Dentsply Sirona

3D printing solution for practice and lab

Primeprint Solution™

Learn more >

dentsplysirona.com/primeprint

Primeprint Solution

Primeprint Solution is designed and built for dental excellence in practice and labs by one of the leading provider in digital dentistry. This 3D printing solution enables users to improve their patient's experience by offering additional procedures, such as splints, that can grow their practice and/or lab. Primeprint Solution is powered by DS Core, integrating seamlessly into existing digital workflows and with other solutions within the DS digital universe for excellent performance and growth opportunities in both dental practices and labs.

Learn more >

Click on the arrow to learn more

Dr. Michael Skramstad (sponsored),
Dentist, Orono Dental Care,
Orono, MN, USA

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Primeprint Solution – A medical-grade 3D printing solution

Primeprint Solution is a simplified and highly automated end-to-end 3D printing solution, from dental intelligent software to 3D printing and fully automated post-processing. Regulated parameters help to ensure repeatable high quality of printed appliances for excellent treatment outcomes. Primeprint Solution offers convenient and easy 3D printing and post-processing for the production of biocompatible applications.

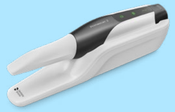
Learn more >

Click on each product to learn more

Scan

Primescan® AC

Primescan® 2



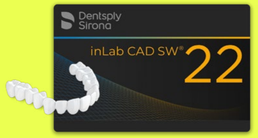
Primescan® Connect

Take digital impressions with any Primescan® or 3Shape Trios.

Design

CEREC® Software

inLab® CAD Software



DS Core™ and DS Core™ Create

3D printing with Primeprint Solution is based on restoration data from various possible design options: Design with CEREC Software, inLab CAD Software, or DS Core Create – for a fully validated CAD/CAM workflow.

3D Printing with Primeprint Solution

inLab® CAM Software connected with DS Core™

Primeprint® and Primeprint PPU DS Core™ Care

Material concept

Designed and built for dental excellence

Primeprint Solution has been developed as a medical-grade 3D printing solution to enhance patient care. Dental intelligent software and hardware together enable you to print biocompatible applications with repeatable and accurate results.[1]

Primeprint Solution allows for full delegation and helps you maximize your productivity thanks to its high level of automation and reduced handling times.

Primeprint's quality process protocol, involving automated processing times, supports a high level of safety based on medical device compliance and automatic case documentation. The innovative Primeprint Box enables convenient and easy material handling without direct contact with resins.

Dentsply Sirona developed Primeprint Solution according to the requirements outlined in the FDA`s guidance "Technological considerations for additive manufactured medical devices". Furthermore, Primeprint Solution complies with MDR material manufacturer process specifications.

Applications with Primeprint Solution

Splints

Solid Model

Working Model

Gingiva Mask

Thermoforming Model

Surgical Guide

Temporary

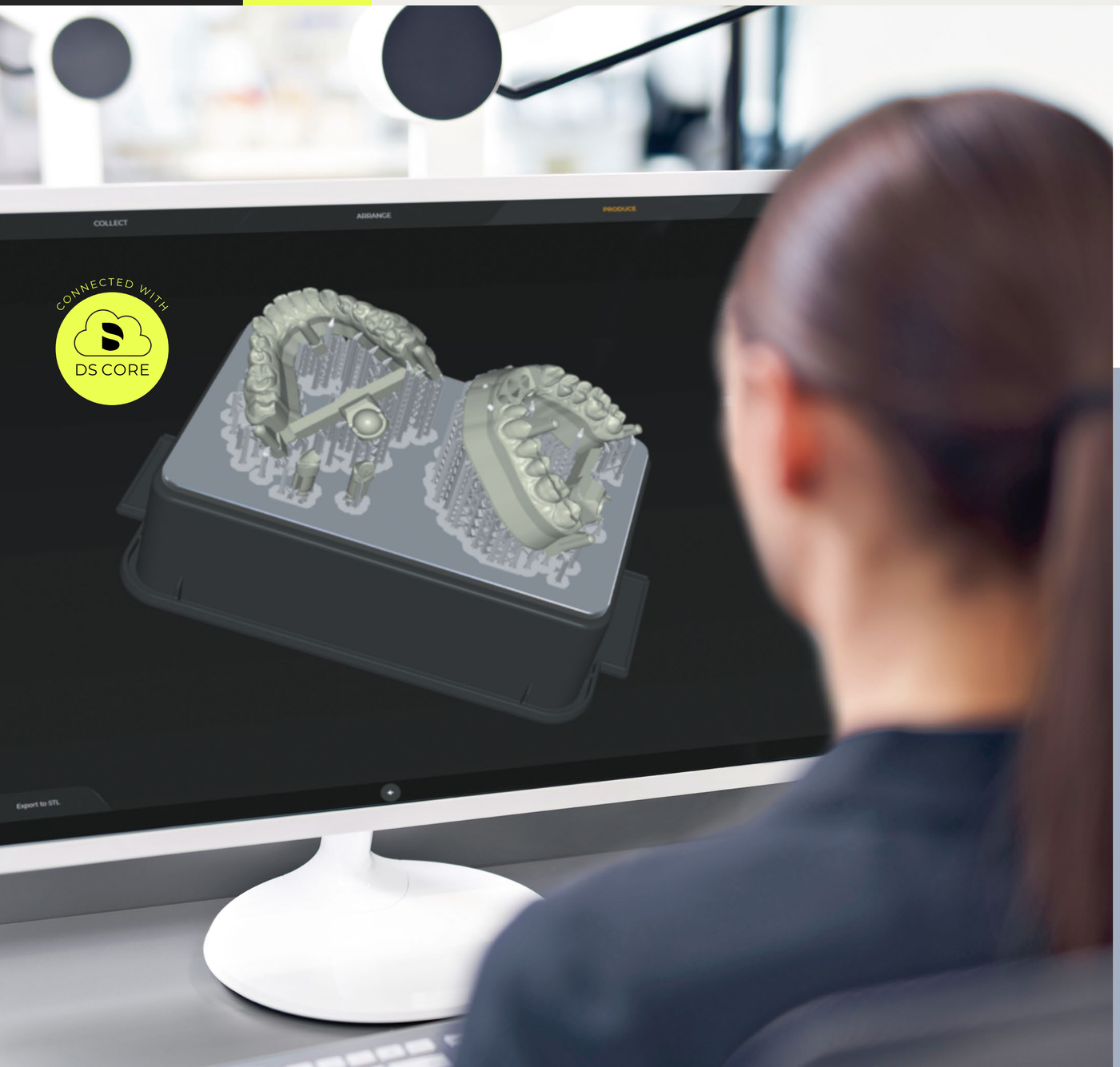
Impression Tray

Cast

Denture

Try-In

1 Reich S, Berndt S, Kühne CH, Herstell H. Accuracy of 3D-Printed Occlusal Devices of Different Volumes Using a Digital Light Processing Printer Appl. Sci. 2022, 12(3), 1576; https://doi.org/10.3390/app12031576
Berndt S, Herstell H, Raith S, Kühne CH, Reich S. Accuracy of 3D-Printed Master Cast Workflow Using a Digital Light Processing Printer. Appl. Sci. 2022, 12(5), 2619; https://doi.org/10.3390/app12052619



Primeprint Solution – CAM Software

The inLab CAM Software was specifically developed for use with Dentsply Sirona manufacturing units. With a few automated steps, you prepare the fully constructed application in the CAM software. The software controls all necessary print and post-processing steps in a fully automated way and monitors the complete process up to the building platform removal from the PPU.

Flexible integration and seamless workflows

3D printing with Primeprint Solution is based on restoration data from various possible design options.

Design with			
DS Core Create[1]	CEREC Software	inLab CAD Software	3rd party CAD Software[2]
Import of ready-to-print file with inLab CAM Software	Automatic transfer to **inLab CAM Software** without manual steps		Manual import and additional information with inLab CAM Sofware
inLab CAM Software for Primeprint Solution	• "Fast Forward" for direct 3D printing production start without additional manual effort		• Individual adjustments possible at any time

1 DS Core Create only available for DS Core active account. DS Core and DS Core Services are subject to country availability. Please contact your local DS representative.
2 All design files in *.stl file format are beyond the intended use of the respective Dentsply Sirona production system and potentially inadequate. Dentsply Sirona rejects liability for all possible risks to the user, third parties, and the production device itself with all associated components when processing designs based on *.stl file format.

Learn more >

CAM software functions

- Manufacturing on DS Core
- "Fast Forward" production
- Dental Intelligence from CAD to CAM
- Object positioning
- Preparation of object and fabrication structures
- Analysis tools

Click on a topic to learn more

Learn more

Christian Schuchmann (sponsored), Dental Technician and Managing Director Dental-Labor Teuber, Darmstadt, Germany

Primeprint – 3D Printer

Before starting the manufacturing step, the Primeprint Material Unit (or the Primeprint Material Unit Type S) and Primeprint Box together with the building platform are inserted into the 3D printer, then the print process can begin immediately. After completing the print, the 3D printer can immediately be prepared for the next print job. Simply change Primeprint Box and Material Unit.

Click on a image to learn more

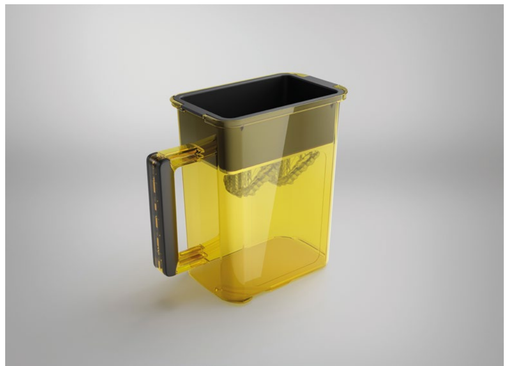
Learn more >

The product display provides supporting information about various functions and statuses:

- Availability of Primeprint Box, material unit and job data
- System settings and routine actions
- Start preheating
- Resin amount per job, remaining resin and color coding

Click on the arrow to learn more

Dr. Meena Barsoum (sponsored), Dentist, Impressive Smiles, Arlington Heights, IL, USA



Primeprint PPU – Post-Processing Unit

The PPU performs all post-processing steps required for the dental 3D print automatically and without manual interaction – with the option to delegate.

- Pre-washing: First wash cycle
- Final washing: Second wash cycle
- Drying
- Light-curing

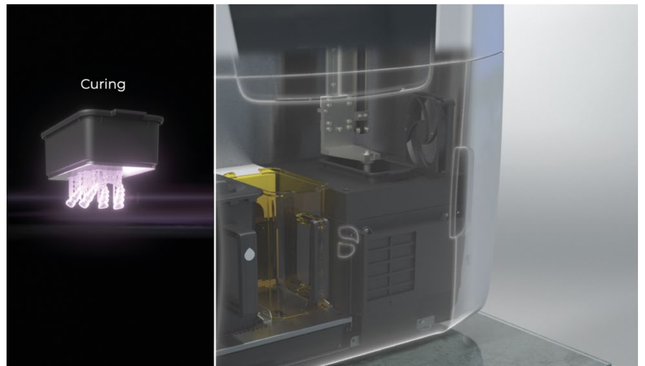
Thus, any time-consuming manual post-processing is eliminated. All PPU process steps are protected from UV light and are controlled and monitored by the CAM software. A protocol can be created as PDF.

Click on a image to learn more

The process can be started directly via the Primeprint PPU 7” touch screen, and various information can be obtained, e.g.:

- Job availability and status
- Washing container availability and status
- System setting
- Start job

and more.



Primeprint Solution – Material concept

Validated materials and RFID-supported, automated material management support quality, process, and documentation security. All material parameters were optimized to offer a high level of process safety for each application.

The Primeprint material concept offers user-friendly support with its color-coded material cartridge system. Each print material type is associated with a different color, which is mirrored in the CAM software for quick orientation, for correct material selection, and easily identifiable storage.

Primeprint Material Unit with inserted material cartridge

Materials

Primeprint Splint

Primeprint Splint SF

Primeprint Splint ST

Primeprint Model C

Primeprint Model

Primeprint Gingiva

Primeprint Model T

Primeprint Guide

Primeprint Temp

Primeprint Tray

Primeprint Cast

Lucitone Digital Print™

Lucitone Digital IPN™

Lucitone Digital Value™

Click on an image to learn more about application and properties of the materials

Primeprint Solution – In the practice

Primeprint Solution enables dentists to improve patient experience and offer additional procedures, thereby expanding their practice. It integrates easily into existing digital workflows and seamlessly into the entire DS Digital Universe for excellence in dental practices.

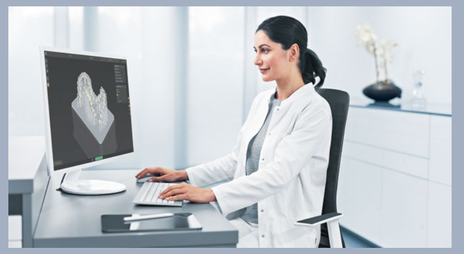
Learn more >

Click on the arrow to learn more

The Primeprint Solution workflow in the practice:

1 Intraoral scanning

2 Application design



3 Preparation of print job

4 3D printing and post-processing

5 Finalization

Click here to go to the workflow of a surgical guide – just scan the QR code!

Dr. Verena Freier (sponsored), Dentist, Zahnmedizin Bad Soden, Germany

Click on the arrow to learn more

Primeprint Solution – In the dental lab

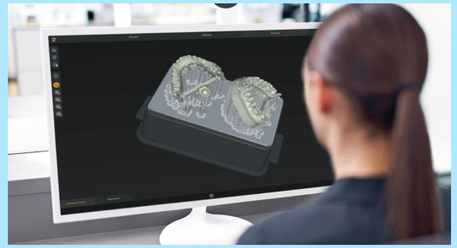
Primeprint Solution expands the digital manufacturing options in the dental lab and can be integrated easily into existing digital workflow.

Learn more >

Click on the arrow to learn more

The Primeprint Solution workflow in the dental lab:

1 Digital design



2 Preparation of print job

3 3D printing and post-processing

4 Finalization

Scan now:
Take a look at the workflow of a working model

1 All design files in *.stl file format are beyond the intended use of the respective Dentsply Sirona production system and potentially inadequate. Dentsply Sirona rejects liability for all possible risks to the user, third parties, and the production device itself with all associated components when processing designs based on *.stl file format.

Hardware/Software	
PC requirements	inLab PC ≥ 5.0 or inLab 4 PC with Performance Package
Software requirements	CEREC Software 5.2.3 or inLab CAD Software 22.1.0, inLab Apps 22.0.0, inLab CAM SW 22.1.0

Primeprint	
Dimensions WxHxD (in mm)	530 × 670 × 515
Dimensions WxHxD (in inches)	20.86 × 26.37 × 20.27
Weight	41 kg / 90.38 lb
Nominal system voltage	AC 100 V... 240 V
Nominal system frequency	50/60 Hz
Rated current	2,0 A–0,85 A
Ports	USB type A, USB type B, LAN connection via RJ45, power connection
Printer control	7" color touchscreen
Print technology	Digital Light Processing
Wavelength	385 nm
Projector resolution	1920 × 1080 pixel ("Full HD")
Layer thickness	50 µm, 100 µm, 200 µm
Pixel size	70 µm
Print volume WxHxD	134 × 150 × 76 (in mm) / 5.28 × 5.91 × 2.99 (in inches)
Resin fill system	Automated, cartridge-based
Foil lifetime	> 250 print jobs
Integrated filters	Activated carbon filter, air filter
Quality protocol	Available for every print job, based on RFID tag information
Sensoring and monitoring System	Resin level, cartridge volume and resin type, filter lifetime, light source power, status of Primeprint Box and Material Unit

Primeprint PPU	
Dimensions WxHxD (in mm)	730 × 670 × 515
Dimensions WxHxD (in inches)	28.74 × 26.37 × 20.27
Weight	50 kg
Nominal system voltage	AC 100 V ... 240 V
Nominal system frequency	50/60 Hz
Rated current	4.2–2.2 A
Ports	USB type A, USB type B, LAN connection via RJ45, power connection, nitrogen port
Control	7" color touchscreen, automated assignment of wash and post-processing exposure settings
Post-processing volume WxHxD	134 × 150 × 76 (in mm) / 5.28 × 5.91 × 2.99 (in inches)
Cleaning agent volumes	2.5 L per container
Number of washing containers	2 per material
Compatible cleaning agent	Isopropyl, 99%
Post-curing atmosphere	Nitrogen atmosphere created by purity level 2.8 nitrogen, equivalent to 99.8%
Nitrogen pressure	4–8 bar
Post-curing temperature	up to 80°C / 176 °F
Integrated filters	Activated carbon filter, ozone filter
Quality protocol	Available for every print job, based on RFID tag information
Sensoring and Monitoring System	Solvent level, solvent saturation, flashlight lifetime, filter lifetime

Material			
Cartridge dimensions WxHxD (in mm)	260 × 40 × 150		
Cartridge dimensions WxHxD (in inches)	10.24 × 1.57 × 5.90		
Resin amount per cartridge	1 kg (Primeprint Gingiva 500g)		
Available materials and colors		Medical product class MDR	Medical product class FDA
	Primeprint Splint	IIa	I
	Primeprint Splint SF	IIa	I
	Primeprint Splint ST	IIa	I
	Primeprint Guide	IIa	I
	Primeprint Temp (A1, A2, A3)	IIa	II
	Primeprint Model C	TEC resin	TEC resin
	Primeprint Model	TEC resin	TEC resin
	Primeprint Model T	TEC resin	TEC resin
	Primeprint Gingiva	TEC resin	TEC resin
	Primeprint Gingiva Starter Kit	TEC resin	TEC resin
	Primeprint Cast	TEC resin	TEC resin
	Primeprint Tray	I	I
	Primeprint LDP Denture Base (Original, Light, Light Reddish Pink, Dark Reddish Pink)	IIa	II
	Primeprint LD Value Trial Placement A1	IIa	II
	Primeprint LD IPN Premium Tooth 500ML (A1, A2, A3, A3.5, B1, B2, C1, BL3)	IIa	II
Process validation	Performed for all materials		
Lifetime	at least 24 months		
Cartridge identification	RFID tag and color coding		

Dentsply Sirona

Sirona Dental Systems GmbH
Fabrikstraße 31, 64625 Bensheim, Germany
dentsplysirona.com

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Primeprint Solution

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Learn more >

Click on the arrow to learn more

3D printing has just taken the next leap forward with Primeprint. With the combination of complete integration, enclosed automated workflow, and industry defining efficiency, Primeprint gives me and, most importantly, my staff confidence that we are delivering very good and safe 3D printed parts to our patients. Furthermore, the automation supports that every application we 3D print is processed, cleaned and cured to a very high standard.

Dr. Michael Skramstad (sponsored), Dentist, Orono Dental Care, Orono, MN, USA

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Primeprint Solution – A medical-grade 3D printing solution

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Primescan® A

Take digital im

Material concept

possible design options: Design with CEREC Software, inLab CAD Software, or DS Core Create – for a fully validated CAD/CAM workflow.

X

Primescan® AC, Primescan® 2 and Primescan® Connect

Primescan is a highly accurate scanner with the potential to enable clinicians to digitalize all indications. The intraoral scanners assist the expansion of dental practices through increased treatment options, now and in the future. With Primescan, dentists can arrange their workflows according to their preferences.

Learn more >

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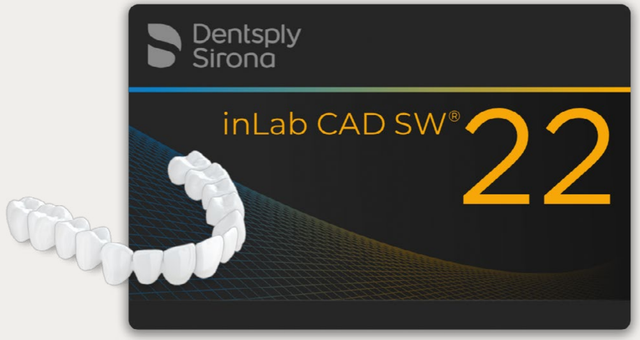
CEREC Software and inLab CAD Software

The upstream design steps of the CEREC and inLab CAD Software automatically take into account the parameters required for the subsequent 3D printing with Primeprint. For users of 3rd party CAD software, the design data in STL format can be imported into the CAM Software.

The connection to the DS Core cloud platform makes it even easier to exchange files between DS Core, the design software and CAM software.

CONNECTED WITH DS CORE



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X

DS Core and DS Core Create

DS Core is the gateway to the digital universe of Dentsply Sirona solutions, built to empower your growth by offering a more integrated practice. DS Core provides a cloud storage and patient files sharing solution that supports GDPR/HIPAA compliant collaboration with colleagues and partners.[1,2]

With DS Core Create dentists get access to high-quality custom designs created by expert lab technicians. The designs can easily be requested via DS Core without having to operate a design software.[1,3]

DS CORE

Learn more >

1 DS Core and DS Core Services are subject to country availability. Please contact your local DS representative.
2 DS Core is not a medical software. It is not intended to diagnose, treat, cure or prevent any disease or health condition. Use only for information, education or sharing purposes.
3 DS Core Create only available for DS Core active account.

Primeprint Solution – A medical-grade 3D printing solution

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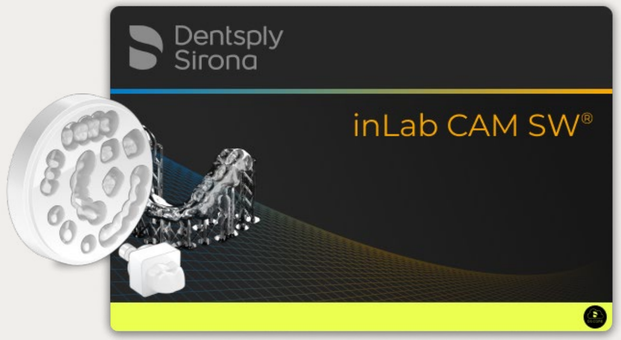
Material concept

possible design options: Design with CEREC Software, inLab CAD Software, or DS Core Create – for a fully validated CAD/CAM workflow.

inLab CAM Software

The software offers fast and user-friendly preparation of the print object with just a few clicks. Primeprint's quality process protocol, involving automated process times, supports a high level of safety based on medical device compliance and automatic case documentation.

The latest inLab CAM Software Version comes with Manufacturing features on DS Core allowing centralized management of all manufacturing tasks and equipment in one place. This streamlines the production process, improves equipment management, and simplifies documentation with automated reports. Users can initiate and monitor production remotely, from any connected device, with just a single click.[1]



CONNECTED WITH DS CORE

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1 A paid DS Core subscription is mandatory.

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Material concept

possible design options: Design with CEREC Software, inLab CAD Software, or DS Core Create – for a fully validated CAD/CAM workflow.

X

Primeprint and Primeprint PPU DS Core™ Care

3D printing, washing and light-curing in highly automated processes with just two devices – the Primeprint 3D printer and the Primeprint PPU (Post processing unit). The innovative Primeprint Box enables convenient and easy material handling without direct contact with resins.

DS Core Care is a comprehensive technical service and support solution that protects your Primeprint.[1] It provides telephone support, quick supply of spare parts from the original manufacturer, customer support portal, and preventive maintenance to help optimize equipment lifetime, therefore allowing you to spend more time focusing on your patients.

Learn more
Primeprint / Primeprint PPU >

Learn more
DS Core Care >

1 DS Core and DS Core Services are subject to country availability. DS Core Care is not yet available for devices sold to laboratories. Please contact your local DS representative.

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Material concept

possible design options: Design with CEREC Software, inLab CAD Software, or DS Core Create – for a fully validated CAD/CAM workflow.

X

Material concept

Primeprint Solution is supported by a comprehensive and well thought-out material concept, which includes a Material Unit for holding the material cartridges – one cartridge for each application. The intelligent material handling concept was developed for safe and clean usage, with RFID coding throughout the complete manufacturing process for ultimate peace of mind.

Learn more >

CAM software functions

- Manufacturing on DS Core
- "Fast Forward" production
- Dental Intelligence from CAD to CAM
- Object positioning
- Preparation of object and fabrication structures
- Analysis tools

Click on a topic to learn more

Learn more >

Christian Schuchmann (sponsored), Dental Technician and Managing Director Dental-Labor Teuber, Darmstadt, Germany

I am more than enthusiastic about Primeprint Solution, as it means 3D printing on a completely new level for our dental lab. The intelligent CAM software already places the print objects appropriately on the building platform with the "Fast Forward" function. I can quickly and easily switch between the different materials and work with a high level of efficiency. The handling with the color-coded material units and washing containers makes the entire process clean and efficient, and thanks to the activated carbon filter I can also work easily with Isopropanol. The printer speed allows me to run multiple print jobs, even during the day. Previously, I was used to print overnight and was then stuck with a material – this has changed now.

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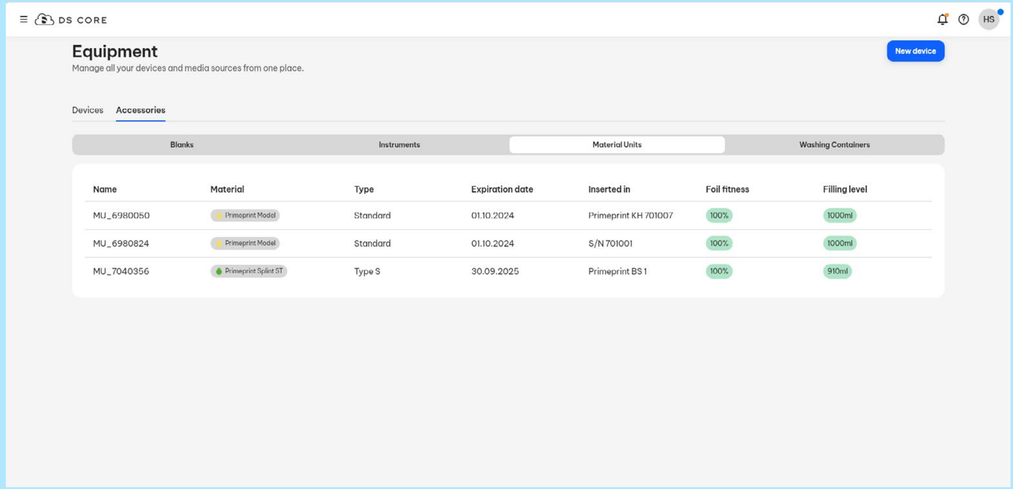
Manufacturing on DS Core



Manufacturing on DS Core is a feature set that is accessible via DS Core and enables to benefit from various inLab CAM functions in the cloud environment.[1] Milling or printing jobs can be started on any connected equipment, regardless of location, directly from DS Core. Centralized management of all manufacturing tasks and equipment is possible in one place, ensuring optimal utilization and real-time oversight. After the manufacturing an automated manufacturing report can be downloaded, directly saved to DS Core. Real-time status updates on accessories and consumables, support efficient operation and enhanced maintenance.

1 A standard or advanced DS Core subscription is mandatory for accessing this feature set.

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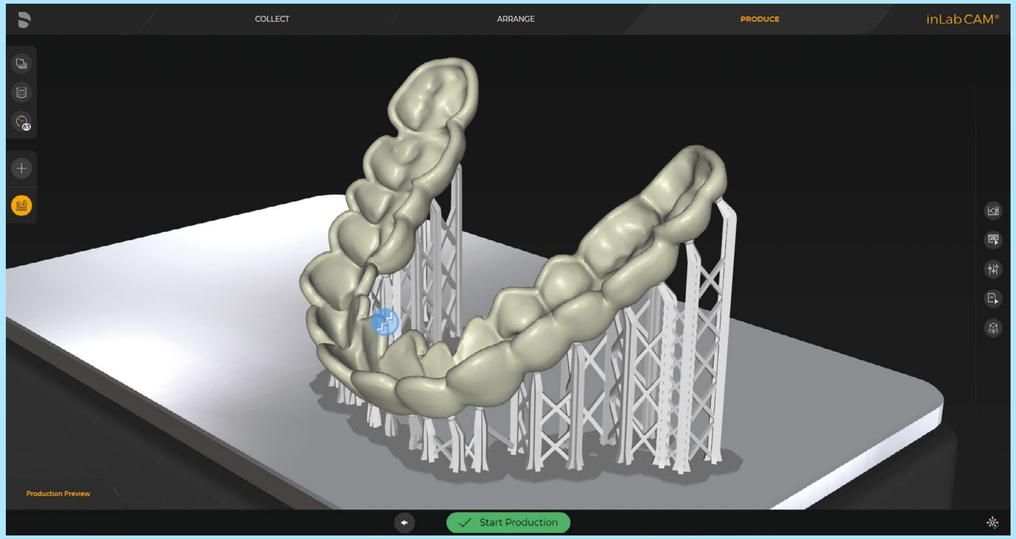
"Fast Forward" production



The printing process can be initiated immediately, in a time saving manner and without the need for further manual adjustments. Alternatively, the CAM software guides the user step-by-step through the particular print object preparation, offering different adjustment options as desired.

CAM software functions

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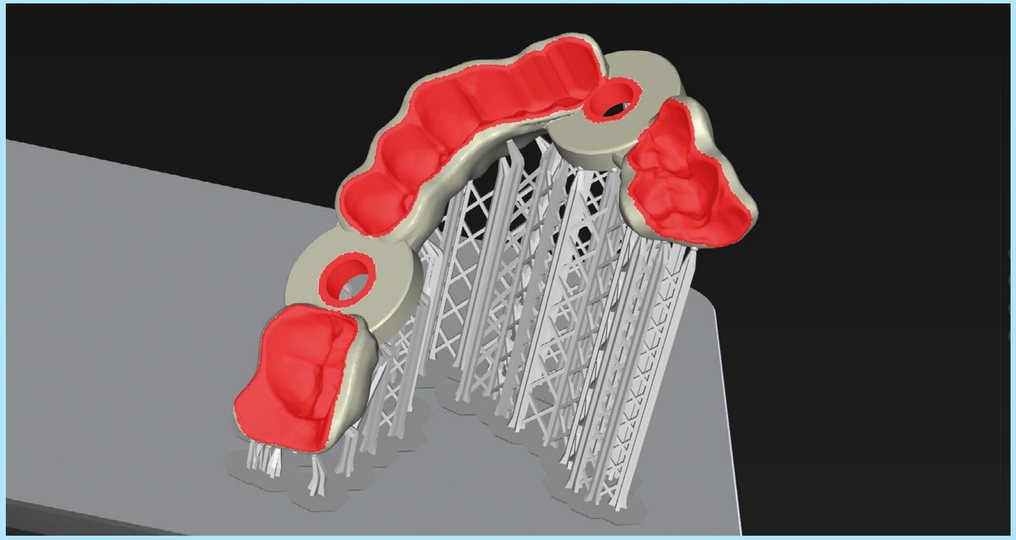
Christian Schuchmann (sponsored), Dental Technician and Managing Director Dental-Labor Teuber, Darmstadt, Germany

Dental Intelligence from CAD to CAM

- Object data designed with CEREC or inLab CAD Software are seamlessly transmitted to the inLab CAM Software, without the need for further manual steps
- The CAM software automatically suggests the Primeprint validated print material for each print object
- The CAM software automatically incorporates the requirements regarding alignment, support, and post-processing for each print object



In addition to purely geometrical generated design data, CEREC and inLab CAD Software contain additional specific dental information regarding application aspects, such as functional areas and important geometries, which require special consideration during the 3D printing process. For 3D prints with Primeprint Solution, the CAM software algorithm detects and applies this specific dental information to optimize the print job.

An example

CAM software functions

- Manufacturing on DS Core
- "Fast Forward" production
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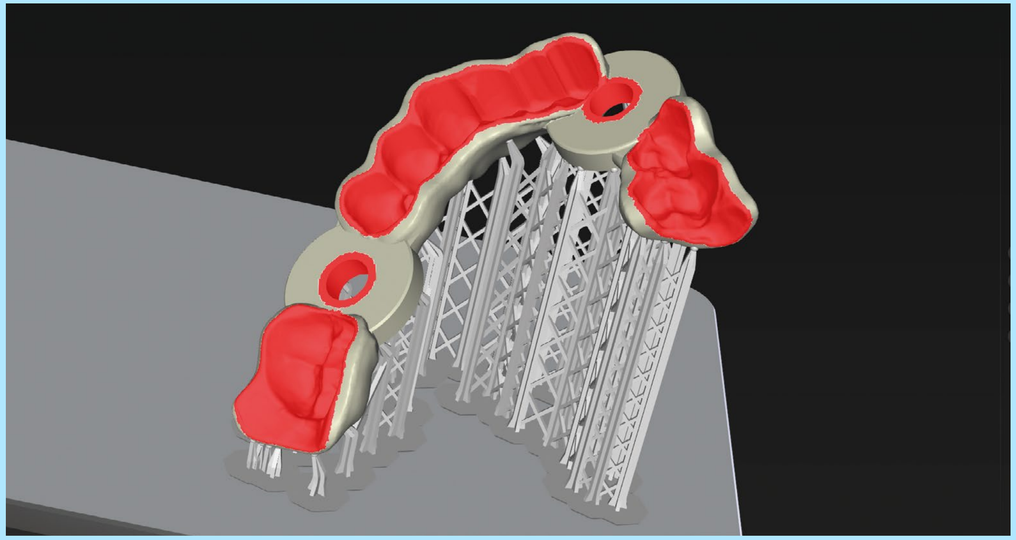

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A surgical guide has two particularly sensitive aspects: The guide sleeve must fit exactly into the hole, and there must be an exact fit in areas with remaining dentition. The CAM software automatically takes these requirements into consideration for 3D prints with Primeprint Solution.

CAM software functions

- Manufacturing on DS Core
- "Fast Forward" production
- Dental Intelligence from CAD to CAM
- Object positioning
- Preparation of object and fabrication structures
- Analysis tools

Click on a topic to learn more

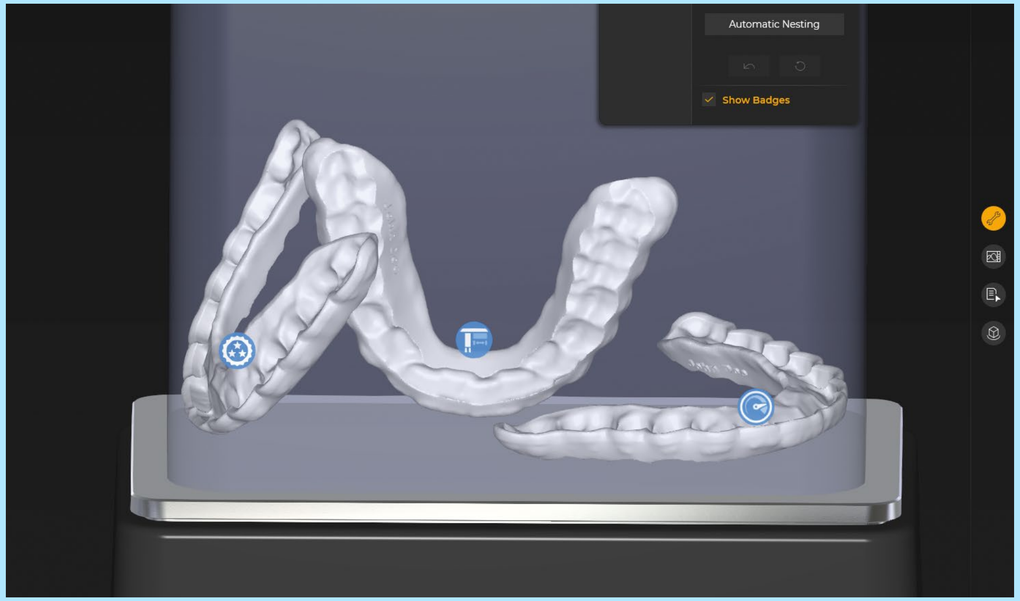
Learn more

Christian Schuchmann (sponsored), Dental Technician and Managing Director Dental-Labor Teuber, Darmstadt, Germany

Object positioning

The software automatically sets the print object on the building platform based on the selected orientation strategy. Manual processing is possible, but not needed in most cases.

In addition, the print object can be individually positioned on the building platform and freely moved horizontally and vertically as well as rotated 3-dimensionally.



Automatic orientation strategies

Click on the icons to learn more

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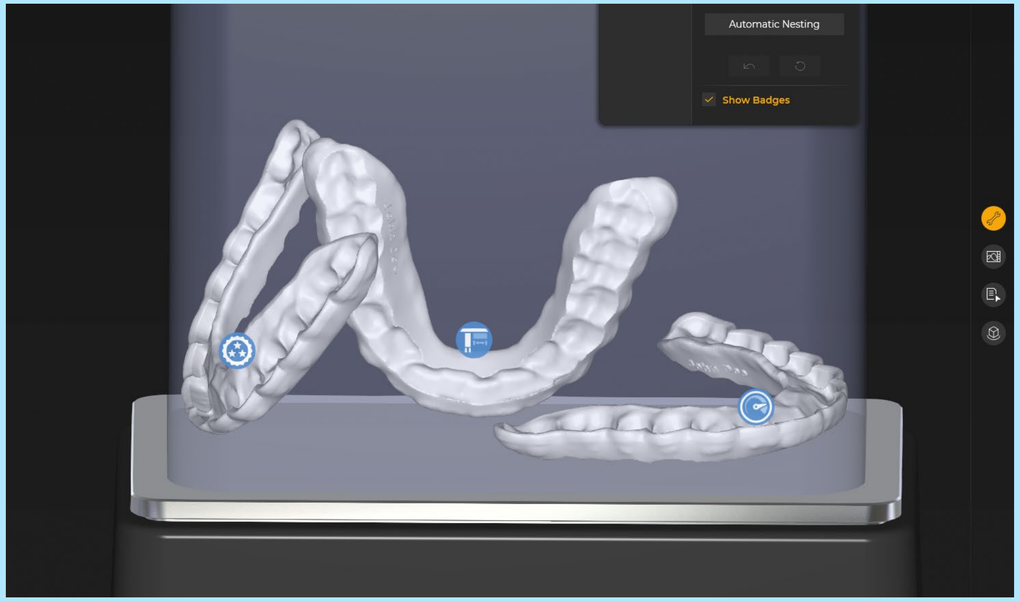

Automatic orientation strategies

Click on the icons to learn more

The specified surface attributes and the qualities of high level of printability and washability determine optimized quality orientation.

X

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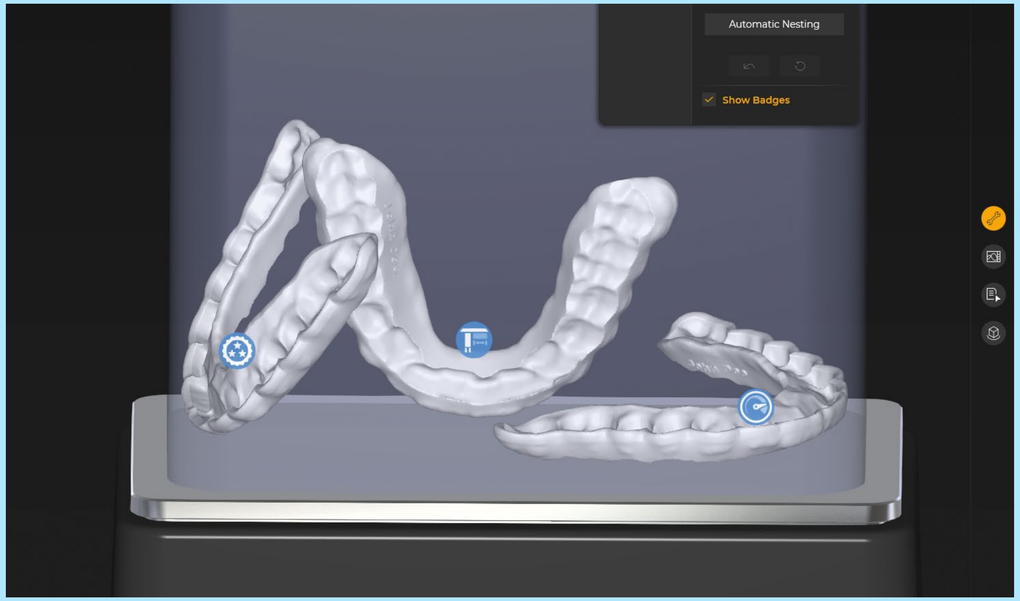

Automatic orientation strategies

Click on the icons to learn more

The base space optimization supports efficient use of the building platform space.

X

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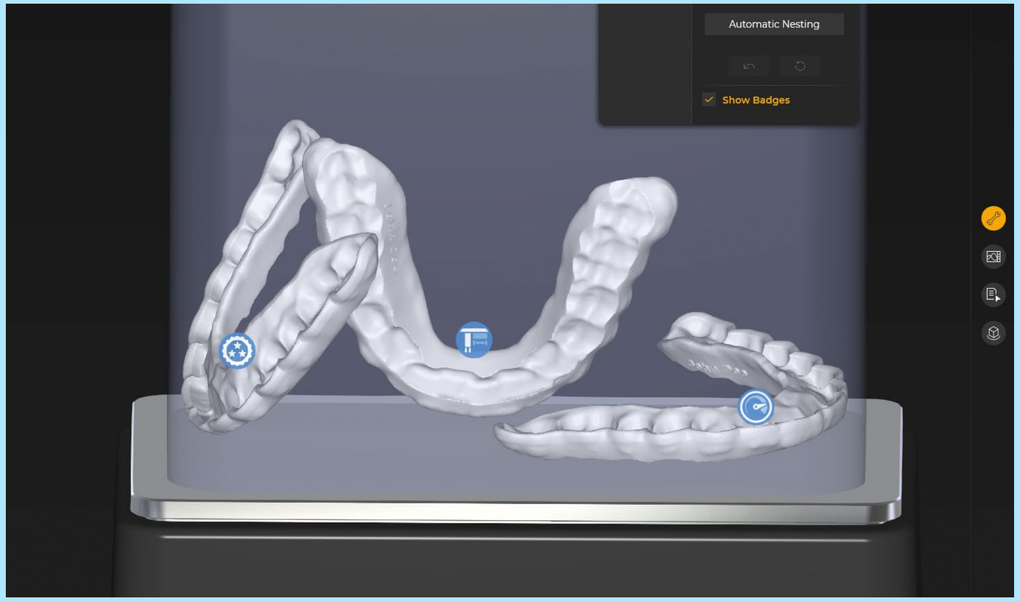

Automatic orientation strategies

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The height-optimized orientation shortens printing time by positioning the print objects with less height.

X

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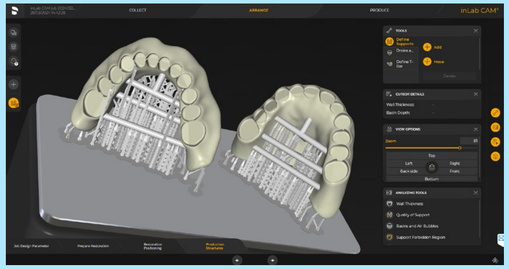
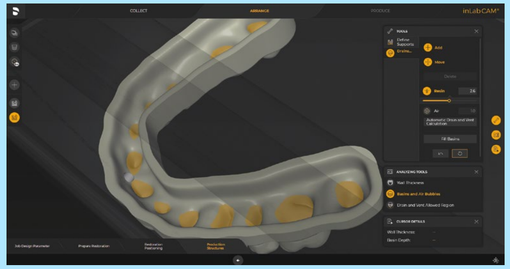
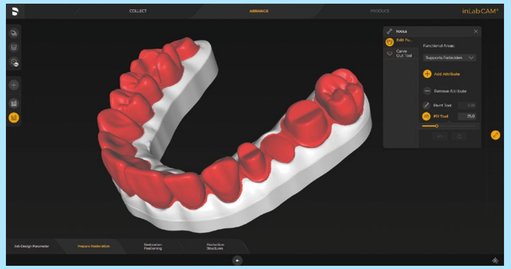
Preparation of object and fabrication structures





Support structures as well as drainage canals and vents are automatically placed by the software but can also be added, removed, and repositioned manually.



Customized adjustments of functional areas during the preparation of STL design data are especially important in order to create an optimal 3D print. For example:

- Targeted addition or removal of drainage canals and vents.
- Marking areas that may not be used for support structures.
- Hollowing solid models.

CAM software functions

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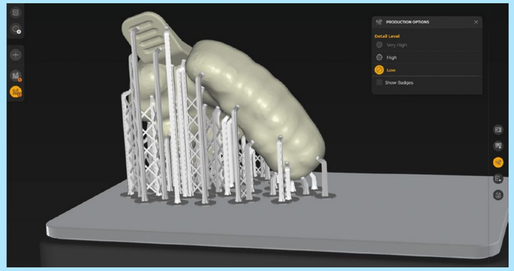
Analysis tools

For quality enhancement, the software indicates compliance or noncompliance with manufacturer-specified wall strength – a special advantage of the validation process that was performed for each Primeprint material. As such, additional corrections can be made, for example in the case file when cases of noncompliance are detected.

A color-coded system interactively visualizes the support quality.

The software indicates where air may potentially get trapped during the wash process later on or where puddling of resin may occur, which might not be cleaned up. In this case, drainage canals can be positioned virtually, based on the planned print placement, directly in the CAM software without the need to go back to the design phase.



Depending on the application and its desired surface quality, different thicknesses can be defined with the appropriate detail level, thereby optimizing print times.

Process documentation

Click on the arrow to learn more

CAM software functions

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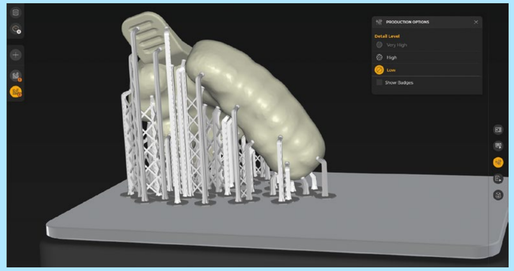


Dentsply Sirona

Job Information

Date Printed:	14.03.2022
Date Postprocessed:	14.03.2022
inLab CAM SW Version:	22.1.0.0
Detail Setting:	Normal
Resolution:	70 µm
CAM SW Warnings:	Yes

Material Information

Manufacturer:	Dentsply Sirona
Material Name:	Primeprint Tray
Material Color:	
Amount of Resin:	39 ml
Material LOT No.:	000000250201
Material Expiration Date:	29.02.2024

Material Unit Information

Material Unit Name:	288
Foil Status:	98 %

Primeprint PPU Information

PPU Serial No.:	800201
PPU Firmware Version:	0.9.25-V122021
UV-light Calibration Date:	02.08.2021
Start Conditions:	
Ambient Temperature:	32 °C
Ambient Air Pressure:	1018 mBar
Relative Humidity:	17 %
Fluid-fitness Pre-wash:	47 %
Fluid-fitness Final-wash:	99 %
Status UV-light Source:	96 %

A quality process protocol documents the manufacturing process for each medical device produced with Primeprint Solution. In addition to the simplified distributor declaration of MDR conformity, it can be used as proof of compliance with the process specifications validated by the material manufacturer.

Primeprint – 3D Printer

Before starting the manufacturing step, the Primeprint Material Unit (or the Primeprint Material Unit Type S) and Primeprint Box together with the building platform are inserted into the 3D printer, then the print process can begin immediately. After completing the print, the 3D printer can immediately be prepared for the next print job. Simply change Primeprint Box and Material Unit.

Click on a image to learn more

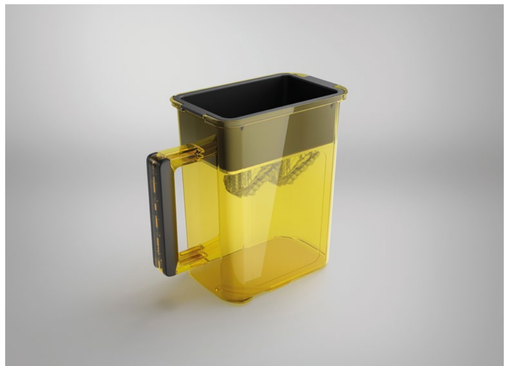
Learn more >

The product display provides supporting information about various functions and statuses:

- Availability of Primeprint Box, material unit and job data
- System settings and routine actions
- Start preheating
- Resin amount per job, remaining resin and color coding

Dr. Meena Barsoum (sponsored),
Dentist, Impressive Smiles,
Arlington Heights, IL, USA

Primeprint Solution has been a very important part of our practice. We deliver a large number of splints and occlusal guards each month, so being able to manufacture them in-house created a solution with a high level of cost-efficiency for our patients.
I can trust the post-processing unit to deliver clean and safe medical devices for my patients, without any risk of cross-contamination with other types of resins.



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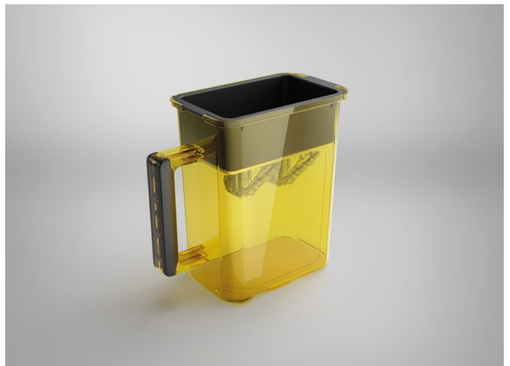
Click on the arrow to learn more

Dr. Meena Barsoum (sponsored), Dentist, Impressive Smiles, Arlington Heights, IL, USA

X

The Primeprint Material Unit and Material Unit Type S consist of the vat and the insertion slot for the material cartridge. Material Unit Type S enables transparent printing results and is used for printing of Primeprint Splint SF and Primeprint Splint ST. The cartridge clicks into both types of Material Units with a hand movement. Both the vat and the material cartridge are fitted with RFID tags. Once assembled, the software automatically pairs them and indentifies them as a unit.



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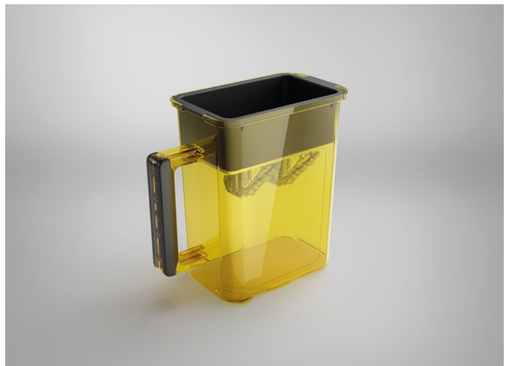
Dr. Meena Barsoum (sponsored), Zahnarzt, Impressive Smiles, Arlington Heights, IL, USA

X

The Primeprint Material Unit and Material Unit Type S are protected from UV light. This means that the remaining resin can stay in the vat until the next use. The closed cartridge prevents skin and device from being exposed to the liquid resin.



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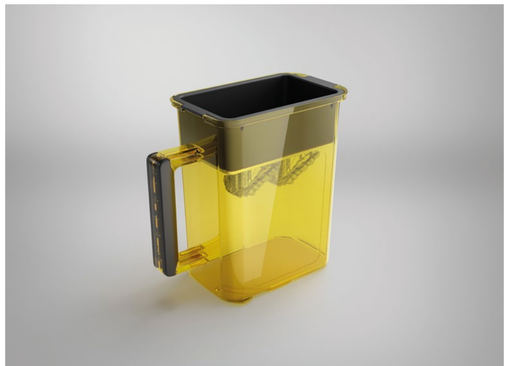
X

Depending on the type and number of objects intended for a print process, the Primeprint system dispenses the appropriate amount of print resin from the cartridge into the print vat and monitors its use. The software detects the fill level automatically and notifies the user when the material cartridge must be replaced.



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X

The Primeprint Box offers a high degree of cleanliness and safety throughout the print and post-processing steps, thus avoiding user and workspace contamination. The box holds the building platform and transports it with a high level of safety and protected from UV light throughout the complete manufacturing process.

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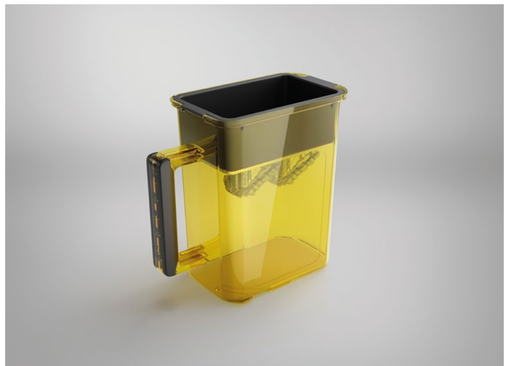


X

The objects are printed on the building platform, which is securely transported inside the Primeprint Box. The building platform is fitted with an RFID tag, which ensures safe identification of the print job.

Primeprint PPU – Post-Processing Unit

The PPU performs all post-processing steps required for the dental 3D print automatically and without manual interaction – with the option to delegate.

- Pre-washing: First wash cycle
- Final washing: Second wash cycle
- Drying
- Light-curing

Thus, any time-consuming manual post-processing is eliminated. All PPU process steps are protected from UV light and are controlled and monitored by the CAM software. A protocol can be created as PDF.

The process can be started directly via the Primeprint PPU 7” touch screen, and various information can be obtained, e.g.:

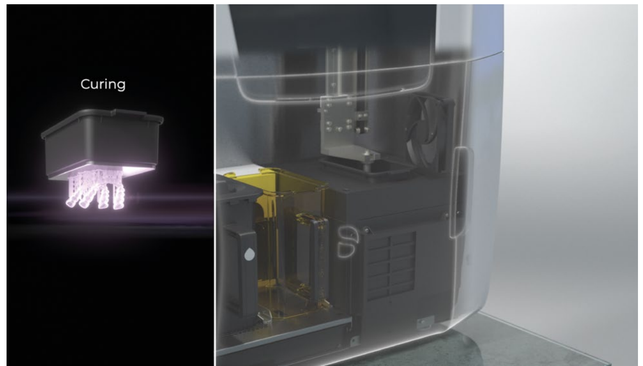
- Job availability and status
- Washing container availability and status
- System setting
- Start job

and more.

X

After the print is completed, only the Primeprint Box is removed from the printer and placed into the PPU. The Primeprint Box is sealed and protected from UV light; it does not require any additional contact precautions. Based on the RFID identifier, the individual job is detected and the fully automated post-processing begins with just one click on the screen. The rest is taken care of by the PPU.

All processes are individually developed for each material and are validated by the respective material manufacturer.



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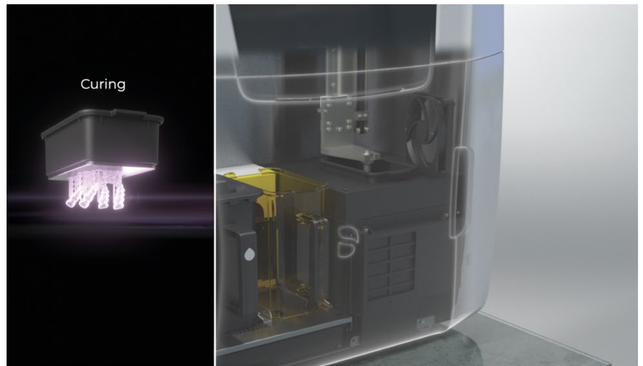
X

Consecutive pre- and final washing cycles use cleaning agent in the two integrated washing containers to remove liquid print resin residues from the printed objects. The Primeprint Washing Container concept allows each container to be filled with up to 2.5 l of isopropanol, thus enabling the individual storage of several containers.

The washing containers can easily be removed and reinserted and feature automatic fill level monitoring and leak protection. The assignment to pre- and final wash is done automatically. The software tracks the wash cycles of each container via their RFID tags, monitors the corresponding cleaning agent lifetime per washing container, and automatically alerts the user when cleaning agent must be exchanged.



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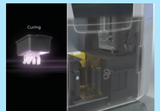
- Job availability and status
- Washing container availability and status
- System setting
- St

and

X

After the cleaning processes, the PPU dries the printed objects, quickly removing cleaning agent residues without interruption. Isopropanol fumes generated during this process are removed with the integrated activated carbon filter and fan within the PPU. No fumes are released into the environment, so no external ventilation is required.

The light-curing process is automatically initiated inside the integrated light-curing chamber of the PPU – a highly productive post-curing in a protective gas atmosphere and with active nitrogen management.



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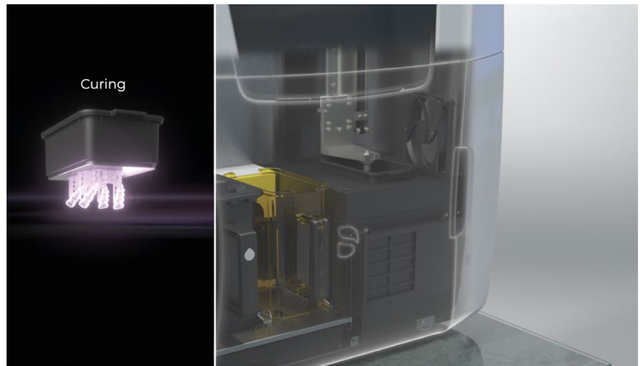

X

The completed printed objects are attached to the building platform with the support structures and can be removed quickly and easily with just a few moves.

The Primeprint Solution Platform Holder is specially designed to make removal even easier. It anchors the building platform in a non-slip manner and catches detached print parts.

Primeprint Solution – Material concept

Validated materials and RFID-supported, automated material management support quality, process, and documentation security. All material parameters were optimized to offer a high level of process safety for each application.

The Primeprint material concept offers user-friendly support with its color-coded material cartridge system. Each print material type is associated with a different color, which is mirrored in the CAM software for quick orientation, for correct material selection, and easily identifiable storage.

Primeprint Material Unit with inserted material cartridge

Materials

Primeprint Splint

Primeprint Splint SF

Primeprint Splint ST

Primeprint Model C

Primeprint Model

Primeprint Gingiva

Primeprint Model T

Primeprint Guide

Primeprint Temp

Primeprint Tray

Primeprint Splint

Application
Hard splints

Characteristics
- High mechanical flexural strength and stability
- High initial final hardness
- Biocompatible

Primeprint Cast

Lucitone Digital Print™

Lucitone Digital IPN™

Lucitone Digital Value™

Click on an image to learn more about application and properties of the materials

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Primeprint Splint SF

Application

Flexible splints
Repositioners
Mouthguards
Nightguards

Characteristics

- Minimum wall thickness: 1 mm
- Flexible and fracture-resistant
- High, tension-free wearing comfort
- Easy to polish
- MMA-, THF-MA- and TPO-free, tasteless
- Biocompatible
- Compatible with Material Unit Type S
- Usable for retainers

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Primeprint Splint ST

Application

Flexible splints
Repositioners
Mouthguards
Nightguards

Characteristics

- Minimum wall thickness: 0.8 mm
- Flexible and fracture-resistant
- High, tension-free wearing comfort
- Easy to polish
- MMA-, THF-MA- and TPO-free, tasteless
- Biocompatible
- Compatible with Material Unit Type S
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Primeprint Tray

Primeprint Model C

Application	Characteristics
Working models Situation models Thermoforming models	• Model manufacturing in <1 hour: enables the fastest manufacturing processes for models amongst the different Model materials for Primeprint • High temperature resistance • Bisphenol A-, MMA-, THF-MA, TPO-free

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Click on an image to learn more about application and properties of the materials

Primeprint Solution – Material concept

Validated materials and RFID-supported, automated material management support quality, process, and documentation security. All material parameters were optimized to offer a high level of process safety for each application.

The Primeprint material concept offers user-friendly support with its color-coded material cartridge system. Each print material type is associated with a different color, which is mirrored in the CAM software for quick orientation, for correct material selection, and easily identifiable storage.

Primeprint Material Unit with inserted material cartridge

Materials

Primeprint Splint

Primeprint Splint SF

Primeprint Splint ST

Primeprint Model C

Primeprint Model

Primeprint Gingiva

Primeprint Model T

Primeprint Guide

Primeprint Temp

Primeprint Tray

Primeprint Model

Application
Working models
Situation models
Control models

Characteristics
- High detail reproduction
- High surface hardness and dimensional stability
- Plaster-like appearance and haptic
- Very good construction precision

Primeprint Cast

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Lucitone Digital IPN™

Lucitone Digital Value™

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Primeprint Gingiva

Application
Gingiva mask

Characteristics
- Permanently soft and flexible
- Excellent combinable with working models made of Primeprint Model
- Only compatible with Washing Containers 2.0

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Application

Thermoforming models

Characteristics

- High temperature resistance to process-related temperature stress
- High edge strength

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Application
Surgical guide

Characteristics
- Very high mechanical stability & construction precision
- High printing speed
- Sterilizable
- Biocompatible

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Primeprint Temp

Application

Temporary anterior and posterior tooth restorations

Characteristics

- High breaking strength
- Short post-processing
- Low material consumption
- MMA- & THF-MA free

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Primeprint Tray

Application

Individual impression trays

Characteristics

- High dimensional stability, torsional rigidity
- High construction speed
- Compatible with all impression materials
- Biocompatible

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Primeprint Tray

Primeprint Cast

Application

Dental casting objects for precision casting

Characteristics

- Residue-free burning out
- High dimensional stability after printing
- Precise and distortion-free results, even for delicate constructions

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Application

Denture Base

Characteristics

- High impact denture base
- Available in 4 gingiva shades: Original, Light, Light Reddish Pink, Dark Reddish Pink

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Lucitone Digital IPN™

Application

Denture Teeth

Characteristics

- Excellent wear resistance
- 8 tooth shades: A1, A2, A3, A3.5, B1, B2, C1, BL3
- Highly esthetic

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Application

Try-in

Characteristics

- Try-in appliance used to evaluate fit, phonetics, function, and esthetics
- Availabe in Shade A1

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Primeprint Solution – In the practice

Primeprint Solution enables dentists to improve patient experience and offer additional procedures, thereby expanding their practice. It integrates easily into existing digital workflows and seamlessly into the entire DS Digital Universe for excellence in dental practices.

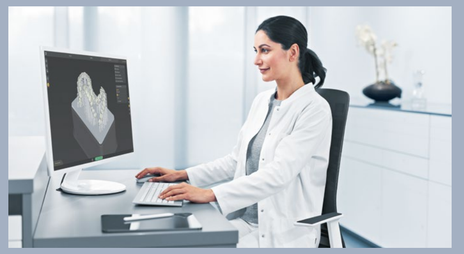
Learn more >

Click on the arrow to learn more

The Primeprint Solution workflow in the practice:

1 Intraoral scanning

2 Application design



3 Preparation of print job

4 3D printing and post-processing

Click here to go to the workflow of a surgical guide – just scan the QR code!

Dr. Verena Freier (sponsored), Dentist, Zahnmedizin Bad Soden, Germany

As a newcomer in dental 3D printing, I am not only interested in a broad range of indications, but also in easy handling and smooth integration into our practice processes. And this has been achieved particularly well with Primeprint Solution. In my opinion, the software is very user-friendly and can be integrated very well into my digital workflow. The printer and post-processing unit offer a high level of user-friendliness and clean 3D printing thanks to no contact with printing resins.All this means enormous time savings and safety for us in our day-to-day practice. And I can delegate the 3D printing tasks to my practice team with a good feeling.

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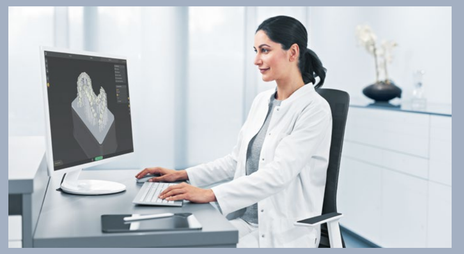
The Primeprint Solution workflow in the practice:

1 Intraoral scanning

Primescan enables high precision digital impressions with a patented scanning technology. Impression taking with Primescan is easy and intuitive. If the patient is scanned with Primescan 2, the intraoral scan is captured in DS Core, immediately freeing up the scanner for the next patient.[1]

2 Application design

The design can either be created with the CEREC or inLab CAD software. If the design is not intended to be made in-house, the dentist can use DS Core Create Design Service to get access to high-quality custom designs created by expert lab technicians. The designs can easily be requested via DS Core without having to operate a design software.



3 Preparation of print job

After automatic job preparation in the CAM software, the 3D printing process can begin immediately.

With Manufacturing on DS Core the print job can be started directly from DS Core.[1]

4 3D printing and post-processing

Primeprint Solution reduces handling times and manual work, allows for full delegation, and maximizes productivity. The use of regulated parameters help to ensure high quality of printed appliances for excellent treatment outcomes. The Primeprint Box enables convenient and easy material handling without direct contact with resins.

Primeprint printer and Primeprint PPU are two closed desktop units, which easily integrate into the dental practice. A particular advantage is that no fume hood is required.

5 Finalization

The platform holder offers convenient support for the fast removal of printed objects from the building platform, before the support structures are removed and the applications can be prepared for further employment.

Click here to go to the workflow of a surgical guide – just scan the QR code!

1 A paid DS Core subscription is mandatory.

2 A standard or advanced DS Core subscription is mandatory.

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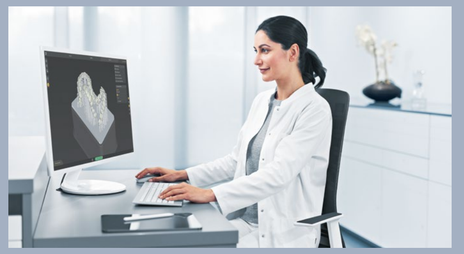

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Primeprint Solution – In the dental lab

Primeprint Solution expands the digital manufacturing options in the dental lab and can be integrated easily into existing digital workflow.

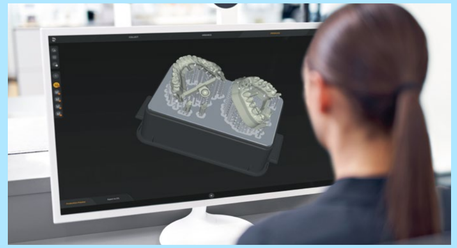
Learn more >

Click on the arrow to learn more

The Primeprint Solution workflow in the dental lab:

1 Digital design

In the dental laboratory, the restoration design is created based on intraoral or extraoral scan data and carried out using the dental laboratory's CAD software, e.g. inLab Software, or software from another manufacturer[1]. inLab CAD Software automatically takes into account the design parameters for 3D printing with Primeprint.



2 Preparation of print job

Object and order data from the inLab CAD software are automatically applied from the inLab CAM Software, which eliminates the need to enter them again. Design data of other CAD software are imported into the open inLab CAM Software in STL format[1] and prepared for the print process with just a few clicks.

3 3D printing and post-processing

3D printing and post-processing with Primeprint Solution are easily and comfortably performed in the dental lab through a highly automated process.

4 Finalization

The Primeprint Solution Platform Holder supports quick removal of the printed objects from the building platform before support structures can be removed, and the application can be prepared for further processing.

Scan now:
Take a look at the workflow of a working model

1 All design files in *.stl file format are beyond the intended use of the respective Dentsply Sirona production system and potentially inadequate. Dentsply Sirona rejects liability for all possible risks to the user, third parties, and the production device itself with all associated components when processing designs based on *.stl file format.