Update-Description

inLab CAD & CAM SW 22.1.0

This document describes changes and improvements compared to previous version inLab CAD 22.0.1 & inLab CAM 22.0.0

Date: May 2022

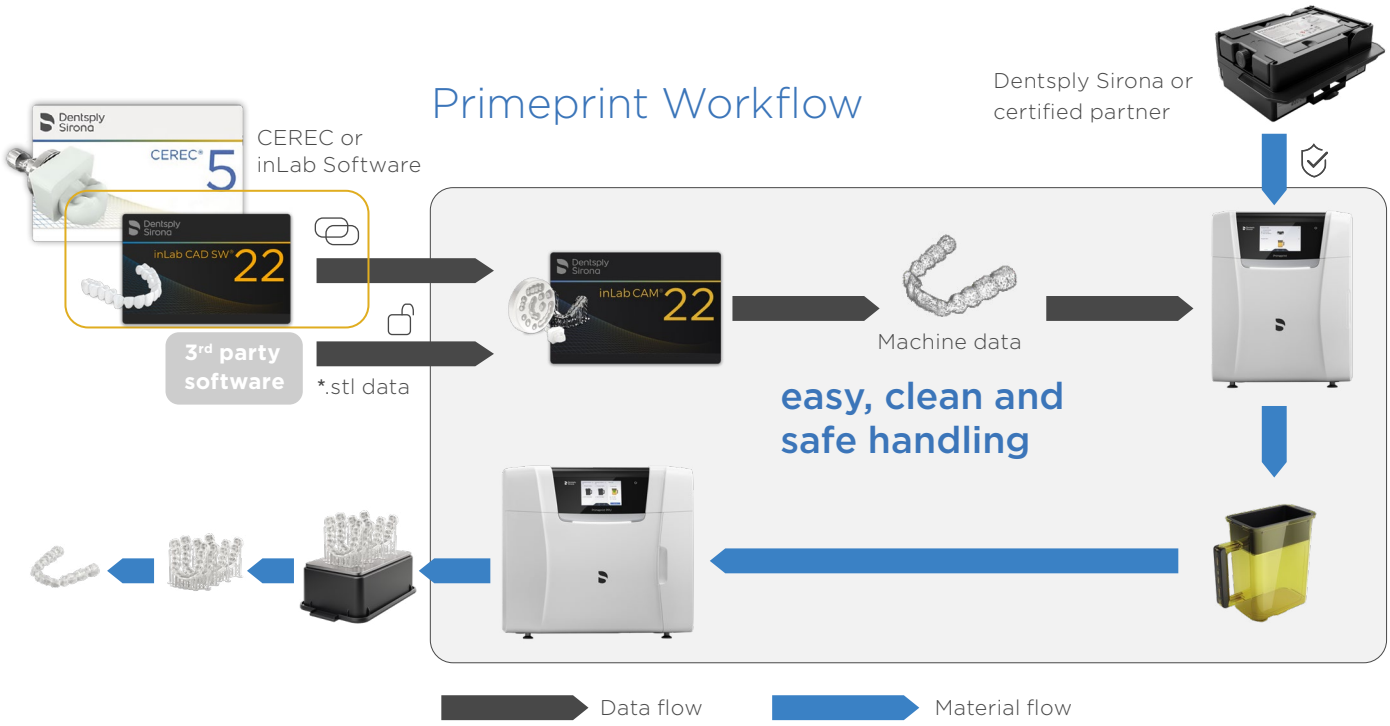
THE DENTAL SOLUTIONS COMPANY™

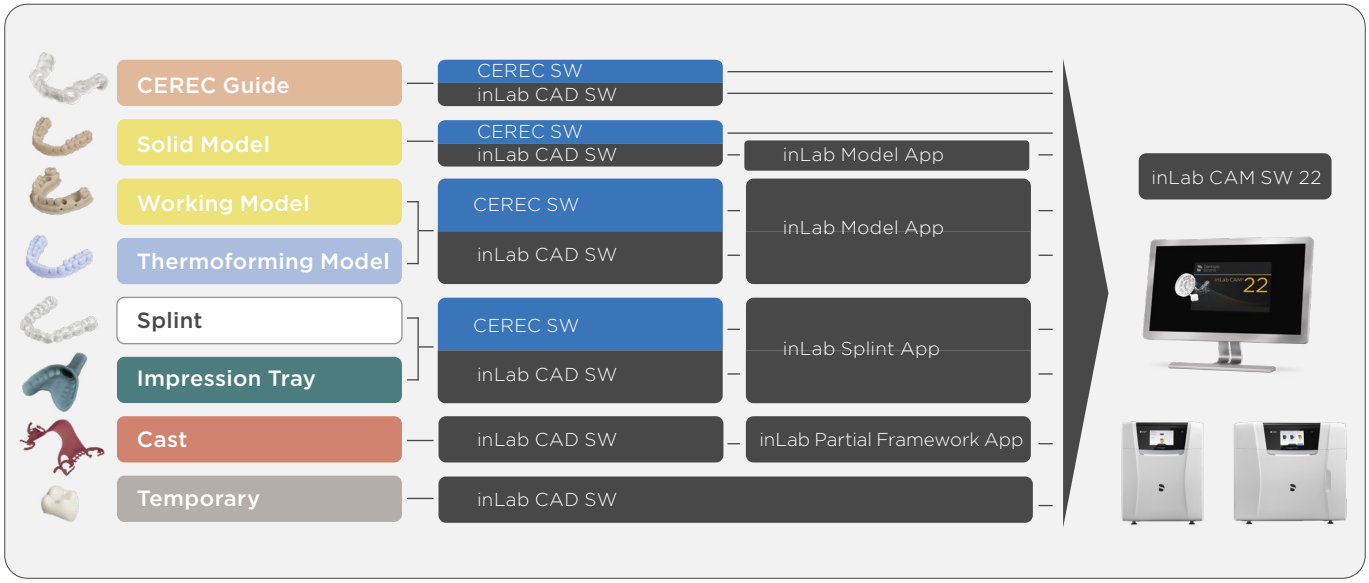
Dentsply Sirona

General – inLab SW 22.1

The inLab CAD/CAM SW 22.1.0 is all about the integration and support of Primeprint Solution.

Primeprint Solution is a simplified and highly automated end-to-end 3D printing solution, from dental intelligent software and hardware to 3D printing and automated post-processing – for the production of medical applications. It reduces handling times and manual work, allows for full delegation and maximizes productivity. The use of regulated parameters ensures a high quality of printed appliances for excellent treatment outcomes. Primeprint Solution enables you to improve the patient experience and to offer additional procedures, thereby expanding your practice or lab.





DS Primeprint and PPU

Installation requirements

Recommended: inLab PC V6.0.x Minimum Requirement: inLab PC V5.0.1.

Part	Recommended requirements
Operating system	Windows 10 (64-Bit)
RAM	32 GB
Graphics card	AMD Pulse Radeon RX 570 or Nvidia GeForce RTX2060 or similar
Hard disk-SSHD	2 TB
Processor	Intel Core i7-9700 or better
Monitor resolution	1920x1080
3D mouse	3Dconnexion SpaceMouse Compact

inLab CAD SW 22.1.0
Administration phase

New materials

The following additional materials can be selected for restorations in this version. Not all materials are available, depending on the machine type and country:

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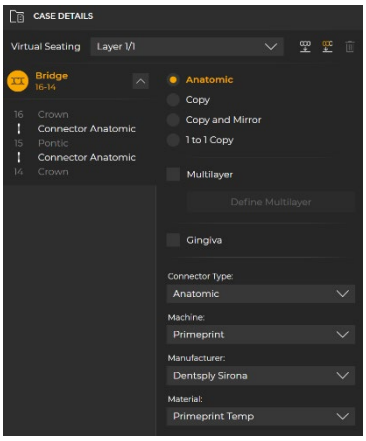
Primeprint Tray	Primeprint Splint
Primeprint Model	Primeprint Cast
Primeprint Model T	Primeprint Temp
Primeprint Guide	

Printer indications in the administration phase

New machine: Primeprint

inLab CAD SW 22.1 supports the following indications for printing with Primeprint:

- Design with inLab CAD: Temporary crowns & bridges, CEREC Guide
- Design with inLab App: Splints, custom trays, solid models, working model, thermoforming model, partial frameworks



New machine: Generic 3D Printer

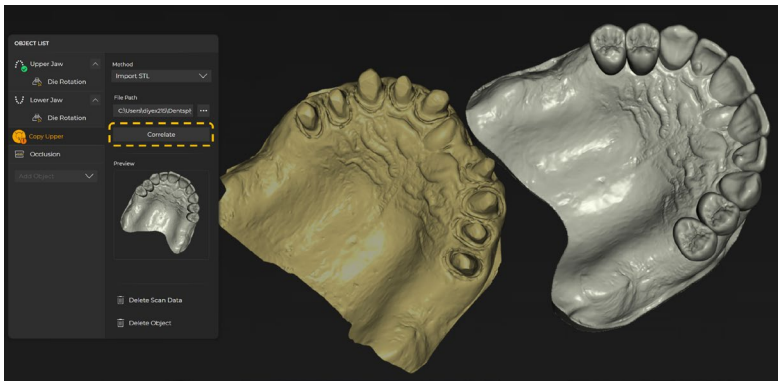
- One “Generic Printer 3D Printer” is available initially when software is installed
- “Instrument Geometry” is automatically set to 0 µm
- More generic printers can be added on device settings and adjusted on the machine administration

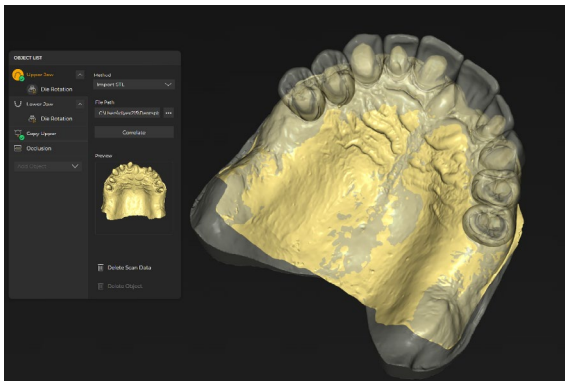
Scan phase

Correlate function for STL import

When importing STL files they remain in their original coordinate system. In case they are not oriented correctly, the “Correlate” functionality can automatically stitch the orientation of the sub-object (Copy Upper, Misc Upper, Die Rotation, Gingiva Mask) to the main object (upper or lower jaw).

Furthermore the “Method” in the object list is automatically set to “Import STL” if no inEos X5 scanner is attached to the workstation. Live view gets disabled to have more space for the 3D models.

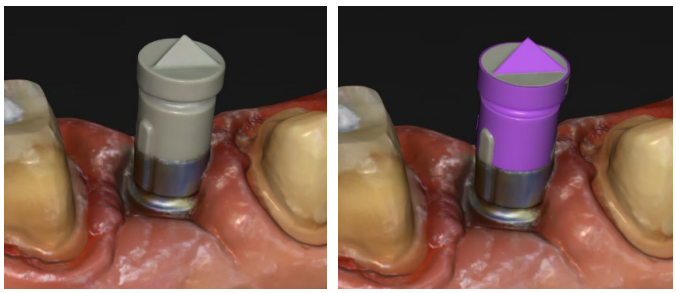




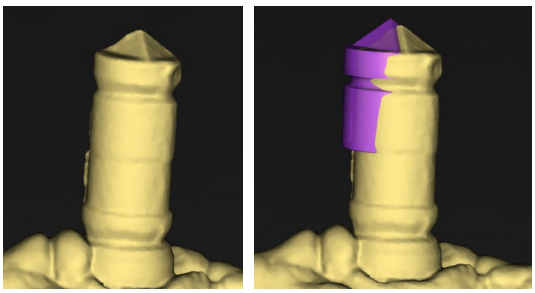
Model phase

Scanbody visualization check

With this new visualization, it is possible to check as early as possible in the inLab CAD software whether the scanbody is correctly scanned and recognized by the algorithm or not. So, the user would have a checkpoint in the model phase with the visualization that can safeguard and indicate that a new scan would be needed.



Ideal scanbody scan with correct detection



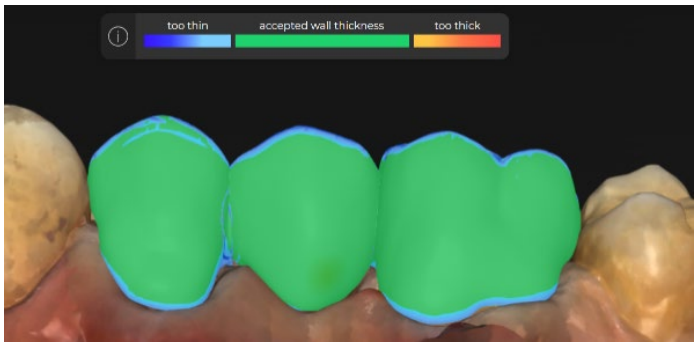
Bad scanbody scan with wrong detection

Design phase

“Built-in Dental Intelligence” for printing indications

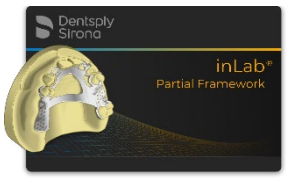
Restorations designed for 3D printing with Primeprint can be checked for correct wall thickness in the “Finalize” step of the design phase using the “Show wall thickness” button.

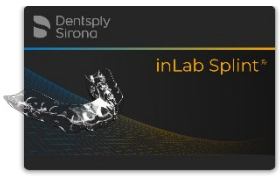
- Display wall thickness to secure printing safe designs
- Dental intelligence identifies sensitive and functional areas of the object
- Provide data for positioning and supports to inLab CAM software



“Show wall thickness” feature

inLab Apps 22.0.x
General

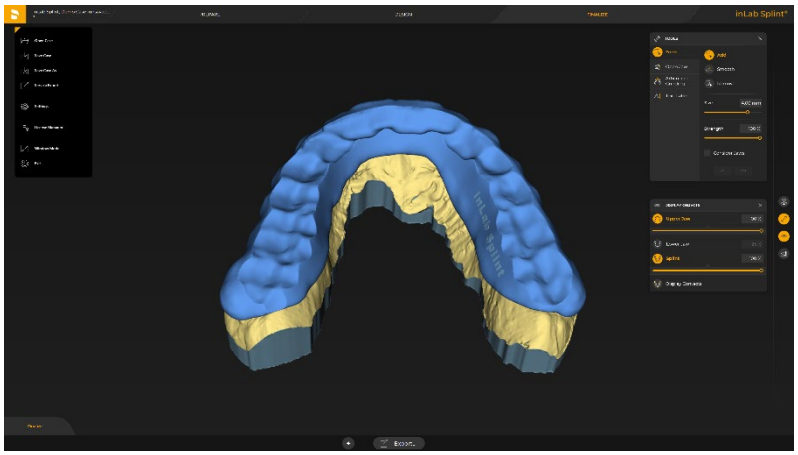




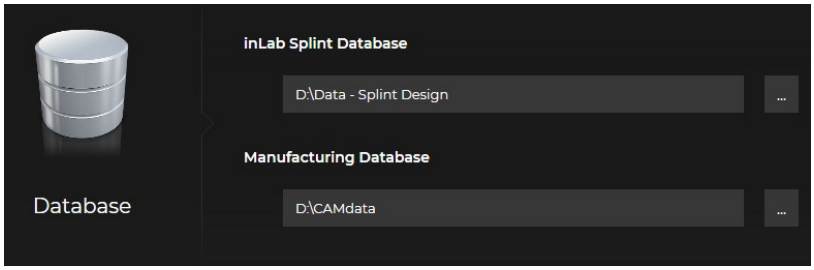
inLab Apps 22.0.x (Model, Splint, Partial Framework) will run together with inLab CAD SW 22.1.x.

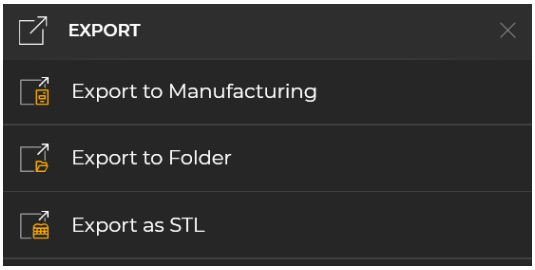
inLab Apps 22.0.x (Model, Splint) will recently also run together with CEREC SW 5.2.3 if a Primeprint device is connected.

For the inLab Apps (Splint, Model, Partial Framework) a facelift of the software graphical user interface has been made to create a seamless transition to other DS software products as well as a modern look and feel.



For the inLab Apps it is now also possible to use the database settings which are known from inLab CAD SW. This function allows the user to select individual paths for saving design data and exporting it. The designed object can be seamlessly exported to the inLab CAM SW 22.1 via “Export to Manufacturing” function. The prerequisite for this is that the design software accesses the same data folder as the manufacturing software.





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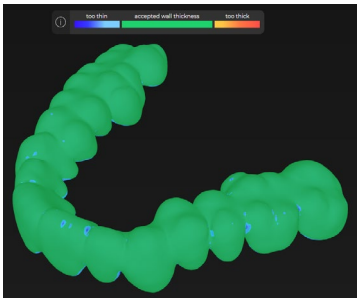
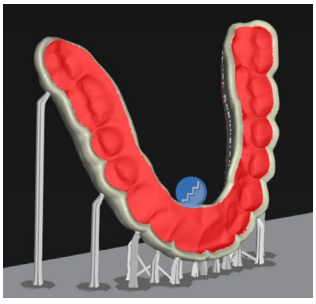


“Show wall thickness” feature

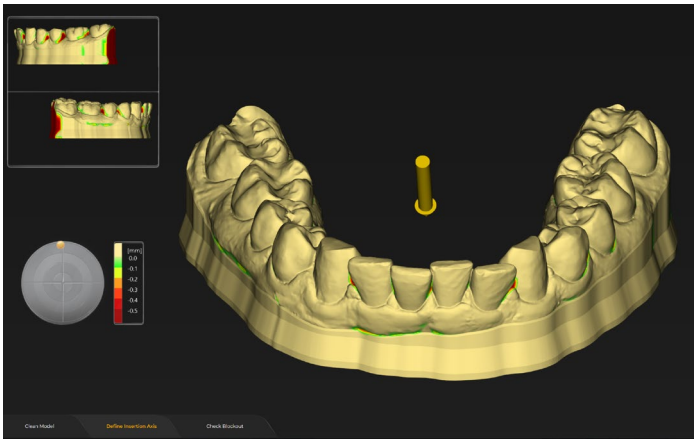


“Sensitive and functional areas”

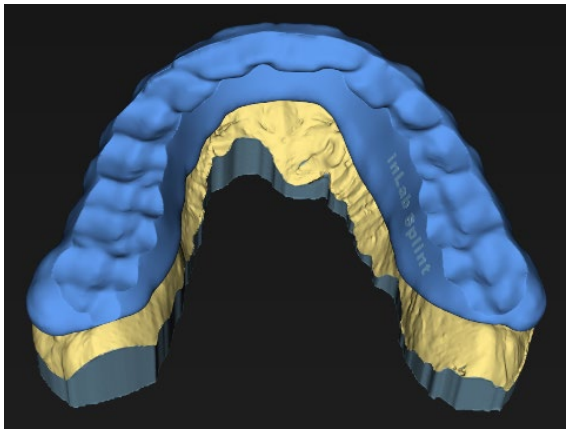
inLab Model

New stump geometry available: Shape of tooth root.
This stump shape has a snap-in action with a click effect and is thus, seated wobble-free in the model.

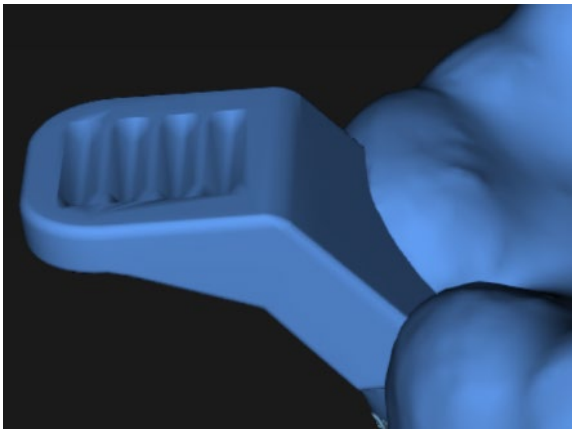
Thermoforming models: It is now possible to design specially blocked-out models that can be used for the thermoforming process. If construction type “Thermoforming” is chosen additional steps such as “Define Insertion Axis” and “Check Blockout” will appear in the step menu. In the design phase additional tools like “form”, “reservoir” or “parting line” are available to individually design the model for the thermoforming process.



inLab Splint



Splint: Improved “Articulator Grinding” feature, which achieves a smooth grinding of the contacts of the antagonist based on the values set in the virtual articulator.



Custom Tray: New geometry of tray handle, which allows better use of the impression tray, as the fingers have more grip when placing the tray in the patient jaw

Quality improvement and stability

Dentsply Sirona continuously improves the quality of its products. As part of this release, several improvements have been made and known software bugs have been fixed. We always recommend using the latest software version.

Primeprint Solution – CAM Software

The inLab CAM Software was specifically developed for use with Dentsply Sirona manufacturing units. With a few automated steps, it is possible to 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.

The Dental Intelligence concept of the Primeprint Solution is particularly reflected in the software.

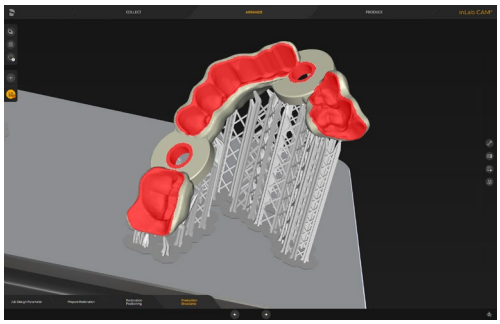
- Object data designed with CEREC and inLab CAD Software are seamlessly transmitted to the CAM Software, without the need for further manual steps. Alternaltively a 3rd party STL file can be uploaded into the CAM Software or the user can order the CAM file via our Design Service: DS Core Create
- The 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.

Fast Forward Production

The print process can be immediately initiated, 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.

Dental Intelligence from CAD to CAM

In addition to purely geometrical generated design data, CEREC or inLab CAD Software contains 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.



Object positioning

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

Automatic orientation strategies:

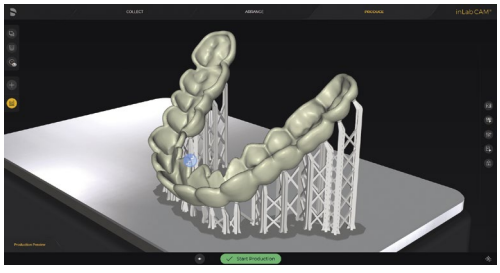
- Optimized quality orientation is based on the given surface attributes and the concepts of best printability and washability.
- The footprint optimization supports optimal use of the building platform space.
- The height-optimized orientation positions the print objects with less height to shorten the print time.

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.

To create an optimal 3D print, customized adjustments of functional areas are especially important during the preparation of STL design data, for example:

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



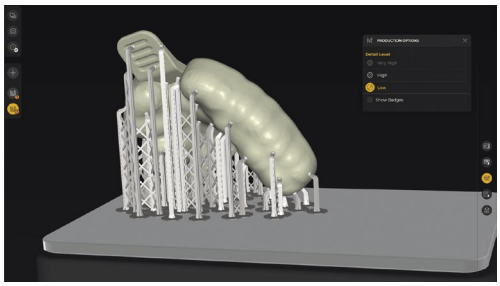
Analysis Tools

For quality enhancement, the software indicates compliance or noncompliance with manufacturerspecified 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.

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.

A color-coded system interactively visualizes the support quality.

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



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.

CAM Service

inLab CAM Software ≥22.0 uses the CAM Service for storage of manufacturing related data such as imported designs, production jobs, blanks, and status of RFID tagged process components of Primeprint Solution. CAM Service provides the data within the local network to all CAM software clients and Primeprint automatically.

CAM Service is a mandatory component for operating the inLab CAM SW ≥22.0 and Primeprint (from inLab CAM SW 22.1). inLab CAM SW ≥22.0 comes with a new installation routine “inLabCamWizard.exe”, which ensures that the installation of CAM Service and inLab CAM SW is performed properly.

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