New perspectives for dental practices and laboratories

Digital impressions with Sirona Connect.
Staying ahead of the competition is now easier than ever before. Digital technology has already led to decisive advances in many areas of medicine. The CAD/CAM-based production of dental restorations is already firmly established in many dental laboratories. Sirona Connect digitalizes the entire processing chain – from the acquisition of conventional impressions in the dental practice to the fabrication of the final restoration in the dental lab. When you choose Sirona – the world’s No. 1 provider of digital impression solutions – you profit from more than 25 years of CAD/CAM experience and secure significant benefits in your role as a dentist or dental technician.

Enjoy every day. With Sirona.

The benefits for dentists

**Simple and precise**
- Easy operation and high precision thanks to the tried-and-tested CEREC AC and CEREC Bluecam
- Streamlined and hygienic practice workflow: simply acquire and upload digital impressions
- Integration of digital impressions into the practice workflow, while maintaining your established working relationship with your preferred dental laboratory
- Direct feedback about the quality of the model – and hence elimination of potential sources of error

**Patient orientation**
- Greater comfort for patients as there is no longer any need for unpleasant conventional impressions
- Retention of existing patients and recruitment of new patients who opt for modern treatment methods and high-quality dental restorations
- Unlimited archiving of digital impression data

**Modern technology**
- Tested and integrative solution based on Sirona’s more than 25 years of experience and development skills
- Stepping-stone to future-proof dental technology
- Upgradeable at a later date to cater for chairside treatment applications, plus the simple integration of future product developments

The benefits for dental laboratories

**Secure future**
- Processing of digital impressions and cost effective integration into the laboratory workflow
- Access to modern model production techniques
- Optimization potential with regard to lab costs

**Recruitment of new customers**
- Image enhancement as a laboratory partner capable of handling digital impressions
- More possibilities for recruiting new customers
- Added flexibility in terms of materials

**Reliability**
- Fewer sources of error thanks to precise intraoral scanning and direct transfer of the model data to the dental laboratory
- Time savings thanks to the direct and immediate discussion of details with the dentist while the treatment session is still in progress
- Enhanced hygiene
- Sirona’s more than 25 years of experience in the field of computerized dentistry

Sirona Connect – the start of a new era.
The digital impression process

How Sirona Connect functions.

Sirona Connect is an innovative, precise alternative to conventional dental impressions. The intraoral data acquired by the dentist is converted into a 3D model and then sent directly via the Internet to a preferred dental laboratory. In the majority of cases this eliminates the need for conventional impressions, which many patients find unpleasant. The dental laboratory has various options for producing the final restoration: either on its own inLab system, with an inLab partner lab, or via a central CAD/CAM production facility. Sirona Connect also supports conventional fabrication methods.

### Benefits

<table>
<thead>
<tr>
<th>Method</th>
<th>Acquisition</th>
<th>Transmission</th>
<th>Design</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indications and materials</td>
<td>Digital impressions with Sirona Connect are the basis for creating single-tooth restorations (inlays, onlays, anatomical crowns, framework crowns and veneers) and bridges.</td>
<td>A wide range of materials is already available: zirconium oxide, aluminium oxide, feldspar/glass ceramics, lithium disilicate, polymers, precious metals, non-precious metals.</td>
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### Digital impression

- Acquired with the CEREC Bluecam – the heart of the CEREC AC acquisition unit.

### Automatic image verification

- By the CEREC Connect software.

### Transmission of model data, including order details, via the Sirona Connect portal.

### Receipt of data and order – downloaded from the Sirona Connect portal via the inLab software.

### Processing of the order and design of the restoration via the inLab software.

### Milling of pin models (in-house) with the inLab MC XL unit.

### Central model production and delivery to the dental laboratory.

### Production of the restoration on the inLab milling unit either in-house, by a partner laboratory or by infinDent*.

### Finishing the CAD/CAM restoration in the lab.

Conventional, model-based finishing techniques can be used.

* Not available in all countries.
Quality as opposed to mass production.

Conventional impression-taking and model production are among the most labor-intensive and error-prone processes in dental practices and laboratories. By contrast, digital impressions deliver enhanced precision, minimize possible sources of error and maximize patient satisfaction.

Fewer processing steps in the dental practice and laboratory result in greater reliability
- No materials and application-related inaccuracies (bubbles, tears, gaps in the preparation margin)
- No risk of incorrect mixing and/or non-compliance with the prescribed mixing, impression and setting times
- No need for disinfection, storage and packaging
- No uncontrolled expansion and contraction of the impression material before, during and after transport

From the impression to the model – comparison of process steps

<table>
<thead>
<tr>
<th>Conventional impressions</th>
<th>Digital impressions</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Processing steps in the dental practice</strong></td>
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</tr>
<tr>
<td>1. Prepare the impression tray</td>
<td>1. Apply Optispray</td>
</tr>
<tr>
<td>2. Take silicone impression</td>
<td>2. Acquire digital impression</td>
</tr>
<tr>
<td>3. Transfer impression</td>
<td>3. Complete order form</td>
</tr>
<tr>
<td>4. Disinfect</td>
<td></td>
</tr>
<tr>
<td>5. Complete order form</td>
<td></td>
</tr>
<tr>
<td>6. Store until collection</td>
<td></td>
</tr>
<tr>
<td><strong>Dental laboratory workflow</strong></td>
<td><strong>Dental laboratory workflow</strong></td>
</tr>
<tr>
<td>1. Clean</td>
<td>1. Confirm receipt of data</td>
</tr>
<tr>
<td>2. Trim impression</td>
<td>2. Order model</td>
</tr>
<tr>
<td>3. Pour stone material</td>
<td>3. Wait for delivery of model</td>
</tr>
<tr>
<td>4. Trim arch</td>
<td></td>
</tr>
<tr>
<td>5. Pin</td>
<td></td>
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<tr>
<td>6. Trim base</td>
<td></td>
</tr>
<tr>
<td>7. Perform saw-cut</td>
<td></td>
</tr>
<tr>
<td>8. Free preparation margin</td>
<td></td>
</tr>
<tr>
<td><strong>Finished model</strong></td>
<td><strong>Finished model</strong></td>
</tr>
</tbody>
</table>

Discover the unique benefits of digital impressions
Do you want to retain existing patients and attract new patients to your dental practice? If so, digital impressions are the ideal solution. Discover more about the possibilities for achieving the highest levels of precision and comfort for your patients. In short, instead of taking an impression you should concentrate on making a good impression on your patients. The digital impression-taking process is exceedingly precise and does not provoke a gag reflex. This means that you are free to concentrate on your work. This is in the interests of your dental practice. And in the interests of your patients, who value first-class treatment and high-quality dental restorations.
New standards in precision.

The accuracy of the digital impression has a decisive influence on the quality of the final restoration. Thanks to its innovative lens concept, the CEREC Bluecam achieves an unprecedented degree of precision*, due mainly to the short-wavelength blue light. New users are in a position to achieve high-quality optical impressions – even in inaccessible areas of the oral cavity.

**Extensive depth of field**
The parallel light beam and the extensive depth of field of the CEREC Bluecam ensure optimum image quality – regardless of whether you use the camera support, place the camera directly on the tooth or maintain a small clearance between the camera and the tooth. In all cases you’ll be able to generate precise optical impressions – even in inaccessible areas of the patient’s mouth.

**High fidelity at the preparation margin**
Thanks to its extensive depth of field, the CEREC Bluecam generates very precise images of the preparation margin. This would be impossible without the short-wavelength blue light.

**Automatic image capture in the desired treatment position**
The camera detects the optimum moment and triggers the exposures automatically. All you have to do is move the camera step by step across the area you want to scan. In this way it is possible to capture a complete quadrant in a single smooth process. In addition you can maintain a comfortable and ergonomic treatment position – for yourself and the patient.

**Shake-free images**
Thanks to its high-speed operation, the CEREC Bluecam is the ideal basis for acquiring shake-free images. The built-in shake detector ensures that images are captured only when the camera is held steadily. The CEREC Connect software automatically selects the optimum images.

**Space-saving camera which can be placed directly on the tooth**
CEREC Bluecam is based on the tried and tested CEREC intraoral camera, thousands of which are already in use. Its compact dimensions facilitate easy access to the posterior molars. With the aid of the camera support the CEREC Bluecam can be placed directly on the tooth. The support automatically ensures the correct clearance between the tooth and the camera.

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* Results of a study by Prof. Dr. Mehl (Zurich University, 2008): Accuracy of depth measurement: up to 19 µm.
Acquiring digital impressions in the dental practice

The CEREC AC: The easy-to-use acquisition centre.

The CEREC AC and the CEREC Bluecam are the cornerstones of the digital impression-taking process. They are easy to use and deliver outstanding precision and clinical reliability. The practical and proven CEREC Connect software guides the user step by step through the acquisition process. A further advantage is that the model data can be easily archived.

The stepping stone to digital impressions: CEREC AC
The CEREC AC acquisition unit, the CEREC Bluecam and the integrated CEREC Connect software are all you need in order to acquire high-precision digital impressions. The software boasts an intuitive user interface and does not require any special computer skills. A milling unit can be added at a later date, thus creating the basis for fabricating chairside restorations.

1. An antireflective coating of the tooth surfaces is a prerequisite for acquiring precise digital impressions. The CEREC Optispray is hygienic, easy to use and ensures the optimum capture of details at the preparation margin.

2. The CEREC Bluecam captures the preparation, the antagonist and the bite situation directly in the patient’s mouth. You can also create additional image catalogs to scan wax-ups or the initial situation. The short wavelength blue light clearly marks the target area and ensures convenient orientation.

3. During the acquisition process you receive a preview of the three dimensional data model.

4. On the basis of the 3D preview you can assess the quality of the digital impressions and, if necessary, make adjustments immediately.

5. In just a few seconds the CEREC Connect software computes a three-dimensional virtual model consisting of the preparation, the antagonist and the bite situation.

6. Following this you can define the preparation margin with the aid of the CEREC Connect software. Alternatively, this task can be performed later in the dental laboratory.

After the digital impressions have been acquired they are transmitted to the dental laboratory via the Sirona Connect portal together with the relevant order details.
The Sirona Connect portal – the direct link between practice and laboratories.

The Sirona Connect portal is a web-based platform that links up dental practices and laboratories. It supports the online transmission* of model data and ordering information. The dentist can upload the data directly from the CEREC Connect software.

At the receiving end the dental technician uses the inLab software to download the data to his or her computer. The laboratory has various options for fabricating models and restorations.

Just-in-time benefits
If required, the dentist and the dental technician can view the 3D model simultaneously on their computer monitors and exchange information quickly and easily. The direct feedback from the dental laboratory saves time and reduces the need for subsequent corrections and adjustments.

* Sirona Connect requires a standard broadband Internet connection and a valid e-mail address. In addition, the dentist and dental laboratory have to register with the Sirona Connect portal (once only).
The Sirona Connect portal – the digital network.

Direct data uploads, downloads and processing without incurring any delays or transport costs. The Sirona Connect portal streamlines collaboration and communication between dental practices and laboratories.

**The benefits for the dentist**
- The quick and direct commissioning of laboratory services saves time in the dental practice
- Direct, real-time communication with the laboratory allows corrections to be made before the patient leaves the dental practice
- Transmission of additional information, e.g. photographs of the patient

**The benefits for the dental technician**
- Time savings resulting from the immediate notification of the incoming order via e-mail
- Reduction in the number of subsequent adjustments thanks to the direct discussion of the model data with the dentist immediately after the order has been received
- Continuous availability – after you have registered with the Sirona Connect portal you can be contacted directly by all Sirona Connect dentists

**DATA TRANSMISSION IN PROGRESS**

1. After registering once only with the Sirona Connect portal (www.sirona-connect.net) you can begin acquiring digital impressions with your CEREC Bluecam camera. The CEREC Connect software then computes a virtual model.
2. You fill in the online order form and select your preferred dental laboratory with a single click.
3. You then upload the model data to the Sirona Connect portal together with your order. After the data has been received and checked the dental laboratory sends an order confirmation.

1. You register and upload your contact details once only to the Sirona Connect portal. Following this step, dentists can select you as their preferred inLab dental laboratory.
2. As soon as the dentist has uploaded the order and the model data to the Sirona Connect portal, you will be notified by e-mail. With the aid of the inLab software you can then download the data immediately, check the data, clarify any questions by phone and then confirm the order online.
3. You have various options for producing the model. You can either order the model from Sirona’s central production service*, mill the model in-house on your inLab MC XL unit or export the model data to third-party CAD/CAM software.

Further information about the production of models and restorations is provided on the following pages.

* Not available in all countries.
Modern model-making: mouse clicks replace manual processing.

InLab laboratories have the option of sending the 3D model data to Sirona’s central production service*. This saves valuable time and eliminates numerous manual tasks – for example, the physical cleaning of impressions, the mixing and pouring of stone compounds, the creation of bases, the insertion of pins, the grinding of stone models, and the insertion of sawcuts. Instead, the Sirona Connect model is created directly out of an acrylate polymer material using the so-called stereo lithography (SLA) process. With the OPEN Model interface it is also possible to export STL files to use alternative production methods like 3D printers.

Your benefits
- More robust than stone models: do not shatter if dropped
- More wear-resistant than stone models: the shape of the stump does not change when the restoration is frequently mounted and removed
- Already divided into segments: each prepared stump has its own segment
- Flexible sawcuts: segmentation is still possible even in difficult situations
- Already pinned to the baseplate: similar to conventional modelling techniques
- Optional availability of an additional stump equipped with a gingiva mask: ideal for evaluating the veneer facings in the case of subgingival preparations

To order a physical working model you only need to send the 3D model data to Sirona’s central model production service*. The models are made out of an acrylic polymer using a SLA (stereolithography) process and are delivered directly to your laboratory within three working days. The models are all ready pinned to baseplates.

With the aid of special adapter plates it is possible to articulate the model in the usual way. It is then ready for the fitting of the CAD/CAM restoration or for further processing using conventional techniques.

The fast and flexible alternative – in-house model production using the inLab MC XL

No other CAD/CAM system offers such a seamless digital workflow from the initial digital impression through to the fabrication of models and restorations. With the aid of the upgraded inLab MC XL milling unit you can not only fabricate a wide range of dental restorations, but also create pin models. This process is especially well-suited to partial-arch models for single-tooth restorations as well as small-sized posterior bridges. In-house model production delivers significant advantages in terms of time, flexibility and cost-effectiveness.

Further information about the CAD/CAM production of bridge frameworks can be found on the following double pages.

* Not available in all countries.
Ideally equipped thanks to the inLab 4.0 software.

The inLab 4.0 software is your stepping-stone to the processing of digital impressions via Sirona Connect. The software facilitates direct access to the Sirona Connect portal, the downloading of model and order data as well as the ordering of the Sirona Connect models from Sirona's central production service. Last but not least, the inLab 4.0 software enables you to design and mill restorations.

Flexible fabrication options
The inLab software caters for a broad spectrum of indications such as multi-unit bridge frameworks, bars, attachments, custom abutments, temporary restorations as well as wax-ups. The easy-to-use software guides you step by step to the desired result and is the perfect complement to your craft skills.

NEW: Via optional interfaces you can export data in the STL format, ready for processing on third-party CAD/CAM software.

Biogeneric occlusal surface design
Biogeneric is a unique reconstruction tool for inlays, onlays, partial crowns, full crowns and anatomically sized bridges. The software analyzes the patient's existing dentition as a basis for designing the occlusal morphology of the restoration. This leads to natural, patient-specific results.

Digital veneering
In the Multilayer mode you can design anatomically sized crowns and bridges and then mill the framework and the corresponding veneer out of different materials. Compared with the conventional overpressing method, this saves time and eliminates potential sources of error.
Production of restorations

**inLab is your passport to a successful future.**

Consisting of a CAD/CAM software package and a milling unit, the inLab system gives you complete control over the design and production process. With these advanced CAD/CAM capabilities at your fingertips you will become a preferred partner for the fulfilment of Sirona Connect orders and take a decisive step towards an independent and successful future.

**The benefits of using your own inLab milling unit**
- Time and cost benefits compared with centralized production
- Competitive advantages thanks to the low-cost production of zirconium oxide restorations
- Expanded portfolio of services, thanks to the extensive range of materials and indications supported by the inLab system

**inLab MC XL**
The inLab MC XL offers unique benefits – for example, the wet-milling of silicate ceramics, the cost-effective production of zirconium oxide restorations (to give just a few examples).

**Diverse range of materials**
The inLab software and milling unit are capable of handling a broad spectrum of materials: zirconium oxide, aluminium oxide, lithium disilicate, feldspar and glass ceramics and polymers.

**Finishing**
Following the delivery of the Sirona Connect model you can fit and fine-tune the restoration in the usual way. The finished restoration is then dispatched to the dental practice.
Benefits

Do you want to find out more about Sirona’s CAD/CAM technology? Below we have listed various informative brochures, which you can order from your CEREC dealer or else download directly from www.sirona.com. Continuously updated information about digital impressions and Sirona Connect is available at www.sirona-connect.net.

Technical specifications.

### Dental practice

<table>
<thead>
<tr>
<th>CEREC AC</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dimensions (H x W x D)</td>
<td>121 cm x 36 cm x 47 cm</td>
</tr>
<tr>
<td>Weight</td>
<td>43 kg</td>
</tr>
<tr>
<td>Monitor</td>
<td>19&quot;, resolution: 1,280 x 1,024 pixels</td>
</tr>
<tr>
<td>Length of camera</td>
<td>20 cm</td>
</tr>
<tr>
<td>Length of camera cable</td>
<td>approx. 140 cm</td>
</tr>
<tr>
<td>Weight of camera</td>
<td>280 g</td>
</tr>
</tbody>
</table>

**Imaging process**
- Stripe light projection and telecentric lens featuring a new technology based on a high-performance blue diode (wavelength: 470 nanometres) for an optimum depth of field and excellent reproduction of details
- Automatic image capture
- Camera can be placed directly on the tooth and ensures easy access to the posterior molars

**Input devices**
- Optical trackball and membrane keyboard

**Power supply**
- Standard mains power supply (100–230 V, 50/60 Hz)
- Optional: uninterruptable power supply (battery)

**Network connection**
- LAN and WLAN

**Software**
- CEREC Connect software 4.0
- Pre-installed

**Options**
- Upgrade to chairside treatment is possible at any time via the addition of a:
  - CEREC 3 milling unit or
  - CEREC MC XL milling unit
- Simple integration of future product developments such as "CEREC meets GAILEOS"

### Dental laboratory

<table>
<thead>
<tr>
<th>Production</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>InLab MC XL</td>
<td>Inlays, onlays, veneers, crowns, copings, bridges and models</td>
</tr>
<tr>
<td>Materials:</td>
<td>Zirconium oxide, aluminium oxide, feldspar/glass ceramic, lithium disilicate, infiltration ceramic, polymers</td>
</tr>
</tbody>
</table>

**infinDent central production service (not available in all countries)**
- Copings, bridge frameworks and models up to 16 units
- Materials: Zirconium oxide, aluminium oxide, infiltration ceramic, non-precious metal and polymers

**Software**
- inLab > V3.8
- Log in to the Sirona Connect portal
- Designing of restorations

**Options**
- Upgrade to chairside treatment is possible at any time via the addition of a:
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  - CEREC MC XL milling unit
- Simple integration of future product developments such as "CEREC meets GAILEOS"

Useful information.

- Log in to the Sirona Connect portal
- Designing of restorations

**inLab system brochure**

Sirona Connect portal

**Requirements:** e-mail address, once-only registration with www.sirona-connect.net

- Uploading of model and order data and transmission to the dental laboratory in just a few minutes
- Downloading of model and order data by the dental laboratory

Subject to technical modifications.
Sirona – unique worldwide systems expertise in dental equipment products

Sirona develops and manufactures a comprehensive range of dental equipment, including CAD/CAM Systems for dental practices (CEREC) and laboratories (inLab), Instruments and Hygiene Systems, Treatment Centers and Imaging Systems. Sirona manufactures high technology products that guarantee ease of use and a high return on investment – for the good of your practice and for the benefit of your patients. In this way, you can approach every challenge you face with confidence. Enjoy every day. With Sirona.