtual ceramic as well as the active contact colors on the occlusal surfaces. Also note the contact colors on the virtual model – this is just one of countless smaller features included in this version, activated by selecting “Model Contacts” under “Analyzing Tools”. This button (as well as all other options and tools in the MODEL, DESIGN and MILL Phases) is located in the Side Panel at the right of the screen. During the design process, you’ll get the most use out of “Tools”. Some modification aids here are well known from previous versions, like the Contact tools or Form – even if we have renamed “Form +” and “Form -” to “Add Material” and “Remove Material”.

Other Tools have been redesigned to make their interaction much easier: Position and Rotate now feature semitransparent surfaces around the restoration, which allow you to click, hold and move the restoration directly.

Position the restoration by clicking the surfaces of the superimposed cube, holding and moving the trackball.
Use the rotational axes of the sphere to click, hold, and rotate the restoration by moving the trackball.

In addition to those tools that remain the same or have been redesigned, CEREC SW 4.0 also features completely new tools, for example “Biogeneric Variation”, with the ability to alter the Biogeneric morphology at the push of a button – perfect for situations in which the existing dentition is in no shape to be considered for new restorations.

Arguably the most powerful tool to be added to 4.0 is the new “Shape”, with which areas of the restoration surface can be “stretched” and moved in an almost “plastic” fashion.

Use Shape to form the restoration surface as desired. The alterations here are grossly exaggerated to show the tool’s effect.

To make tool access even quicker, the most popular tools are available in the Tool Wheel, which can be opened via a right-click in the DESIGN Phase.

Right-click to open the Tool Wheel, select a tool by clicking on the symbol.

MILL

Once you are satisfied with the restoration designs, proceed to the MILL Phase with each one. The “hands-on” tool interaction continues here: Open the Tool Wheel via right-click and choose Sprue Position, Rotate and Position to optimize the mill position.
In order to facilitate the start up phase, we have produced several tutorials which can be viewed on our website www.sirona.com. These tutorials explain the software in a concise yet easy to understand fashion. We recommend you watch them.

The CEREC SW 4.0 is free of charge for all CEREC Club members and will be distributed automatically from September. Please contact your distributor.

CEREC AC Users

The software version 4.0 runs exclusively on 64 bit computers equipped with Windows 7. CEREC AC units equipped with Windows Vista (hardware level HQ, KA and LA) can be easily upgraded with the appropriate Win 7 upgrade kit.

The software comes also with a completely new license system. You will receive the software DVD and a license drive. On this license drive we have already preinstalled your personal license for CEREC SW 4.0. Without this license drive you will not be able to open the software.

CEREC 3 Users

All existing CEREC 3 acquisition units will require a PC 64 bit upgrade including Windows-7 operating system in order to run the new software 4.0. This PC upgrade will not be available until early in 2012.

That wraps up our first-ever look at CEREC SW 4.0. The all-new platform will give us plenty of material for Tips & Tricks articles in the future. We hope you enjoy your first experiences with the new software.

Interview with Ingo Zimmer, who developed the new software

CEREC News: How would you define the ‘perfect’ CAD/CAM software package?

Zimmer: It has to function faultlessly in the clinical working environment – exactly as the dentist expects. And it must offer all the features that the dentist needs for his work.

CEREC News: How do you know what dentists expect of the software?

Zimmer: The feedback from our customers and testers is very important to us when designing new software and functions. Our development team works closely with dentists all over the world and listens to their feedback. A group of dentists tests our software during the early development stage and makes valuable suggestions for improvements. After all, they are the experts who have to master clinical challenges, day in, day out. At the same time our marketing and sales teams continuously monitor customer wishes and pass these on to us. Where possible we do our very best to accommodate these wishes promptly. For example, in response to the suggestions of long-standing customers we have incorporated a “Multiple Restorations” function into the new software. This enables the dentist to design several restorations in parallel for the patient.

CEREC News: New software cannot be created overnight. How long does the development process take?

Zimmer: We started thinking about the new software nearly three years ago. The actual project got under way 18 months ago.

CEREC News: So how does the development process work?

Zimmer: We gather ideas and then look to see if they are technically feasible. A specification schedule is then drawn up, setting out what we need to accomplish, how we will do it, and within what time-frame. We then delegate specific tasks and get started. We check at regular intervals to see if everything is going according to schedule. We are constantly monitoring trends in the dental market and if our users tell us they want some new feature we can respond promptly.

New CEREC Connect Software Version 4.0 with new user interface
As well as a new version 4.0 of the CEREC software, Sirona is also issuing version 4.0 for CEREC Connect. The software has been completely redesigned, and now comes with a modern, easy-to-understand user interface. A phase bar at the top of the screen guides the user step by step through the design process, making it easy for beginners in particular to learn how to use the software. As before the software captures images of the mandible and maxilla and the buccal bite is recorded as a static bite.

Before the digital impression is sent off to the external dental lab the bite can be checked – via indication of the contacts – and if required the preparation margins can be defined. With this version of the software existing users can also use their access data for the CEREC Connect web portal to transmit the data online. Dental laboratories are able to process digital impressions taken with the CEREC Connect 4.0 software in the inLab 3D software (version 3.85 or higher).

www.cerec-connect.net

Ready for CEREC 4.0 – with dental-users.com

Visitors to the website dental-users.com can access a large library of instructional videos, which demonstrate step by step how dental professionals can obtain the best out of new techniques, software programs and materials in their everyday practice work. A growing number of dentists are discovering the benefits of E-learning and signing up to the dental-users.com website. They can use the online training videos available here to train their entire practice team in new techniques and procedures – quickly, easily and affordably. As well as streamlining their practice workflow, they will also earn additional in-service training credits.

As soon as the CEREC version 4.0 software is released, CEREC users will be able to find the appropriate video clips, together with information about the new software, on the new E-learning platform:

So now CEREC users will be able to sit on the sofa at home, power up their iPad or notebook and familiarize themselves with the new version 4.0 and its many new features in a series of short video sequences.

Symposiums and Congresses

The CEREC network transcends national boundaries. CEREC conferences and training courses take place at regular intervals – in most cases at interesting venues and augmented by attractive supporting programs. The most recent event was the “2ème Symposium National CEREC” in France. Accompanied by a golf tournament, this symposium took place at the Radisson Blu Hotel at Disneyland Resort Paris and was attended by around 200 CEREC devotees. In May more than 100 Spanish dentists gathered at a conference entitled “CEREC e inLab: El futuro es digital” at the exclusive W Hotel in Barcelona.

On 23 and 24 September North American practitioners of CAD/CAM dentistry will meet at the “CEREC Summit Toronto 2011” - event coordinator: Dr. Bobby Chagger. The venue is the celebrated Westin Harbour Castle. This will be followed a week later by the “Quebec CEREC Symposium”. From 30 September to 1 October the CEREC community will come together for a CEREC symposium entitled: “CAD/CAM Dentistry for Everyone” staged at the prestigious Langham Hotel in London’s West End. Once again, leading experts will be reviewing the current situation in computerized dentistry.

inCoris TZI

in Coris TZI is an yttrium-stabilized zirconium oxide. TZI stands for Translucent Zirconium oxide. A high degree of translucency combined with the strength of zirconium oxide makes it possible for the first time to produce anatomically sized non-veneered bridges using the CEREC and inLab system. By dispensing with veneers it is now possible to conserve healthy tooth tissue while also providing an all-ceramic restoration even in situations where space in relation to the antagonist is critical or limited. inCoris TZI is supremely durable: problems with fractures or chipping are a thing of the past. Numerous studies have shown that zirconium oxide does not damage the antagonist. The risk of damage to the adjacent tooth can be discounted, particularly when the material has been correctly finished and polished. The notably finer and more uniform structure of zirconium oxide compared with veneer ceramics even results in less wear.

In conjunction with the inFire HTC high-speed furnace, anatomically sized zirconium oxide crowns and bridges can be sintered from inCoris TZI blocks in under 90 minutes. This means that it is now possible for the first time to make up all-ceramic bridges within half a working day.

Literature:
1. S. SHAH, C. MICHELSON, P. BECK, L. C. RAMP, D. CAKIR and J. BURGESS; Wear of Enamel on Polished and Glazed Zirconia; Glidewell 2010

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