Instructions for use

Dental Teacher

Always be on the safe side.

KaVo. Dental Excellence.

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Table of contents

1 User instructions

1.1 User guide

Requirement
Read these instructions prior to first use to avoid misuse and prevent damage.

1.1.1 Abbreviations

Abbre-viation	Explanation
IfU	Instructions for use
CI	Care instructions
AI	Assembly instructions
TI	Technician's instructions
SC	Safety checks
IEC	International Electrotechnical Commission
RI	Repair instructions
RK	Retrofitting kit
AS	Assembly set
EP	Enclosed parts
EMC	Electromagnetic compatibility
PI	Processing instructions

1.1.2 Symbols

	See the Safety/Warning Symbols section
	Important information for users and technicians
	CE mark according to EC Directive 93/42 for medical devices
▶	Action required

1.2 Target group

This product is for assisting education and training at dental universities, institutions of continuing education, and for continuing education for dentists at hospitals in and universities.

1.3 Service

Service hotline:
+49 7351 56-2700
Service.Multimedia@kavo.com
Please refer to the serial number of the product in all inquiries!
For further information, please visit: www.kavo.com

1.3.1 Technical customer service

The technical support for KaVo products is primarily offered by the dental supplier.
KaVo provides ongoing training and special courses for dealer technicians.
To guarantee constant readiness for use and maintenance of value of the KaVO products, the products must be regularly serviced.

2 Safety

2.1 Description of safety instructions

2.1.1 Warning symbol

	Warning symbol

2.1.2 Structure

⚠ DANGER

The introduction describes the type and source of the hazard.
This section describes potential consequences of non-compliance.
- The optional step includes necessary measures for hazard prevention.

2.1.3 Description of hazard levels

Safety instructions distinguishing between three hazard levels are used in this document to prevent personal and property damage.

⚠ CAUTION

CAUTION
indicates a hazardous situation that can cause damage to property or mild to moderate injuries.

⚠ WARNING

WARNING
indicates a hazardous situation that can lead to serious or fatal injury.

⚠ DANGER

DANGER
indicates a maximal hazard due to a situation that can directly cause death or fatal injury.

2.2 General Safety Instructions

The following safety instructions must be observed during the installation, startup, and use of the scanner: The instrument is intended for use in dry and closed rooms only.
The instrument has been developed and manufactured in accordance with the current safety standards exercising the utmost care. In spite of these measures, it cannot be excluded that a hazard could arise with regard to electric shock, overheating or fire as the result of a technical defect in individual components.
Therefore switch off the instrument when you are not using it or if the instrument is unattended for extended periods of time, for example overnight. This will also benefit the environment as it saves electrical energy.
The instrument may only be operated on a stable base (table, workbench, etc.) whose bearing strength has been measured to be at least twice the weight of the scanner as defined in the Technical Specification.

The base must be securely connected to a building wall or be equipped with a laterally braced bottom frame that is able to absorb any oscillation arising during the operation of the scanner.
Therefore, aside from the bearing strength, the stability of the base is also crucial for safe operation of the scanner.
The printed instructions for transportation and storage must be observed while lifting and transporting the scanner.
No objects may be placed on the scanner as they could drop due to the surface or the oscillation arising during operation of the scanner.
The instrument must be operated by sufficiently trained staff only, who are in possession of sufficient knowledge concerning the intended use of the instrument and the safety instructions provided in the present document.
The scanner includes a mobile unit consisting of two electrically driven rotation axes that serve to position the object during the scanning process. To enable the object to be clamped in defined position and for a speedier workflow during the scanning process, the motion axes are kept in position by electrical means even when the door is open. An electronic protection mechanism prevents inadvertent start-up and continued operation of the motors when the door is opened. Since, theoretically, the protection mechanism might fail, there is a residual danger which you can counteract by observing the following **Safeguards** :
Open the front door during a scanning process only if you are prompted to do so on the screen or if the end of the scanning process is displayed.
If you notice any unusual behaviour of the scanner, e.g. uncontrolled or permanent rotation of one or more rotation axes, switch off the scanner by the main switch before you open the door. If the anomalous behaviour persists after you switching on the scanner again and re-starting the software, the scanner must not be used any longer. The instrument must be labelled as defective and protected from being started-up again until the defect has been remedied.
If one or more motion axes move despite the door being open, do not reach into the interior of the scanner. **Switch the scanner off instantaneously.** The unit must not be used any longer and must be labelled as defective and protected from being started-up again until the defect has been remedied. While a scan is ongoing, never reach below the region between rocker and housing identified by the warning signs. This applies also if the rocker has been pivoted up and backwards.
It is essential to disconnect the instrument from the mains switch before objects, which have fallen into the scanner, are retrieved or the inside of the scanner is cleaned.
If you detect any damage or a functional defect on the scanner, the instrument must be labelled as defective and further operation must be prevented until the instrument has been repaired.

⚠ CAUTION

Risk of injury and material damage.

KaVo accepts no liability in case of improper use of the instrument.

- Do not place any other objects in the scanner.
- During manual and automatic operation, make sure that no fluttering objects get into the opening of the scanner.
- While you are using the unit, make sure that no body parts can be trapped in the door / mechanical system.

⚠ CAUTION

Premature wear and malfunctions from improper servicing and care.

Reduced product life.

- Perform regular proper care and maintenance!

3 Technical specification

Type	Activity855
Axes	2
Dimensions	440 x 500 x 450 mm (W x H x D)
Weight	approx. 35 kg
Supply voltage	100-240 V AC, 50-60 Hz
Power consumption	100 W
Class of protection	IP11
Admissible temperature range	18-30 °C
Measurable objects	Tooth models made of plaster
Minimal clamping range of the removable object holder	40 mm
Maximal clamping range of the removable object holder	70 mm
Duration of measurements on	single stump: < 55 sec.
	3-unit bridge: < 90 sec.
	entire jaw: < 90 sec.
	Each depending on the selected software settings.
Resolution	Basic resolution of the 3D measuring head: 62.5 µm
Measuring field	80 x 60 x 85 mm (x,y,z)
Accuracy	+/-10 µm standard deviation measured on sample body, determined using at least 50 measuring points and 10 repetitions each
Output data format	STL
Interfaces	USB
Recommended minimal system requirements	Operating system Windows 7 Ultimate 64® Bit, Intel Core 2 Quad CPU Q 9550 2.83 GHz or higher, RAM 4 GB, high performance 3D-graphics card with at least 1 GB RAM, e.g. GeForce, 320 GB hard disk

4 Set-up

4.1 Selection of the site for set-up

Select a suitable site for set-up before installing the scanner.
The selected set-up site should be a suitable solid base (bench, tabletop, etc.). If the PC required for operation of the scanner is to be placed underneath the work table, a footprint of at least 1.1 m x 0.75 m (width in the front x depth) needs to be available. If your PC is also to be placed on the table, this area must be increased by the dimensions of the PC.
The selected work place should not be facing windows or powerful artificial lamps as excessive ambient lighting can cause undesirable reflections on the screen and, in extreme cases, affect the results of the optical scanner.

4.2 Unpacking

- Check the outer packaging for visible damage as soon as you receive the shipment. If you detect any damage on the packaging, notify the shipping agent and your specialist dealer without delay.
- The instrument is delivered in a specially designed carton on a wooden pallet or in an overseas wooden crate. After removing the straps, open the folded cover of the carton. Inside you will find a foam part that protects the scanner underneath from damage during transport.
- Pull the foam part upwards out of the carton.
  Then you can then lift-off the entire carton.

⚠ CAUTION

Danger of injury from heavy parts.

The weight of the scanner is approx. 35 kg.

- It is essential that you observe the following instructions in order to lift the scanner out of its packaging and place it in its operating location in appropriate manner.

- Do not carry the scanner by yourself, but have at least one other person assist you.
- Get the destined workplace ready such that the scanner can be removed from the packaging and then placed in its place of operation at once.
- Move the scanner on the pallet as closely as possible to the site of set-up before you remove the scanner from the packaging.

Note

The accessories of the scanner are enclosed at the bottom of the packaging. Check the consignment for completeness.

5 Basic information about the instrument

5.1 Mode of operation of the KaVo Dental Teacher Scanner

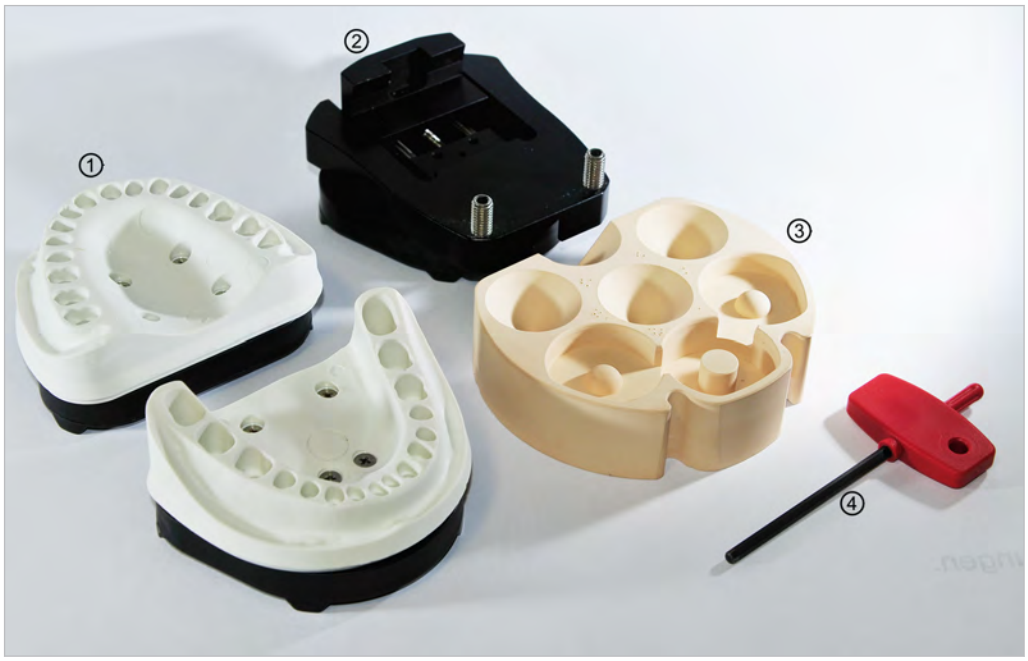
The optical scanner is used for three-dimensional measurements on study models and jaw models for orthodontic and prosthetic applications.
The most important components of the scanner are the **3D sensor** and the **Positioning unit** including object support.
The 3D sensor consists of a **Camera** and a **Projector**. The projector is used to project a pattern of light at an oblique angle of incidence onto the object to be measured while observing the object with the camera.
Since the camera cannot detect the entire object during measurements on complex shapes, such as a jaw model, the object is recorded through a number of individual measurements made at different viewing angles.
Subsequently, these individual measurements are combined by the software into a full data set.
The positioning unit is used to position the object to be measured with respect to the 3D sensor such as to attain the requisite viewing angles.
For this purpose, it includes motor-driven axes that can rotate and tilt the model on the support with respect to the 3D sensor.
The scanning process is largely automated such that you need to perform only minimal operating steps.

5.2 Interior of the KaVo Dental Teacher Scanner

Positioning unit (in the interior space of the scanner):
The positioning unit includes the fixed base support on which the object to be measured is fixed, and a rotating and pivoting unit, each driven through electrical motors.
Rotating and pivoting unit/object support:
The rotating unit can be used to position the object to be measured in any rotational position with respect to the camera of the 3D sensor, which is situated above the object support, through an electrical motor.
The pivoting unit can be used to pivot the combined rotating unit and object support sideways and thus record lateral views of the object to be measured.
Interior space lighting:
The interior space lighting is switched on automatically as soon as the door is opened.
If the door stays open for more than 5 minutes, the lighting switches off automatically.
The interior space lighting is switched off automatically as soon as the door is closed.

5.3 Object support

Components of the object support
The scope of delivery of the object support of the KaVo Dental Teacher includes the following components:



①	KaVo model holder for the pin system of KaVo study models with reproducible model position. Recent Frasaco models featuring the KaVo pin system are compatible.	②	Universal model holder: Removable object support for Frasaco, Nissin, Columbia, Kilgore, etc. and non-articulated jaw models. The model is fastened on the object support using a clamping part. The clamping part is fastened or taken off with the Allen key ④.
③	Calibration block for axis and 3D calibration.	④	Allen key for clamping and/or removal of the plaster model on the model holder.

Use of the object support system:
The object support of the KaVo Dental Teacher consists primarily of a system base plate that is firmly mounted to the pivoting unit.

5.3.1 Affixing study models in the Dental Teacher Scanner

KaVo and Frasaco study models featuring the KaVo pin system

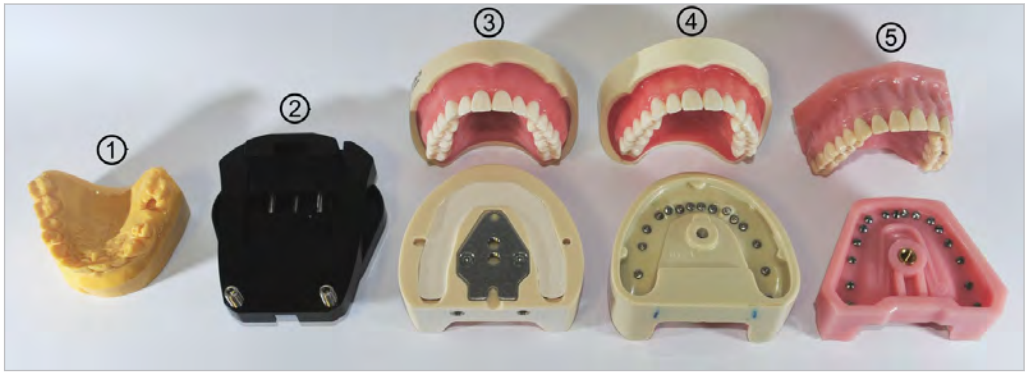
Included in the scope of delivery, the model adaptor features a splitcast system on its underside for correctly positioned re-mounting of study models in the scanner and the original model base of the KaVo study models on its top.
In Frasaco study models, the KaVo model base can be replaced by the Frasaco model base (mount with screw in the middle).

KaVo and Frasaco study models

① KaVo study models
② KaVo model adaptor
③ Frasaco study models for KaVo PIN system

Study models of other manufacturers

Study models, which are not equipped with the KaVo pin system, can be affixed with the universal model holder enclosed in the delivery.



Study models without KaVo PIN system

① Plaster model
② Universal model holder
③ Nissin/Kilgore
④ Columbia
⑤ Frasaco models

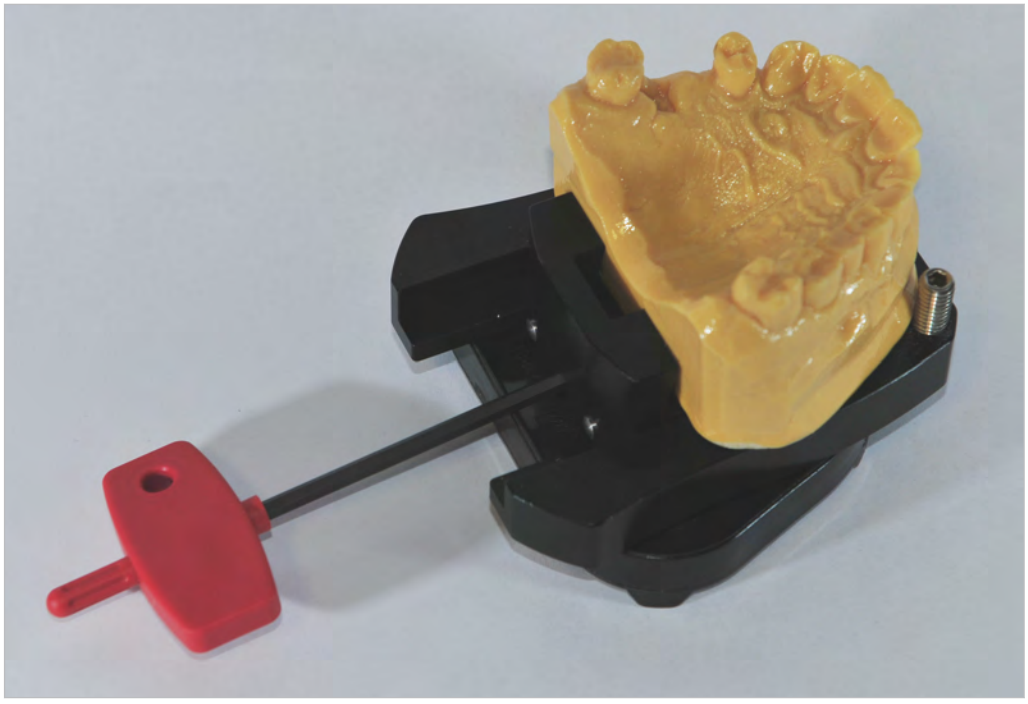
Note

In order to be able to carry out a validation of the preparation, the model base needs to remain in exactly the same position for creating the task and the scanning processes.

- Affix Columbia, Frasaco, Nissin/Kilgore study models with the Allen key.

Universal model holder with study model

- Affix plaster models with Allen key.



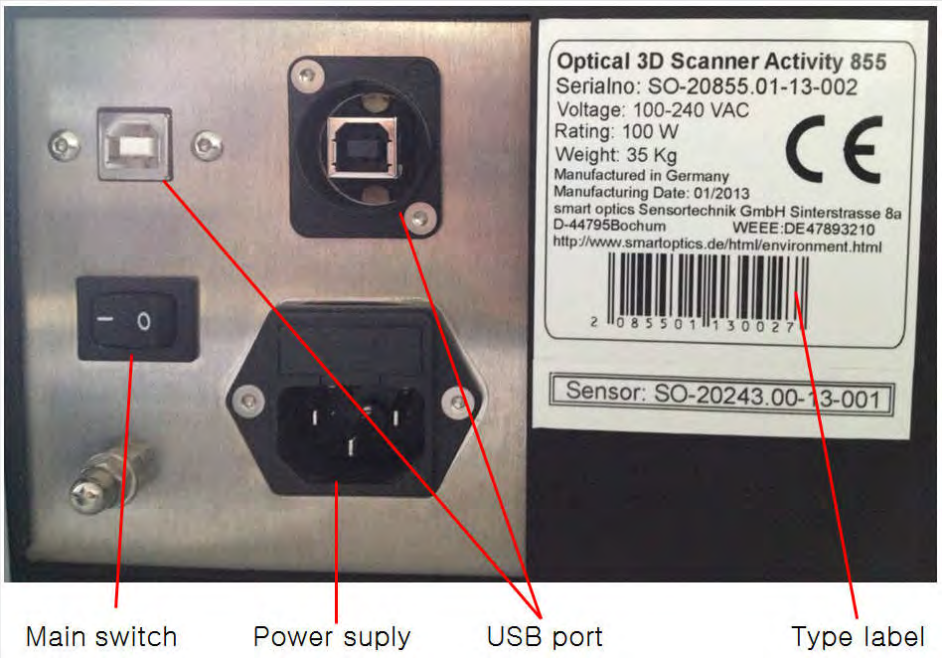
Universal model holder with plaster model

6 Installation

6.1 Installation of the scanner

- Prior to installation, make sure that the power switch at the rear of the instrument is set at 0.

- Plug the ends of the two USB cables into the USB sockets at the rear of the instrument.



- Connect the other ends of the USB cables into the corresponding USB port at the rear of the PC.
- Connect the power cable to the mains power port of the scanner and to a mains socket.
- Turn on the scanner at the main switch.
- Then switch off the scanner and continue with the installation of the PC and the operational software (see separate installation instructions).

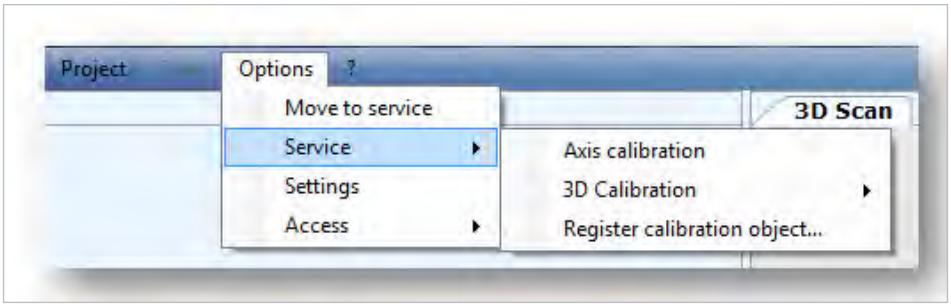
See also:

Installation instructions for the DentalTeacher

7 Starting the scanning software

- Use the desktop icon to start-up the ARCTICA Autoscan scanning software.

7.1 Options/Extras/Calibration



Start the calibration under Options/Extras:

- Axis calibration
- 3D calibration
- Register calibration model

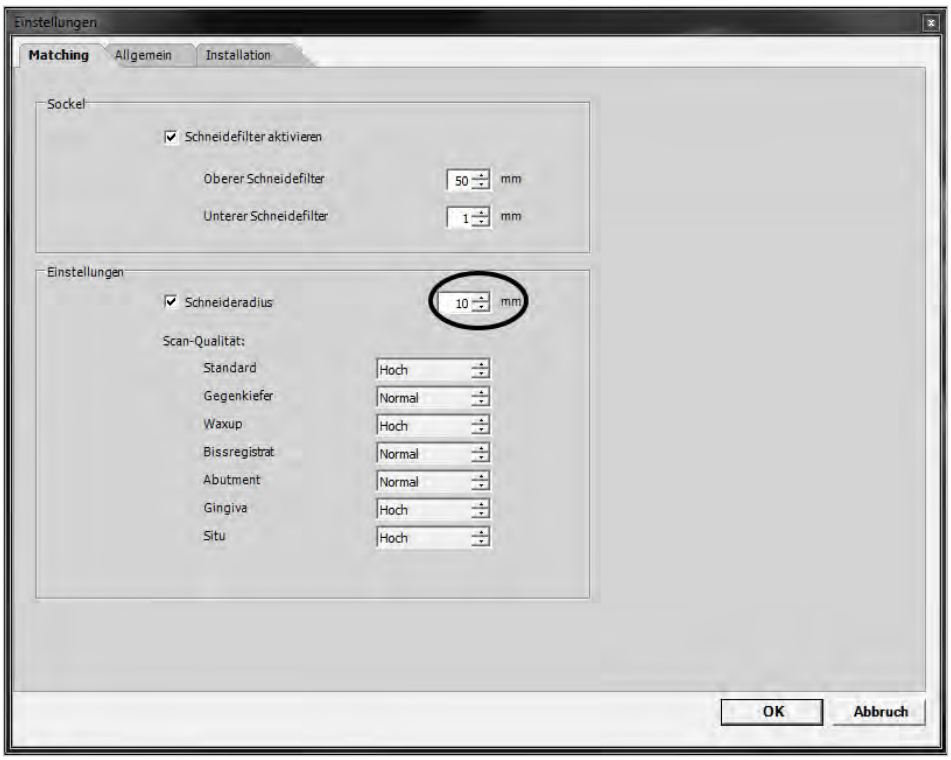
The whole workflow is described in the chapter, "Calibration process".

See also:

Calibration process, Page 0

7.2 Options/Settings/Matching

7.2.1 Matching / Settings

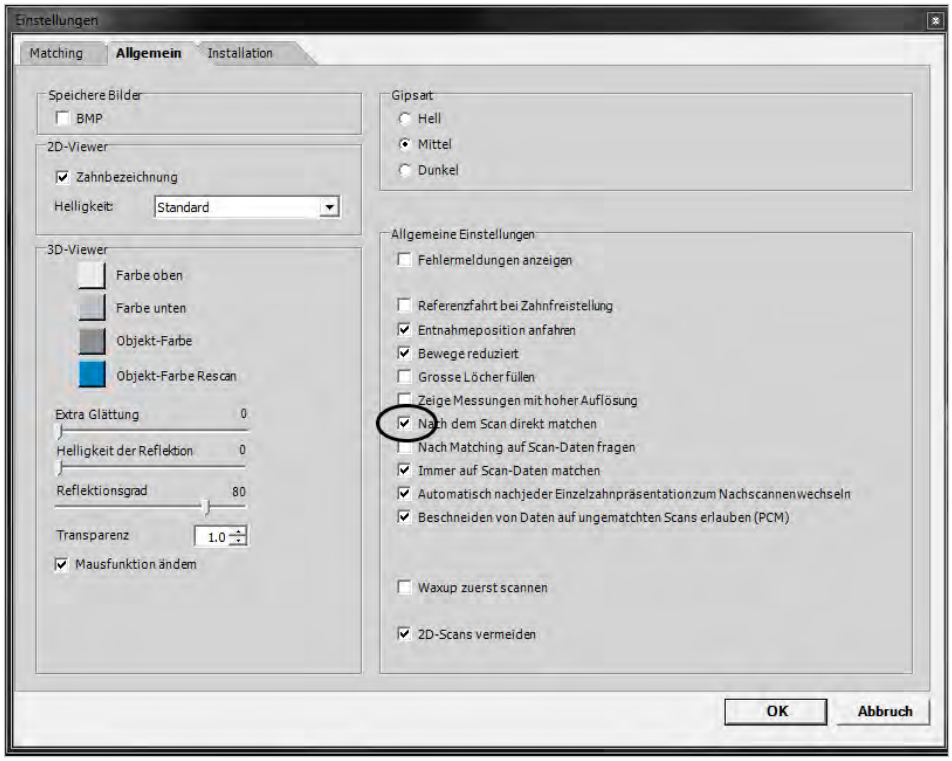


If it is preferred to scan individual teeth, a cutting radius (e.g. 10-12 mm) can be defined under "Settings". This reduces the scanning time.
Cutting filter and cutting radius can be set in the Options / Settings / Matching menu.

- Activate the Cut radius checkbox, set to 10 mm and confirm with "OK".

No other settings need to be edited.

7.2.2 General



Save images

BMP:

If this is enabled, a BMP (bitmap) of the respective recording position is produced. This image, in which the stripe-light pattern is visible, is also saved to the project directory. These images serve as an aid if there are any measurement errors.

2D-Viewer

Brightness:

Allows the brightness of the camera images to be set. These settings have no influence on the 3D measurements.

3D-Viewer

Colour top:

Defines the background colour of the Viewer for the upper region.

Colour bottom:

Defines the background colour of the viewer for the lower region.

Object colour:

Defines the colour, in which the 3D object is to be displayed.

Object colour in Rescan:

Defines the colour, in which the most recently added image is to be displayed.

Extra smoothing:

Smoothens the surface of the 3D object in the viewer even more. This setting has no influence on the 3D measurement.

Brightness of the reflection:

Adapts the reflection of light on the object in the 3D viewer.

Degree of reflection:

Defines the intensity of the reflection on the object in the 3D viewer.

Transparency:
Sets the transparency of the scan object.
Change mouse function:
When the check box is activated, the allocation of the key commands of the mouse is changed to shift and rotate the object in the 3D viewer.

Type of plaster

This influences the light intensity of the sensor during a measurement. "Light" for white plaster, "Medium" for beige, and "Dark" for very dark plaster.

General settings:

Display error messages:
If "Display error messages" is activated, a window opens and displays the respective error message and a description in case there is an error.
Reference run at tooth preparation:
A reference run is performed after a single scan before resuming the scanning.
Drive to removal position:
Scanner drives to "home position" after each scanning process.
Movement reduced:
When the check box is activated, the object is displayed as a pixel cloud in the 3D viewer when the mouse is moved. This optimises the speed of display during the movement.
Fill large holes:
If the scan still includes "holes" in the data, these can be filled using the function, "Fill large holes". The size of the hole to be closed is limited by entering the area in mm². We recommend using this function with flat surfaces only.

Note
Incomplete areas at preparation margins or at sharp occlusal edges should not be supplemented with this function as the area to be replaced is only interpolated.

Show measurements at high resolution:
When the check box is activated, the object is displayed at an even higher resolution in the 3D viewer. The calculation of the object when new images are added as well as upon movements requires a considerably higher performance of the graphics card and can lead to time delays.
Match right after scan:
Matching is performed right after each scan is recorded completely.

Note
Placing a tick at "Match right after scan" reduces the duration of the preparation validation.

Query for matching to scan data:
This function can be used to define whether the existing STL or the existing individual images should be matched. The query is made only when an STL already exists.
Always match to scan data:
To create the STL, the existing individual images are again used in subsequent or supplementary scans and, as a matter of principle, an existing STL is not used for calculation.
Switch to rescan automatically after each single tooth presentation:

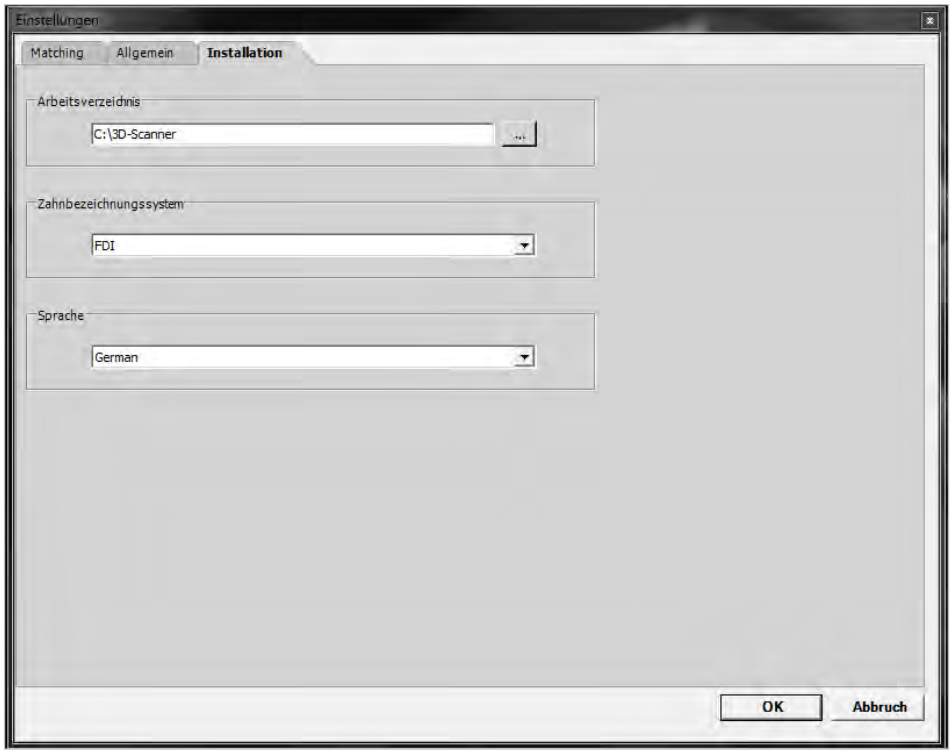
The workflow is such that rescan mode is opened automatically after each single scan.

Permit cutting of data on unmatched scans (PCM):
Allows scan data to be cut before matching.

Scan waxup first:
The workflow is such that the waxup scan is performed first, before the jaw scan.

Forego 2D scans:
Allows to dispense with the 2D scan in the "normal" scanning process (without cutting radius).

7.2.3 Installation



Work directory:

The location, in which the scanned data are saved, can be changed here. All data are created and filed in this folder, inter alia. To change this memory folder, click the "Browse" button and store the newly selected memory folder. Confirm by clicking on "OK" to continue.

Tooth identification system:

Select from FDI and US tooth scheme.

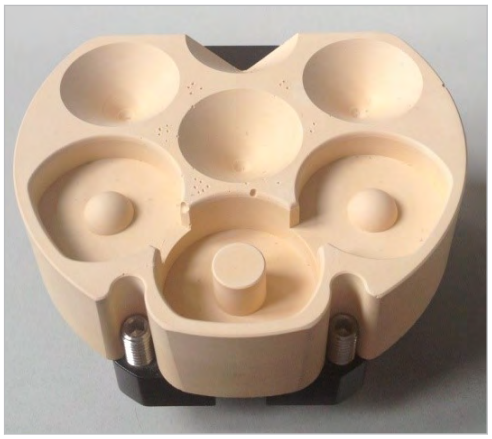
Language:

The language is adapted to the user interface here. The following languages are available:
German, English, Spanish, French, Italian, Portuguese, Romanian, Turkish and Russian.

8 Calibration process

8.1 Clamping the calibration model

Each scanner comes with a calibration block and the corresponding calibration data on the rear thereof. The block is easy to clamp into the universal model holder (see Figure below) and thus into the scanner.

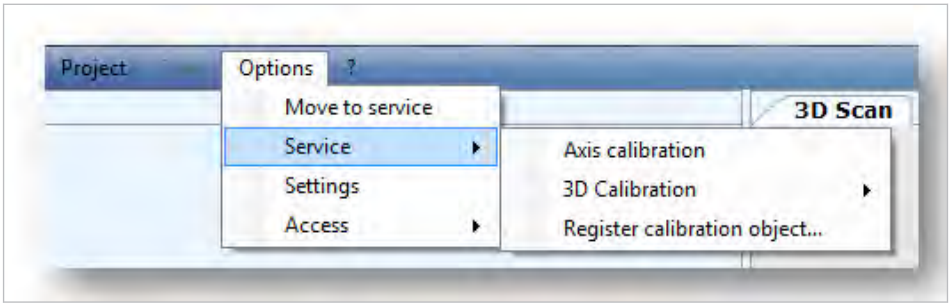


- Clamp the calibration model into the universal model holder and place it in the scanner:

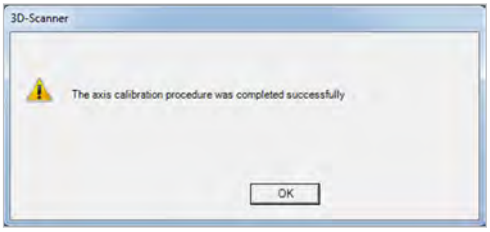
8.2 Axis calibration

- Place the calibration model in the scanner.
- Use the ARCTICA Autoscan 2.6 desktop icon to start-up the scanning software.

- Start the axis calibration under "Options/Extras/Axis calibration":



- The calibration proceeds automatically and the following message is shown:



Note

To ensure uniform, good scan results, the axis calibration should be performed every four weeks with the aid of the calibration model included in the delivery. This is mandatory after every transport of the instrument. Axis calibration is also recommended if temperature varies by +/- 15 degree.

8.3 3D calibration

⚠ CAUTION

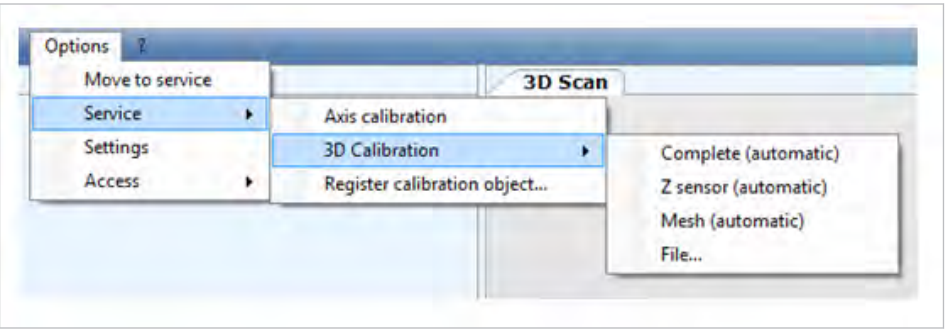
The calibration model needs to be registered before the 3D calibration.

- Place the calibration model in the scanner.

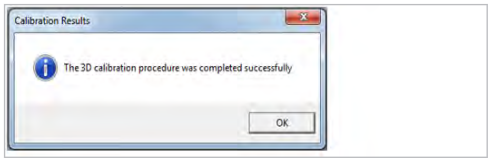
See also:

Clamping the calibration model

- Use the ARCTICA Autoscan desktop icon to start-up the scanning software.
- Start the 3D calibration under "Options/Extras/3D calibration/complete (automatic)":



The 3D calibration proceeds automatically and the following message is shown:

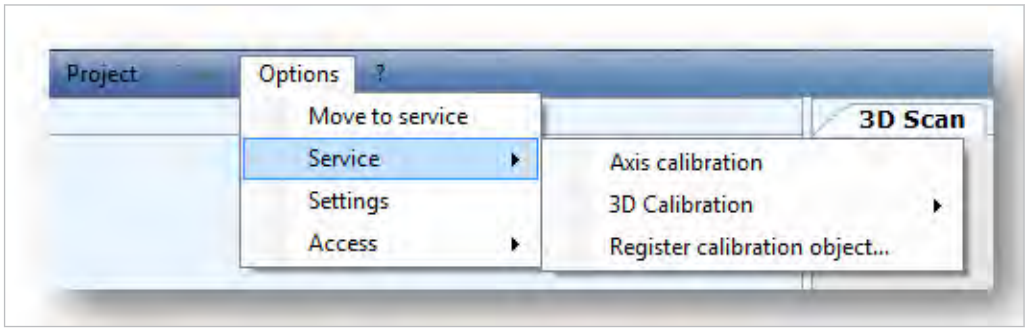


Note

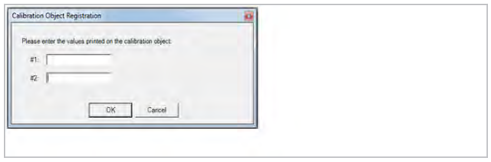
Repeat the calibration about every four weeks and after each time the unit is transported in order to ensure the consistently high accuracy of the scan result.

8.4 Register calibration model

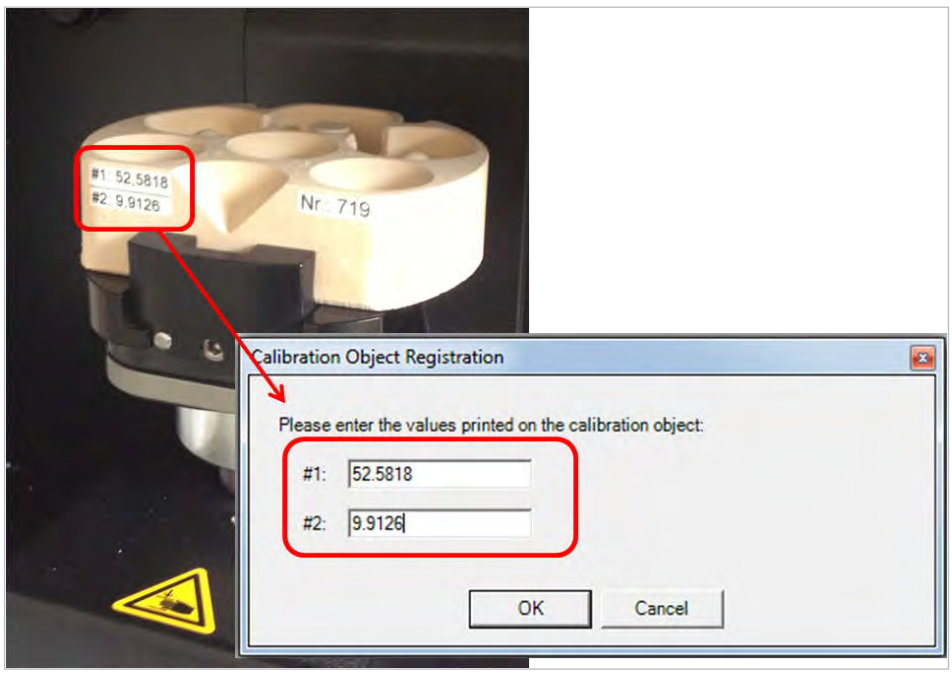
- Start "Register calibration model" under "Options/Extras/Register calibration model...":



Displays the registration window:



- Enter the calibration data shown on the rear of the calibration model.

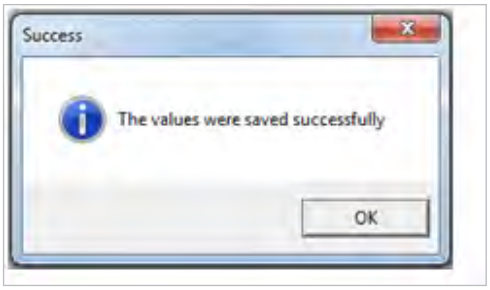


Note

Each calibration block is measured by industrial means. These specific values are shown on the calibration model. After each reinstallation of the software or replacement of the calibration model, these data need to be entered into the software.

- Confirm the step by clicking on "OK".

The following message is displayed:



9 Installing the Dental Teacher Software

9.1 Installing the Dental Teacher

The software for the Dental Teacher is fully installed and checked for function at the factory at the time of delivery. The Dental Teacher unit can be started-up immediately. If installation on the scanner PC or any other suitable PC is required, the installation must proceeds as described in the following.

Installation of the SW on the scanner PC

This involves the full installation of two SW packages.
1. KaVo multiCAD Software **Mat. no. 1.010.8130**
2. KaVo Prepvalidation Software **Mat. no. 1.010.8744**

Follow the proper sequence for installation!

Installation of the SW on a PC that is not connected to the scanner. (Student PC)

"Version Dental Teacher Professional"

This involves the full installation of two SW packages.
1. KaVo multiCAD Software **Mat. no. 1.009.0351**
2. KaVo Prepvalidation Software **Mat. no. 1.010.8744**

Follow the proper sequence for installation!

"Version PREPvalidation"
This involves the installation of one SW package.
1. KaVo Prepvalidation Software **Mat. no. 1.010.8744**

9.1.1 Administration of the directory structure of Dental Teacher

Note

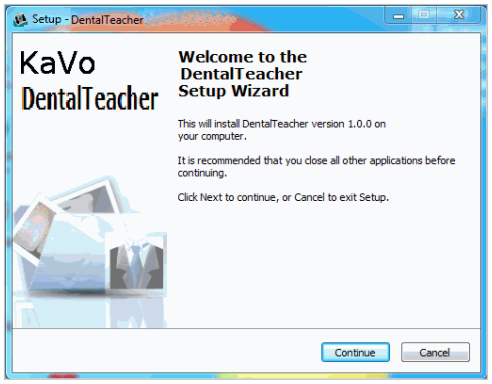
The directory structure of Dental Teacher must be administered by an administrator.

9.1.2 KaVo multiCAD and virtual articulator

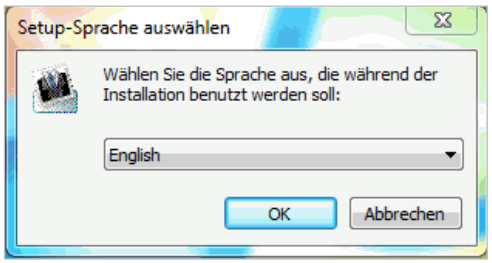
- Open the CD drive of the PC and insert the enclosed CD "KaVo multiCAD".
- Close the drive and follow the instructions on screen.
- Start the "Setup".

9.1.3 Dental Teacher

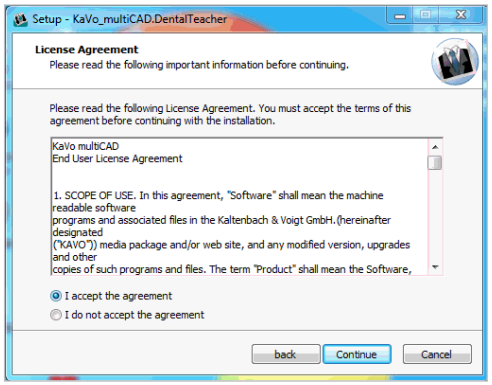
- Open the CD drive of the PC and insert the CD.
- Close the drive and follow the instructions on screen.
- Start the "Setup".



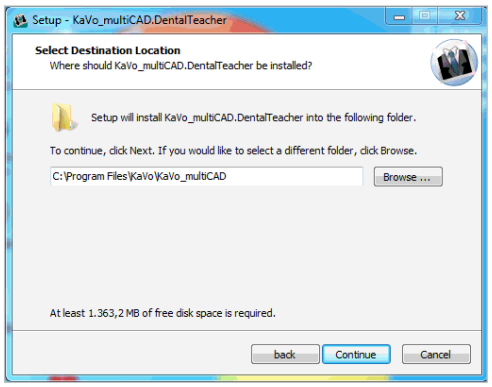
- Select language and confirm by clicking on "OK".



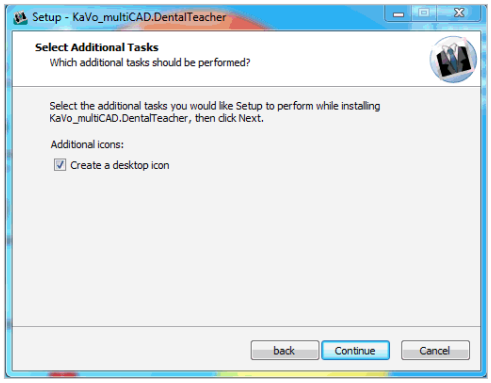
- Select "Accept" and click on "Continue".



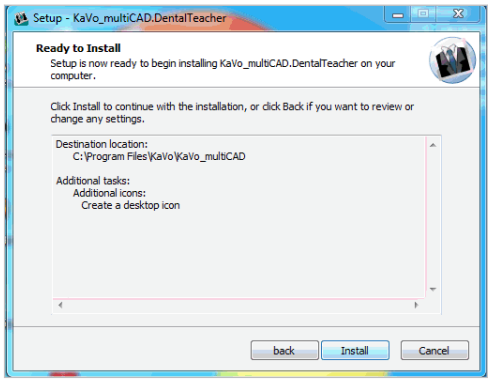
- Confirm the installation path by clicking on "Continue".



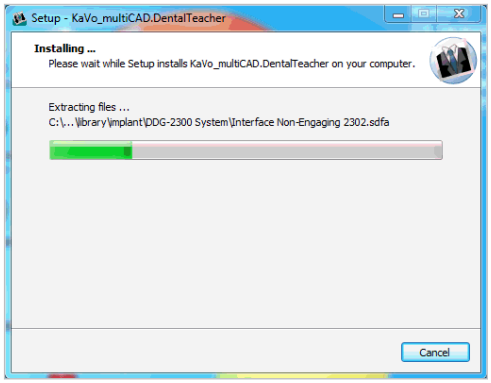
- Select "Create a desktop icon" to generate a symbol on the desktop and confirm by clicking on "Continue".



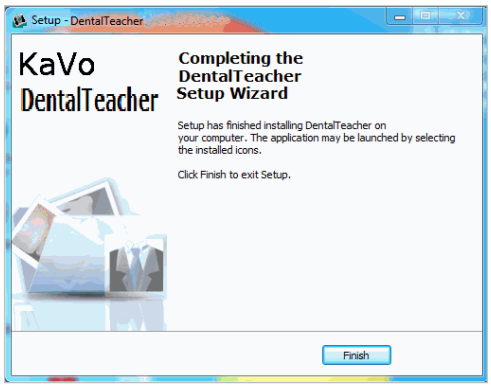
- Start the installation by clicking on the "Install" button and wait until the process is completed.



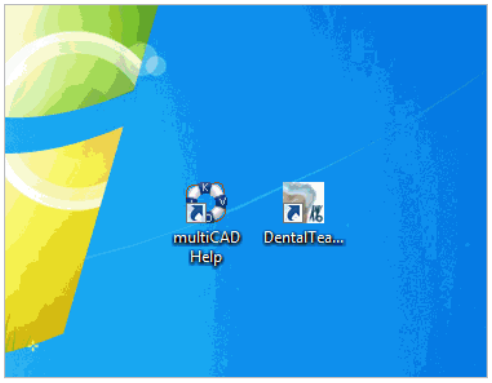
⇨ This may take several minutes.



- Click on "Finish".



After successful installation, two new icons are displayed on the desktop.

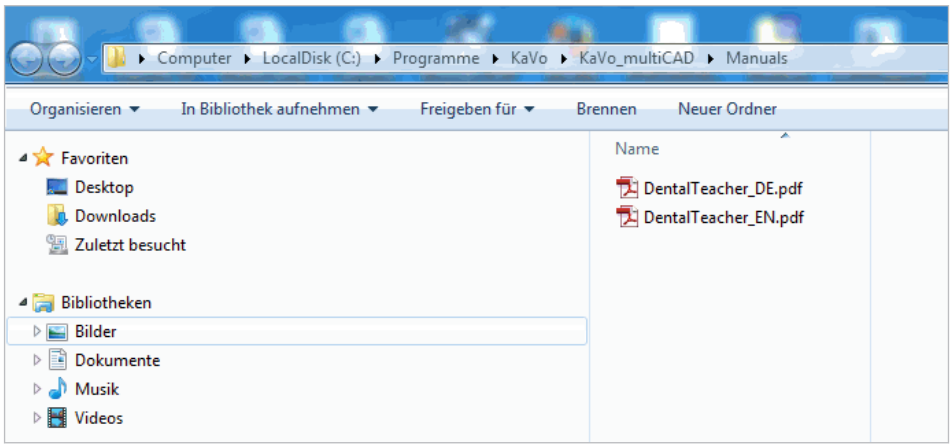


New icons on the desktop

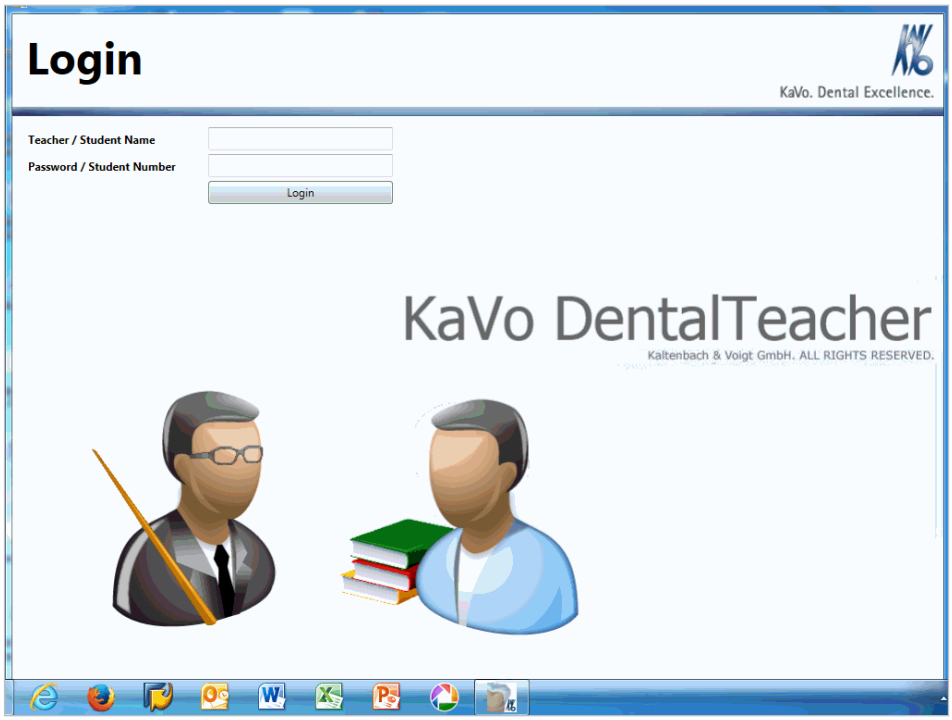
After successful installation, two new icons are displayed on the desktop:

- "Dental Teacher" lets you start the "Dental Teacher" software
- "multiCAD Help" lets you display the Instructions for Use of the Dental Teacher

▸ Double-click on the "multiCAD Help" icon and open the corresponding PDF file to start the Instructions for Use of the Dental Teacher in German or English.



- Double-click on the "Dental Teacher" icon to start the software.



10 Product description of Dental Teacher

The Dental Teacher features the following:

- An objective assessment
  - Presentation of initial condition, target condition (master preparation) and student preparation
  - Visualisation of three-dimensional preparation deviations in comparison to the master preparation and/or in comparison to the original tooth
  - Evaluation of distances and preparation angles
- Can be used for the following preparations:
  - Prosthetic treatment (all preparation forms, e.g. crowns, bridges etc.)
  - Conservative dental filling therapy (all preparation forms incl. minimally invasive)
  - Checking adjacent teeth for preparation artefacts
- Easy and rapid operation of the fully automatic model scanner
- Tasks are freely definable, individual master preparations (with CAD reworking) pulp display in preparation
- KaVo models and models from other manufacturers can be used
- Network capability with separate workplaces for scanning and assessment
- Visualisation software can be provided decentrally to trainees (self assessment)
- Forgery-proof documentation
  - Option of self assessment (self-assessment)
  - Documentation of the learning progress and final result
  - Statistical assessments (task-, trainee-, course-related)
- Integration in the digital workflow
  - Integration in the virtual articulator
  - Integration in the production process with CAD/CAM

10.1 Purpose – Intended use

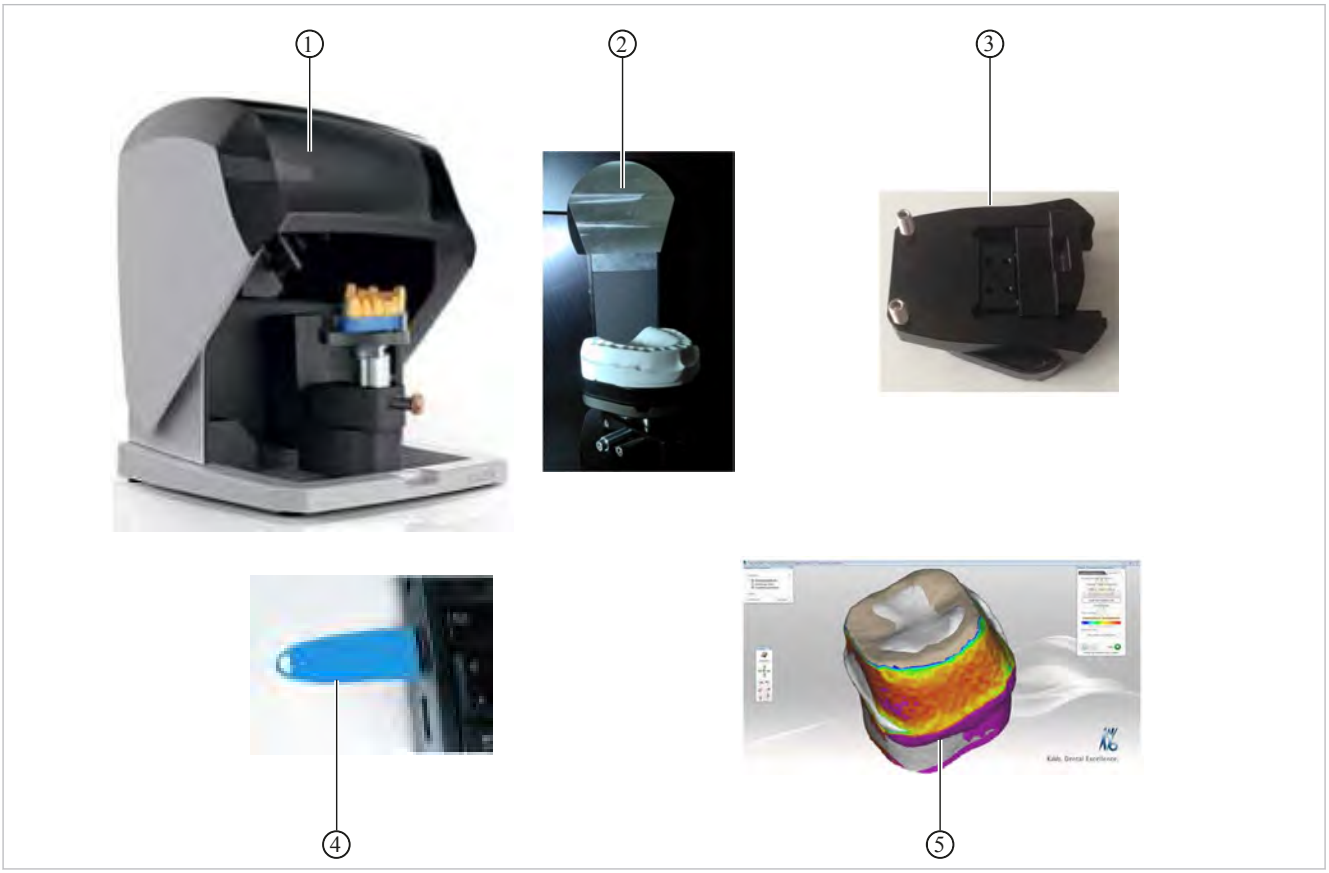
Preparations on models must be done as an integral part of dental training and studies. The intended use of the Dental Teacher system supports teachers and trainees in the assessment of trainee preparations throughout the preclinical and clinical training in dentistry.
Therefore, from the aspect of the teaching staff, the preparation tasks to be performed can be standardised and simplified. An objective assessment of the trainee tasks can be accomplished quickly and easily.
Trainees have the opportunity to control and document their presentations themselves. Deviations of their work from the specified master preparation are measured objectively.

10.2 Scope of delivery

The Dental Teacher system is delivered fully pre-configured and installed and includes the following components:

- ARCTICA AutoScan
- Workstation with keyboard and mouse
- Monitor 24“ inch
- Dongle
- Model holder
- Universal model holder for tooth models from third party manufacturers
- Instructions for use ARCTICA AutoScan
- Instructions for use Dental Teacher
- Instructions for Use KaVo multiCAD

10.3 Overview



Dental Teacher

① ARCTICA AutoScan
② KaVo Upper jaw tooth model
③ Universal model holder
④ Dongle
⑤ Workstation with display
Dental Teacher Software

10.4 Dental Teacher Software Controls

Button	Description
New	Create new job
Edit	Process job
Delete	Delete job
Inspect Task	Evaluate job
Inspect Solution	Assess solution
Print List	Print list
Print Screens	Print images
Set Password	Change password
Logout	Logout
Scan	Scan (starts scanning process in the KaVo ARCTICA AutoScan)
Edit Scan	Process scan
Cancel	Abort dialog without saving

Mouse button assignments:

- Zoom: scrolling wheel
- Rotate object: right mouse button
- Shift view: keep left and right mouse buttons pressed

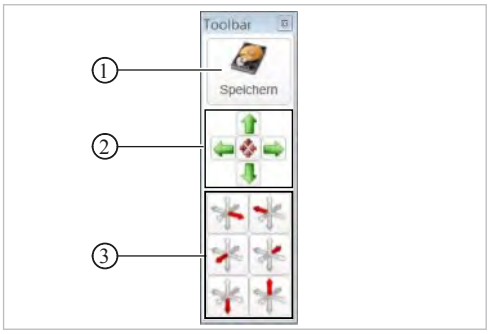
Icons for operation

Button	Description
	Continue in workflow
	Discontinues the scan

Button	Description
	Cuts data within the selection
	Cuts data outside the selection
	Undoes the last cutting process or the last measurement
	Opens the "Fill holes" dialog
	Saves the current step
	Finalise project

See also:

IfU KaVo ARCTICA AutoScan

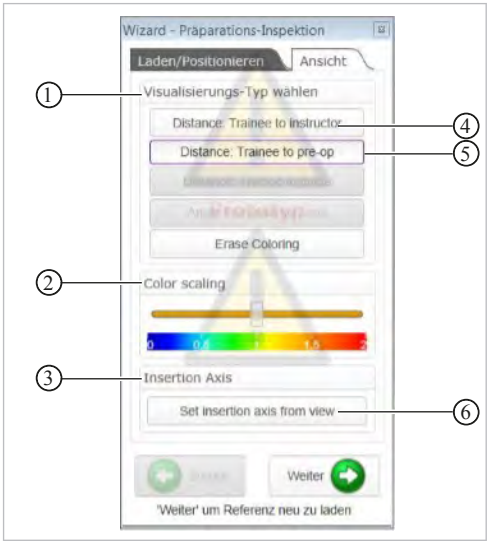


Toolbar

① Save

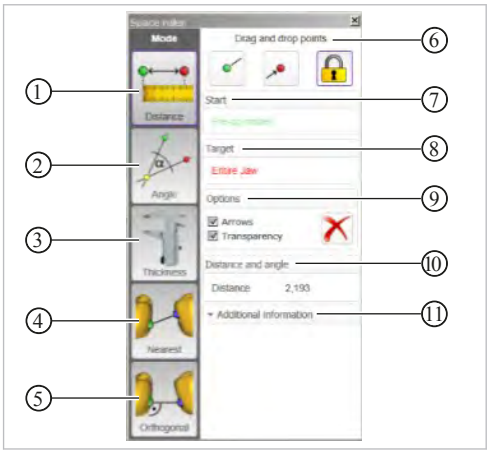
② Move tooth model

③ Views of the tooth model



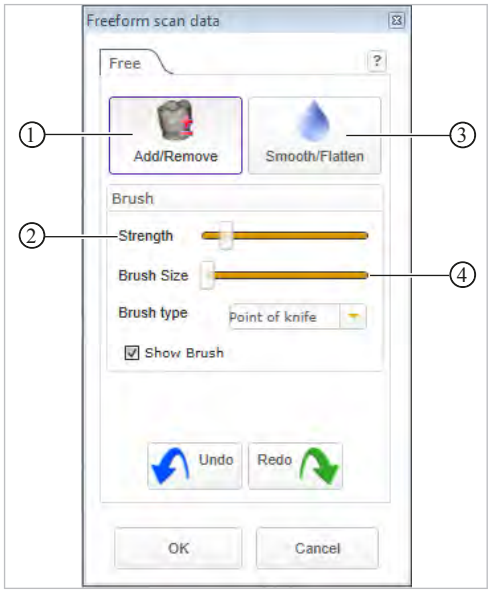
Assistant preparation inspection

① Select visualisation type
② Colour gradient
③ Insertion axis
④ Comparison teacher/student
⑤ Comparison original tooth/student
⑥ Display of undercuts for direction of insertion



Measuring Tools

① Measure distance
② Measure angle
③ Measure thickness
④ Measure shortest distance
⑤ Measure orthogonal distance
⑥ "Drag and drop points" menu
⑦ Start
⑧ Destination
⑨ Options
⑩ Distance and angle
⑪ Additional information



"Freeform scan data" tool

① Add/remove material

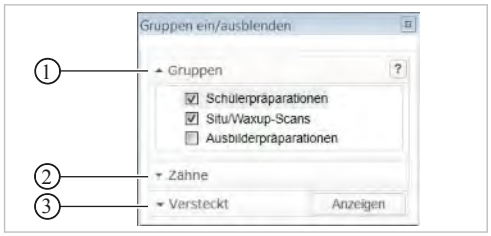
② Extent of removal (select approx. 20 %)

③ Smoothen the material

④ Brush size (select left limit stop)

You can display or hide different views using the "Display/Hide Groups" palette:

- Trainee preparations
- Non-prepared teeth
- Teacher preparations
- Pulp (optional)



Display/Hide Groups

① Selection of the indicated groups

② Selection of the indicated teeth

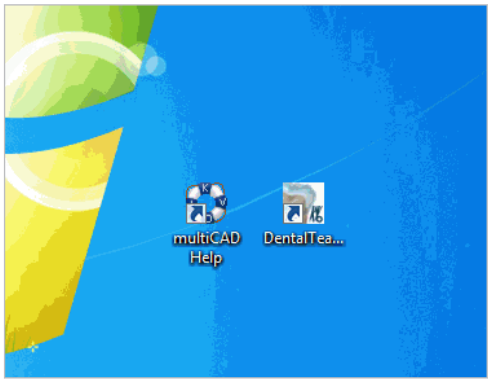
③ Hidden

See also:

IfU KaVo multiCAD

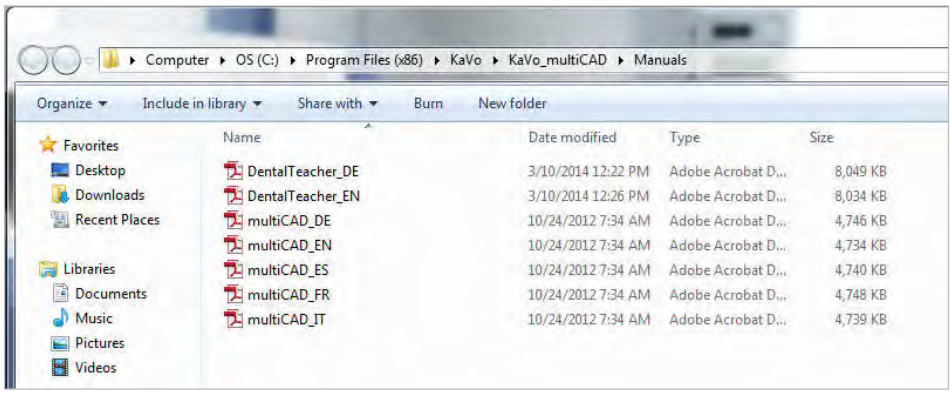
11 Starting-up the Dental Teacher

Two new icons are displayed on the desktop.



New icons on the desktop

- Double-click on the "multiCAD Help" icon and open the corresponding PDF file to start the Instructions for Use of the Dental Teacher and multiCAD in German or English.



- Double-click on the "Dental Teacher" icon to start the software.

12 Operation

12.1 Instruction personnel

Dental Teacher supports the teachers in the following tasks:

- Provision of tasks/patient cases for trainees
- Assessment of trainee preparations

The "Dental Teacher" software can be used in one of two ways:
1. Controlled by a course administrator
2. Controlled by the corresponding teacher (one or more)

A) Controlled by a course administrator

The following options are available to the course administrator:
- Define start and end of the course as the period of time during which the "Dental Teacher" software can be used
- Define which tasks a trainee has to solve
- Assessments and comments can be made by the course director only (password-protected)

12.1.1 Resetting the student password

Note

The password can be reset only under the Course Admin function.

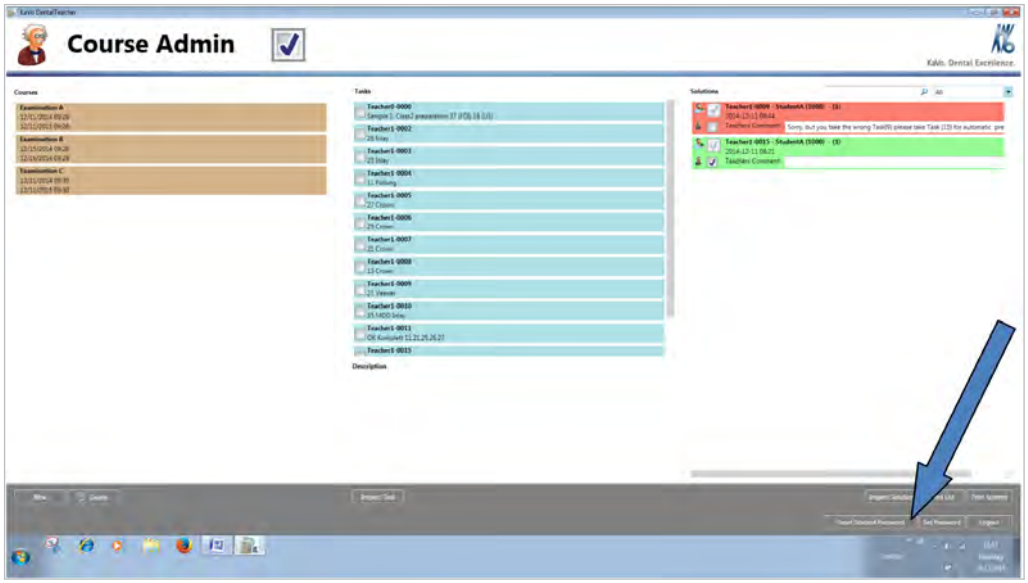
If a student forgets his or her own password, the password can be reset only by the Administrator. Without the proper password, the student can no longer view previously scanned preparations. The teacher can still view preparations previously scanned by the students.

- Open the Dental Teacher Software under the Course Admin function.

See also:

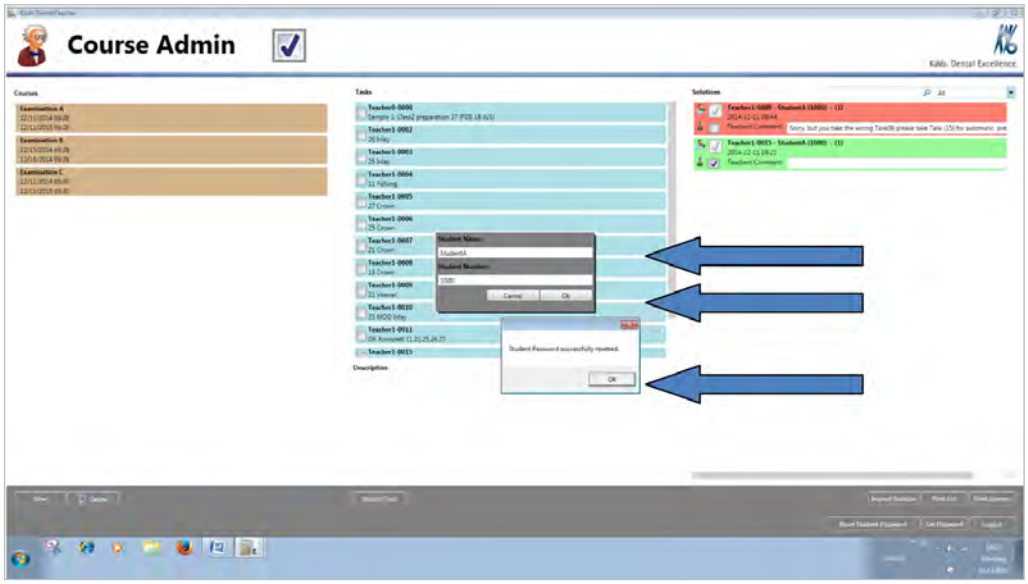
12.1.2 Start-up the Dental Teacher with course administrator privileges, Page 39

- Click on "Reset Student Password" to reset the password.



- Confirm the message, "Student Password successfully resetted", by clicking on "OK".

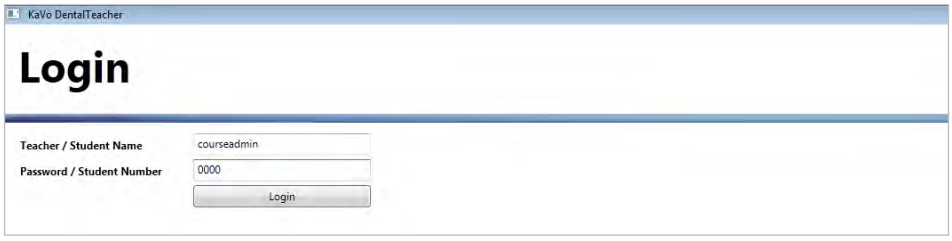
⇨ Now student access with any password is enabled again.



12.1.2 Starting-up the Dental Teacher with course administrator privileges

- Double-click on the "Dental Teacher" icon on the desktop to start-up Dental Teacher.

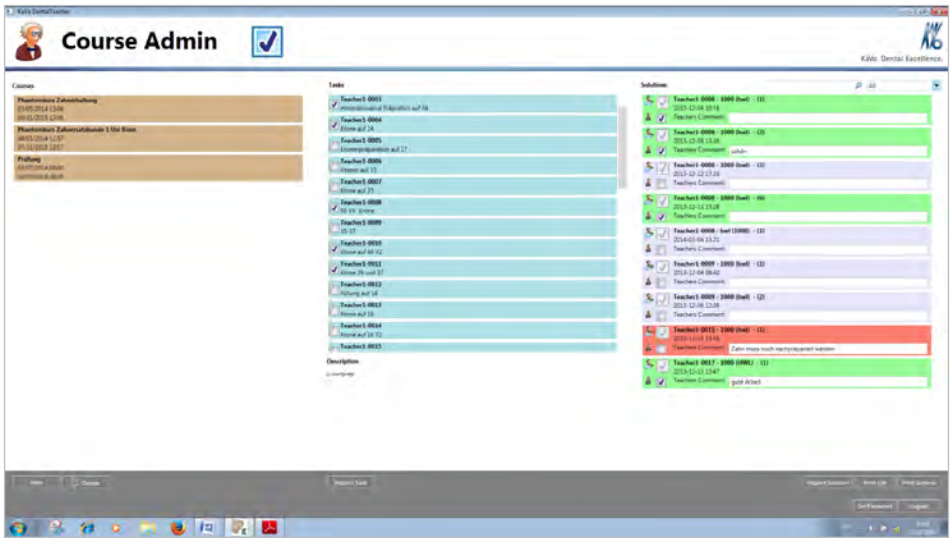
⇨ The same registration screen is shown for both teachers and trainees.



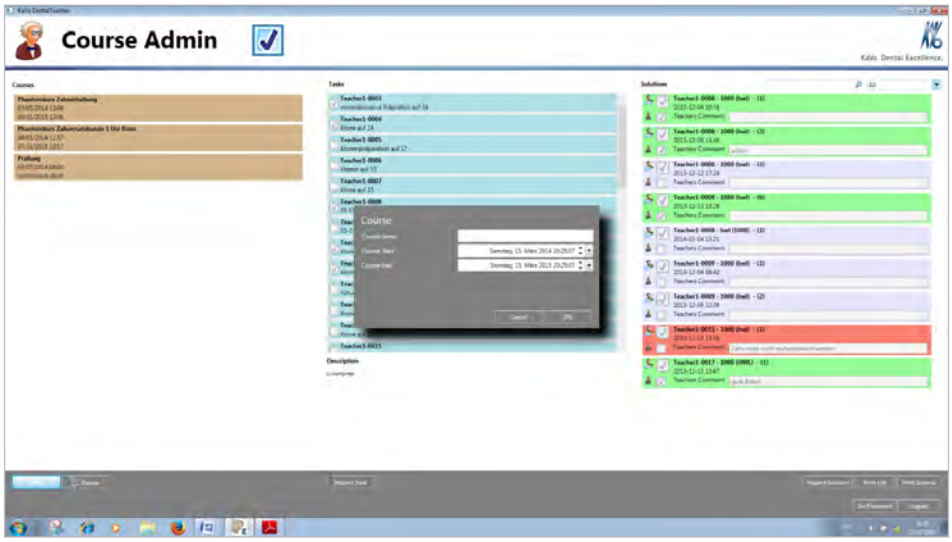
- As a "Course administrator", enter "courseadmin" in the "Teacher / Student Name" field and enter "0000" in the "Password / Student Number" field and then click on the "Login" button.

⇨ This causes the user interface for "Course administrator" to be displayed.

- If there is a tick at "Course Admin", the course administrator assumes control over the Dental Teacher.



- Click on the "New" button to enter the name, start and end of the course.
- Confirm using the "OK" button.



- The "Tasks" column can be used by the course administrator to select the tasks that are available in the course. The selection is made by placing a tick in the appropriate place.
- The "Solutions" column shows the preparation validations after trainees are released. The solutions can be assessed by the course administrator only. The person creating the task does not have an opportunity to assess the task.

B) Controlled by the corresponding teacher

The teacher creates tasks for preparation validation and can assess and comment on these tasks. Each task can be changed and/or deleted only by the person who created it.

12.1.3 Starting-up the Dental Teacher with teacher privileges

Requirement
The blue dongle is connected to the Dental Teacher workstation.

KaVo ARCTICA AutoScan is switched on and ready for operation.

Both USB connections between the Dental Teacher workstation and KaVo ARCTICA AutoScan are connected.

Note

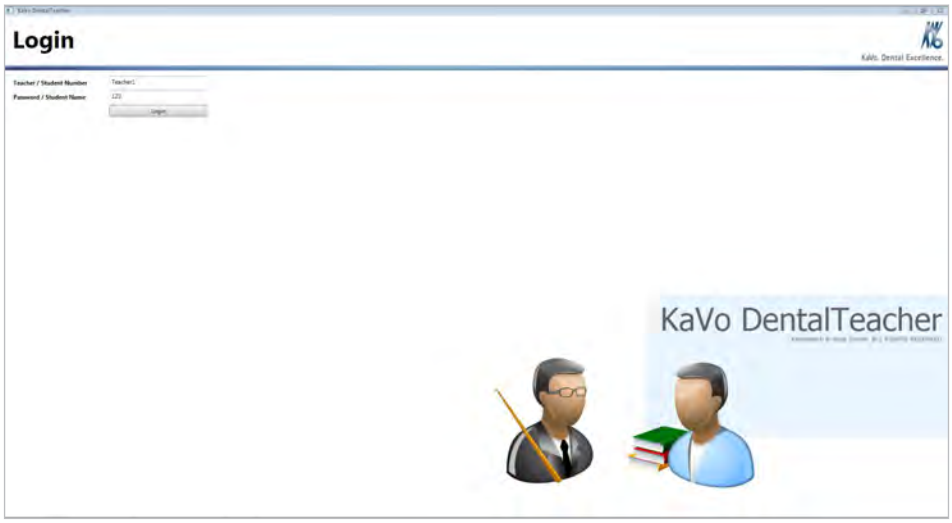
The teaching staff must register under "Teacher1 ... 15" (no space between teacher and the numeral), in case of new commissioning, the password is "0000". Afterwards, the password must be changed.

See also:

12.1.4 Change password, Page 42

- Double-click on the "Dental Teacher" icon on the desktop to start-up Dental Teacher.

⇨ The same registration screen is shown for both teachers and trainees.



- As a "Teacher", enter your user name and password in the fields "Teacher / Student Number" and "Password / Student Name", respectively, and click on the "Login" button.

⇨ User interface for "Teacher" is displayed.

Dental Teacher user interface for the teacher

① List of tasks	② Tasks worked-on by trainees
③ Create new task	④ Delete task
⑤ Check task	⑥ Assess trainees' solution
⑦ Print list	⑧ Print images
⑨ Change password	⑩ Logout

- Click on "Logout" to close the Dental Teacher.

12.1.4 Change password

- Click the "Set Password" button to change the password.

12.1.5 Create new job

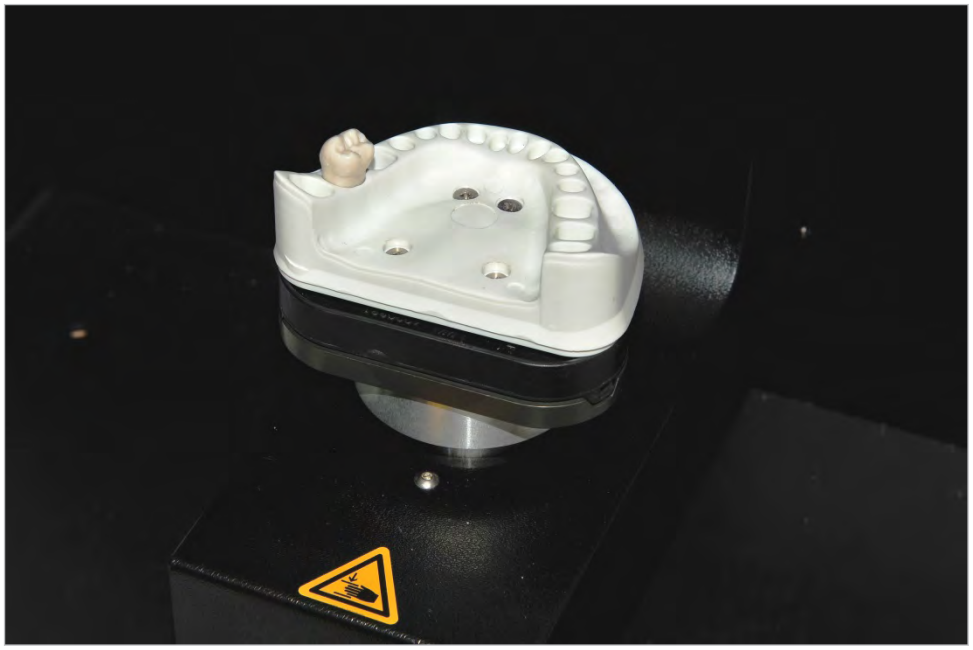
A task must be created to provide students with all the necessary information required for the processing of a preparation. The preparation task can be described in detail. By entering the scan data of a master preparation as a reference, trainees can carry out an objective assessment of the preparation.
To be able to carry out an assessment of tooth preparations, it is mandatory to store the unprepared tooth as a 3D scan in the Dental Teacher database.

Entering original teeth (non-prepared) into the database

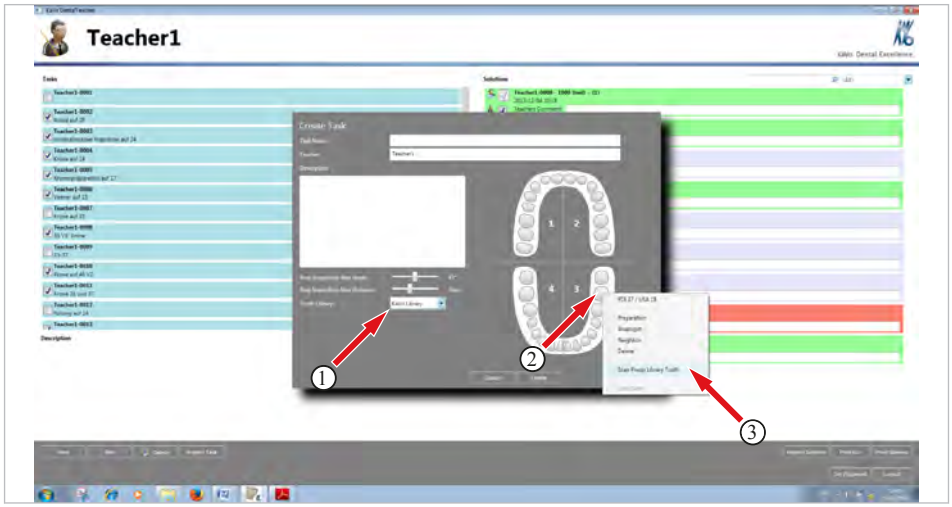
Original teeth can be entered into the Dental Teacher user interface for the teacher.

- Click on the "New" button.

- Insert the original tooth in the model holder of the scanner.

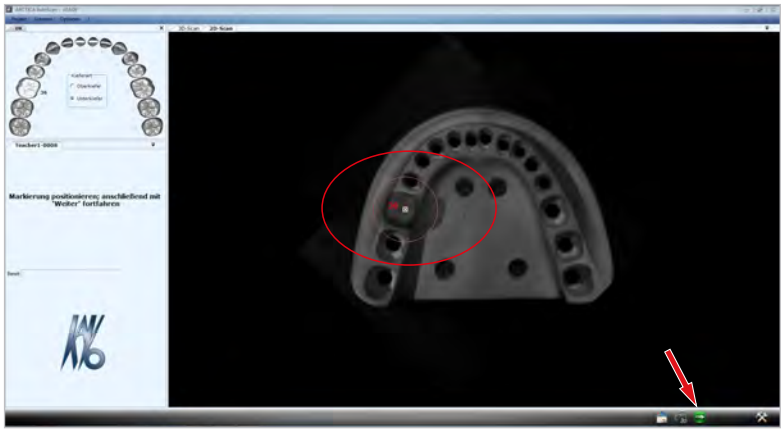


- Close the door on the ARCTICA AutoScan.
- Selected the "Tooth library" ① as desired from the list.
- Click on the desired tooth ② in the odontogram.



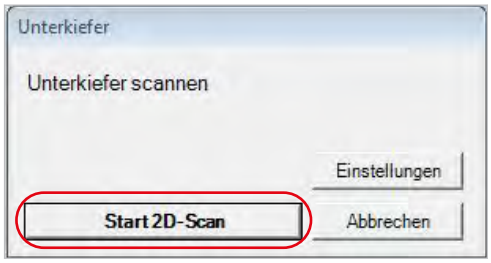
- Click on the "Scan Preop Library Tooth" button ③.

⇨ The scanning process starts up automatically in ARCTICA AutoScan.
⇨ A new application window ARCTICA AutoScan is displayed.

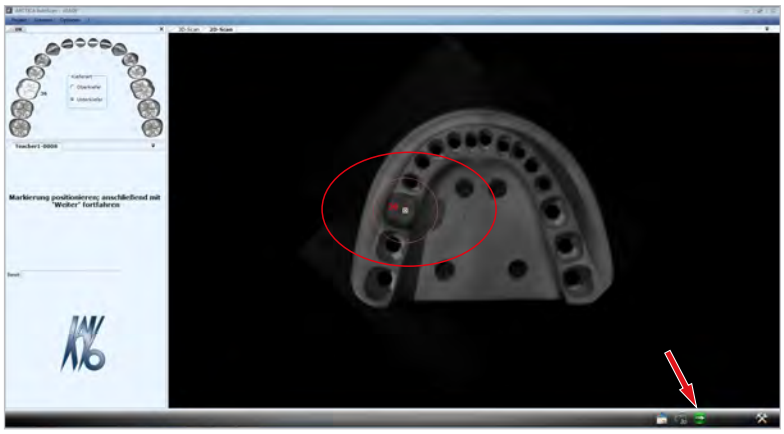


The ARCTICA AutoScan can scan the complete model. This is essential if complex, multi-unit image scans have to be processed.
If predominantly single preparations are to be scanned, time can be saved by restricting the "Scan Field".

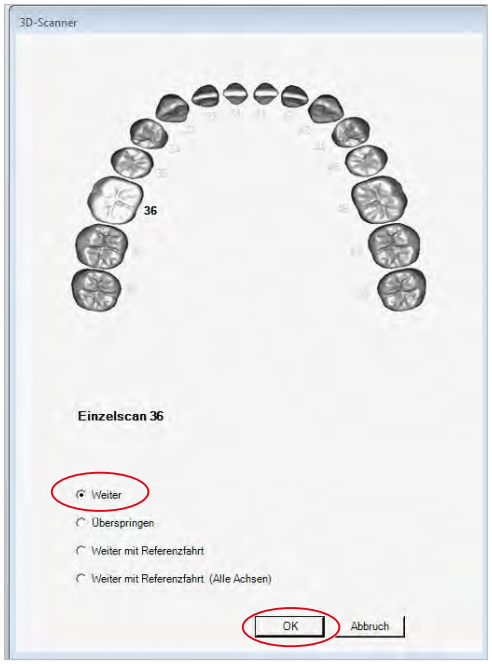
- Click the "Start 2D-Scan" button.



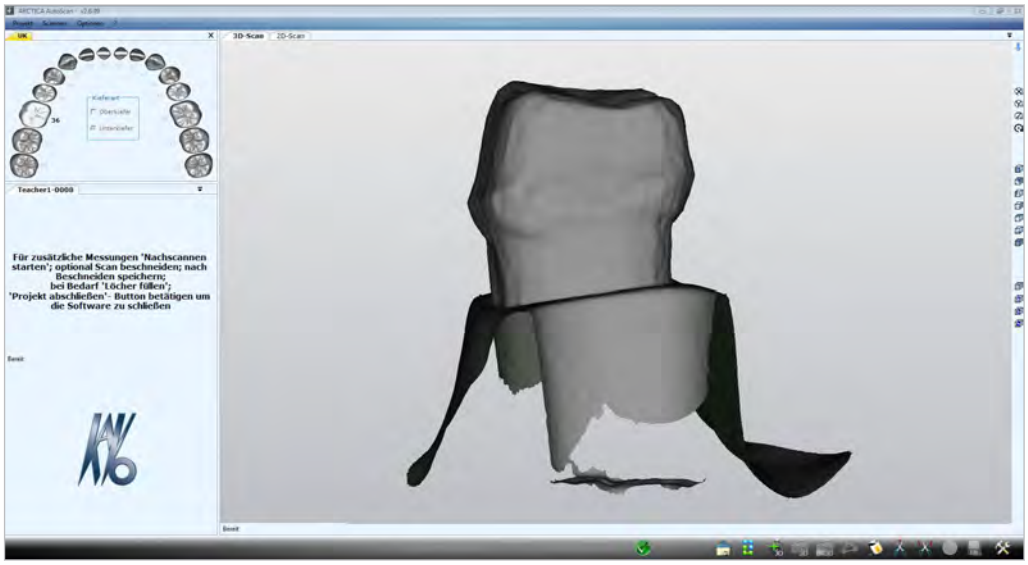
- If necessary, adjust the marking to ensure that the desired tooth is located inside the circle and then click on "Next" .



- If individual teeth are to be scanned, confirm the "Single Scan" dialog by clicking on "OK".



⇨ The scan is carried out automatically and a 3D display of the scanned model tooth is shown.



- If necessary, remove superfluous areas with scissors.
  For correctly positioned display of the individual scans, sufficient non-prepared areas must be available. Excessive cutting can lead to a faulty display.

- Set points using the left mouse button to form any shape you wish and then close the shape and cut out the area using the right mouse button.

- Fill holes if necessary.

- Click "Save" to save the scan.

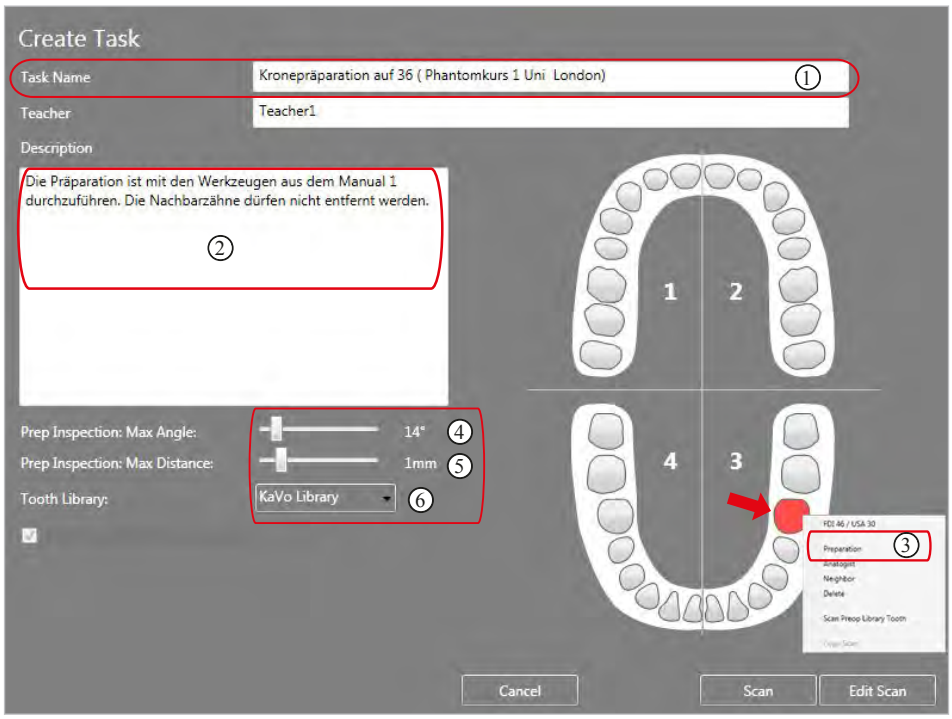
- Finalise project with a green tick.

Original tooth is available for creating a task.

Creating a master preparation in the Dental Teacher

The master preparation (Instructor prep) and the original tooth from the tooth library are the basis for preparation validation.

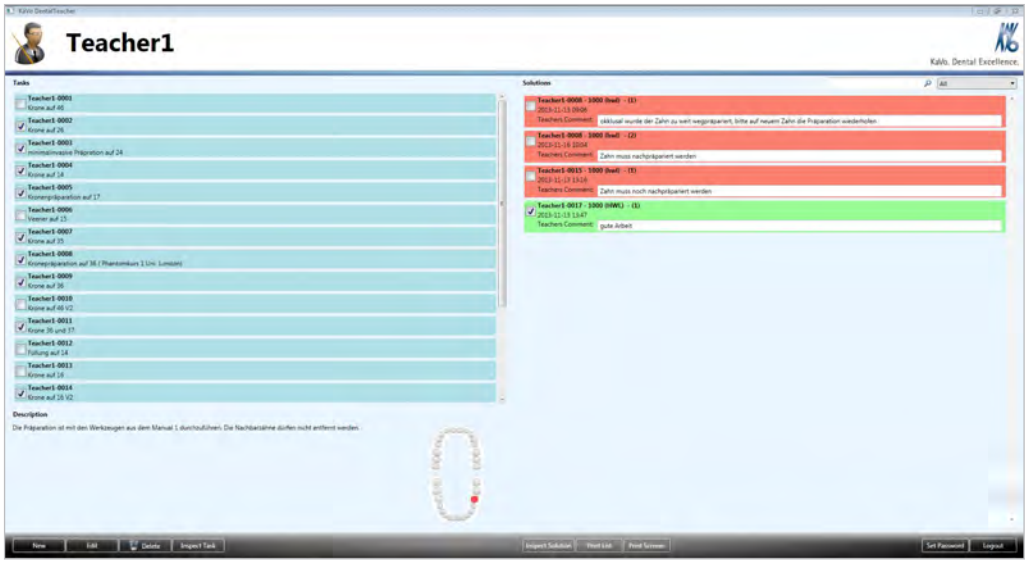
- Click on the "New" button to create a new task.



Dialog "Create Task"

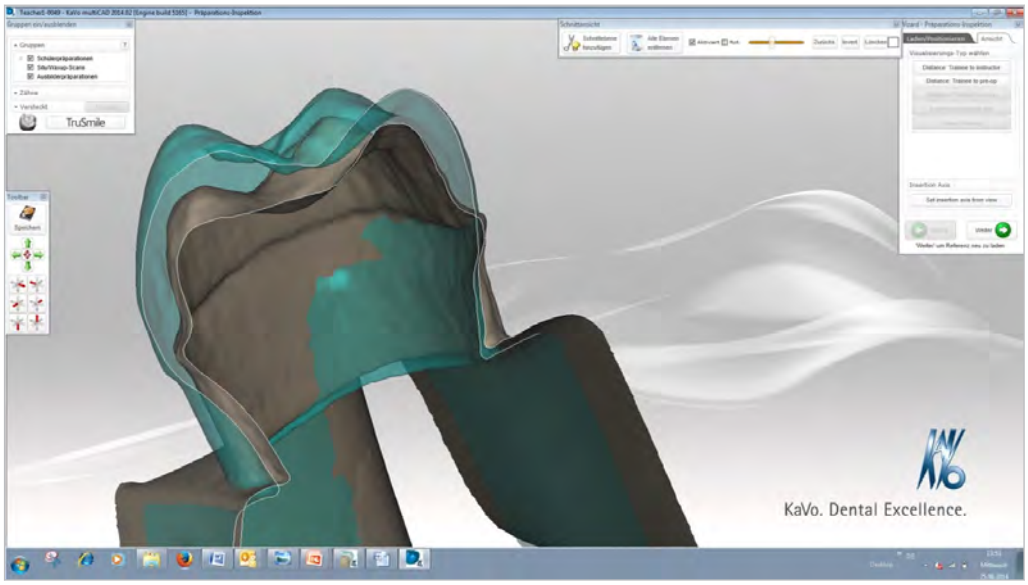
- Complete/set the following fields in the "Create Task" dialogue:
  - **Task Name** ①: Is used to identify the task for trainees and teachers
  - **Teacher**: Is completed automatically by the system based on the Login data
  - **Description** ②: Describes the task; the full text is shown in the display for trainees
  - **Prep Inspection: Max Angle** ④: Desired tolerance of the preparation angle
  - **Prep Inspection: Max Distance** ⑤: Desired tolerance of the preparation distances
  - **Tooth Library** ⑥: Select tooth library in which the original teeth were saved
- Click on tooth in the sprocket wheel and select "Preparation" ③ so select the tooth for preparation validation.
  If the "Preparation" field fails to be activated after clicking on a tooth in the sprocket wheel, this teeth has not yet been created as an original tooth in the selected tooth library.
- Press the "Create" button and then press the "Scan" button.

⇨ The master preparation is scanned by the scanner in the same manner as the original tooth and saved as a task in the Dental Teacher.


Teacher1
KaVo. Dental Excellence.
Tasks
Solutions
Description
New
Edit
Delete
Inspect Task
Inspect Solution
Print List
Print Screen
Set Password
Logout

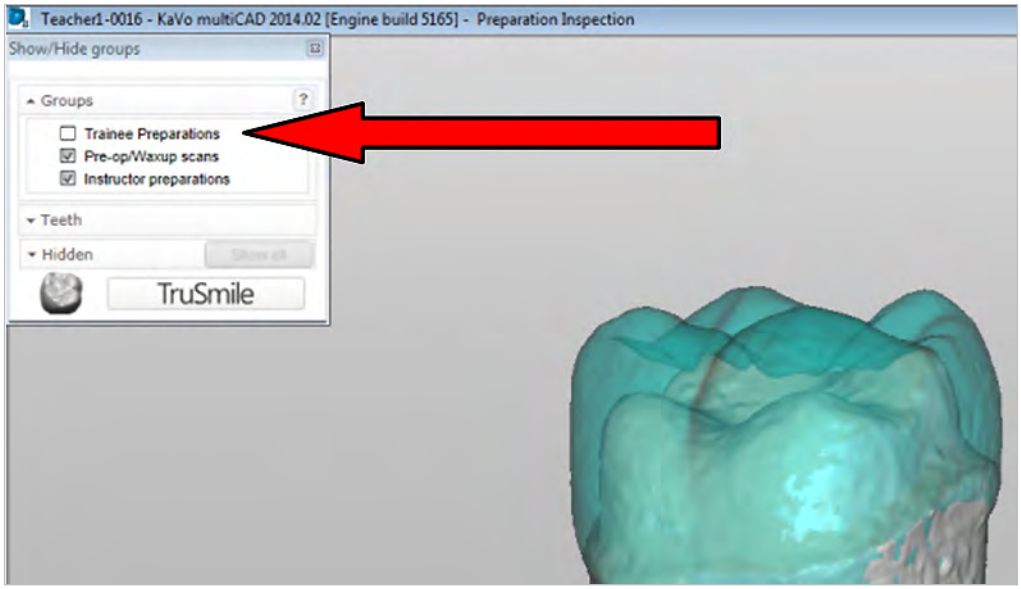
12.1.6 Optimal alignment of the master preparation with respect to the original tooth

If the master preparation is not displayed optimally with respect to the original tooth after creating a new task (e.g. lateral offset), the alignment can be done by hand. Procedure, e.g. for tooth 37:

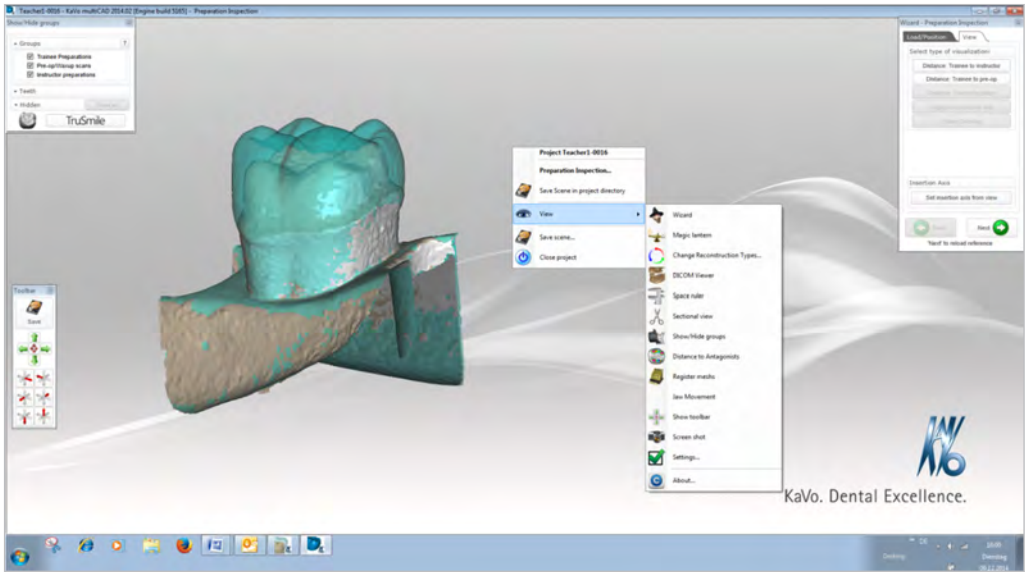


Manual alignment

- Remove the checkmark next to "Student preparations".

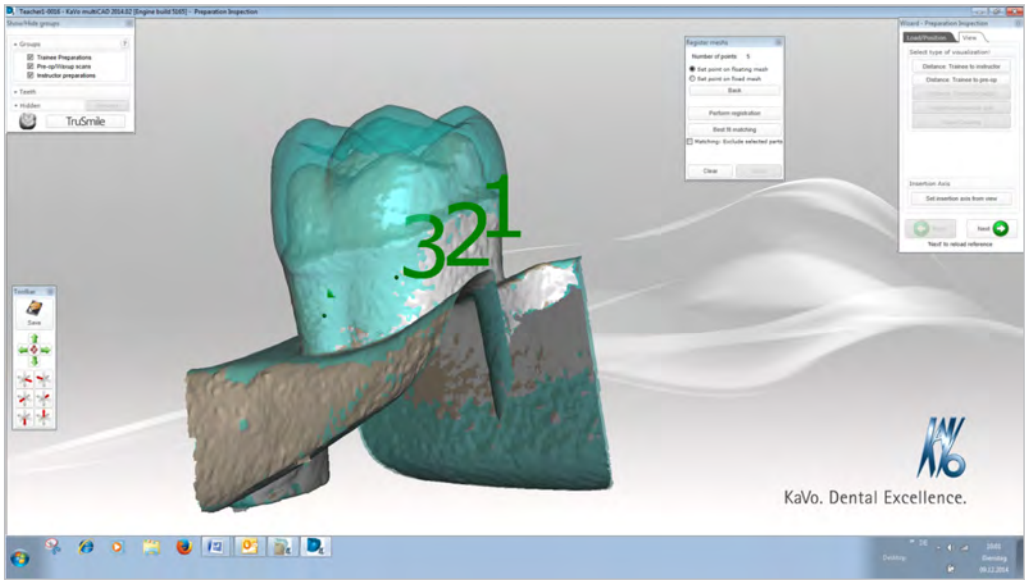


- Right-click on the background to display the context menu.
- Select "Show" to click on the "Register Meshs" palette.



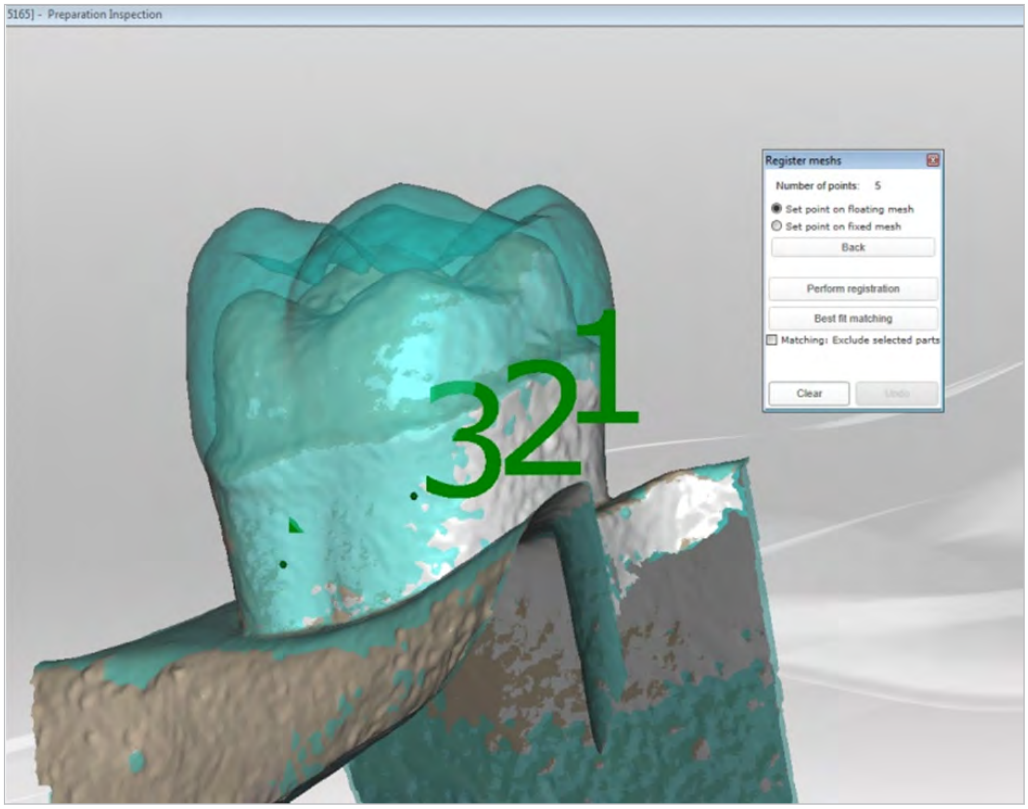
Start the alignment function (Register Meshs)

- In order to position the two scans to coincide as much as possible, place 3-5 double-clicks on **non-**prepared areas nearby.



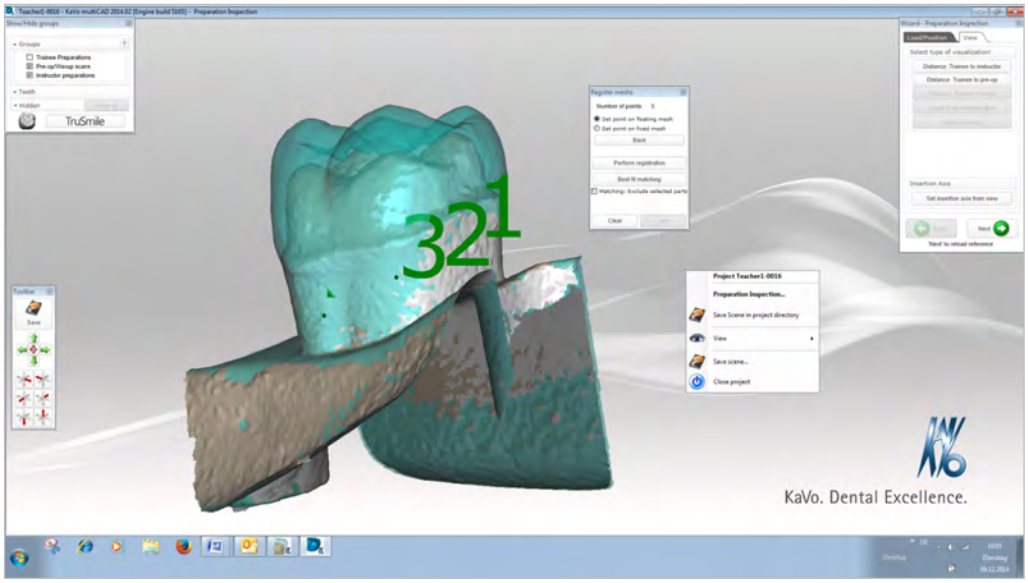
- Then click on the "Perform registration" button.
- Click on the "Best Fit Fitting" button.

⇨ Both scans are automatically made to coincide as much as possible.

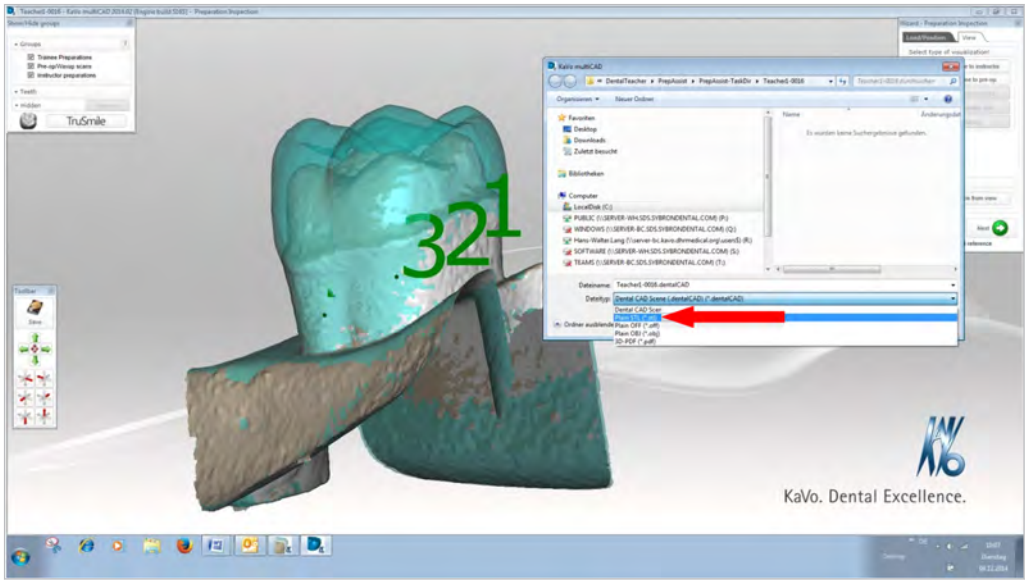


Storing the master preparation coinciding with the original tooth

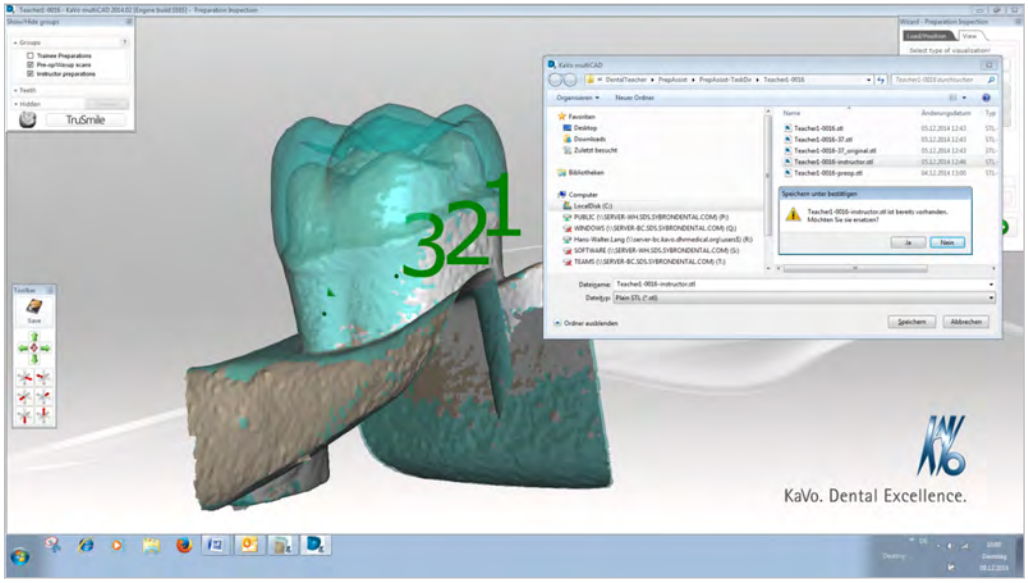
- Right-click on the background to display the context menu.
- Click on "Save Scene".



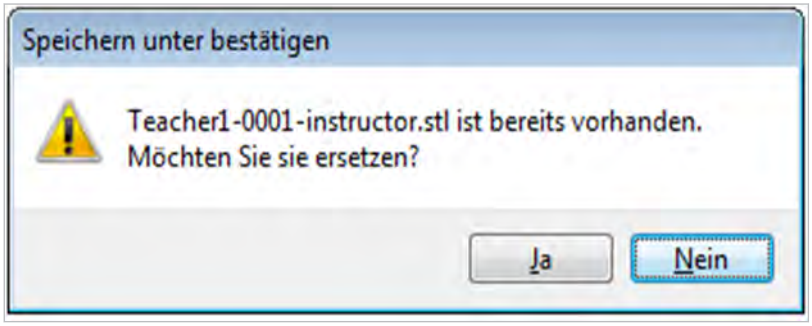
- Use file type: "Plan STL" to invoke the suitable file format.



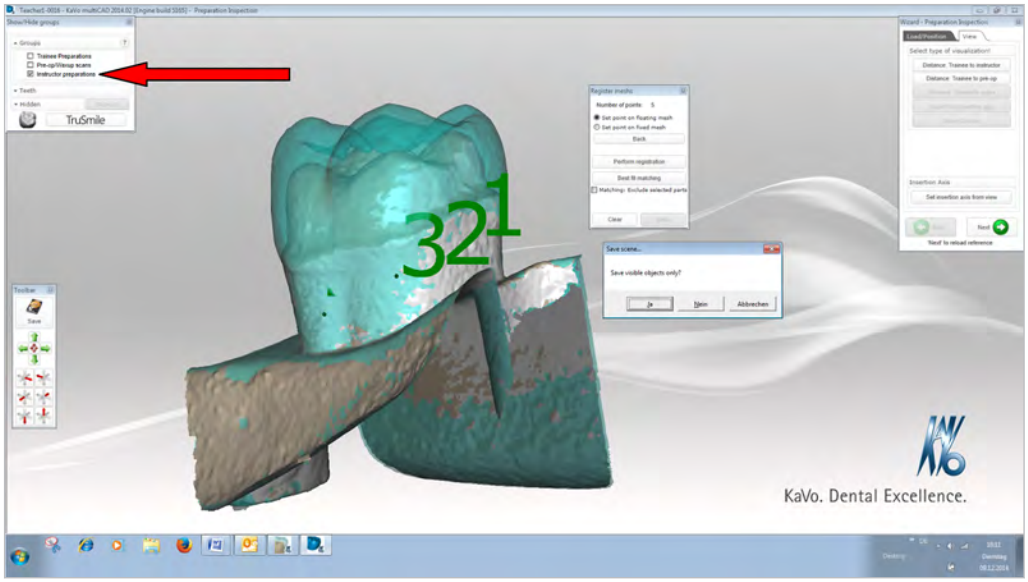
- Click on the "xxxxxx-xxxx-instructor.stl" file and then click on "Save".



- Confirm the subsequent message by clicking on "OK".



- Click on "Display/Hide Groups". Place a checkmark at "Teacher Preparation" only Click on "Save Scene". Confirm "Say Visible Objects Only" by clicking on "Yes".



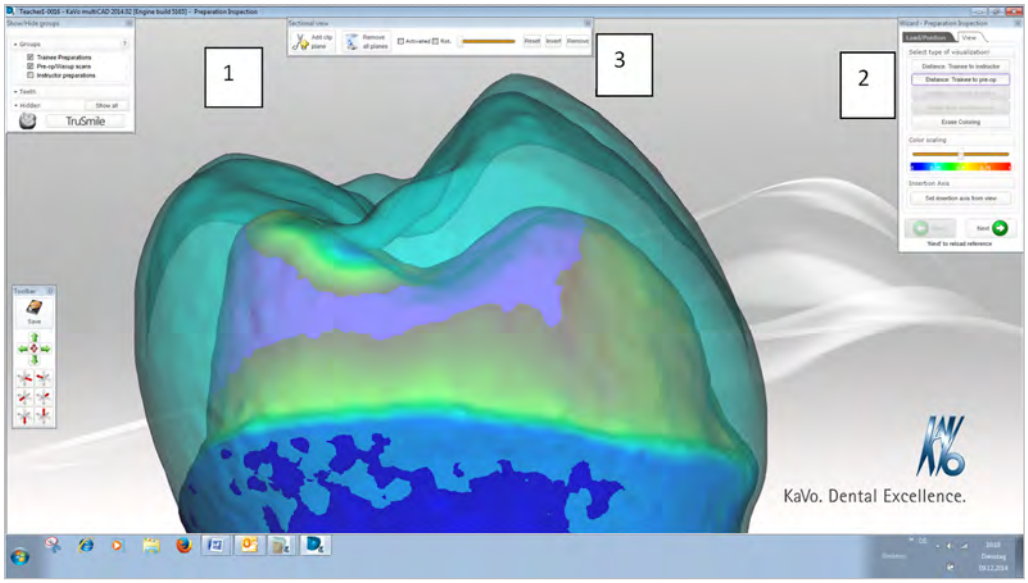
12.1.7 Checking and releasing the task

Note

Tasks can be changed only by the person who created them.

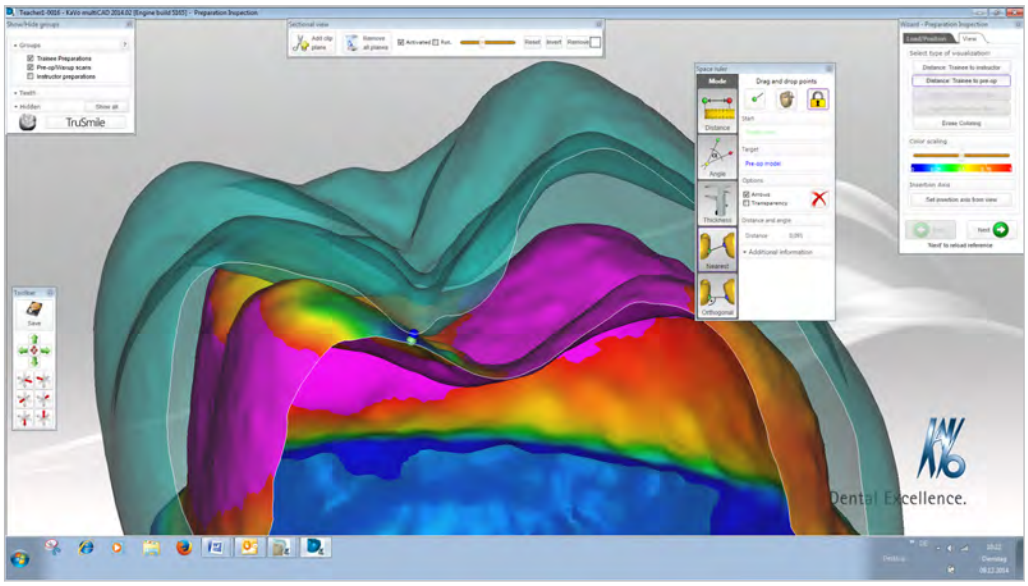
After a new task has been created, it can be inspected precisely once again.
Only "released" tasks are visible to the trainees. The tasks must be released before they can be made available to the trainees.

- Click on the "Inspect Task" button to check on a marked task.
- The Dental Teacher can also be an important aid for comparison of the master preparation to the non-prepared original tooth (sufficient space for intended indication).
  Remove checkmark next to Teacher Preparation ①.
  Place checkmark next to Student Preparation ①.
  Place a checkmark next to Situ/ Waxup Scans ①.
  Click on Distance Trainee to prep op ②.

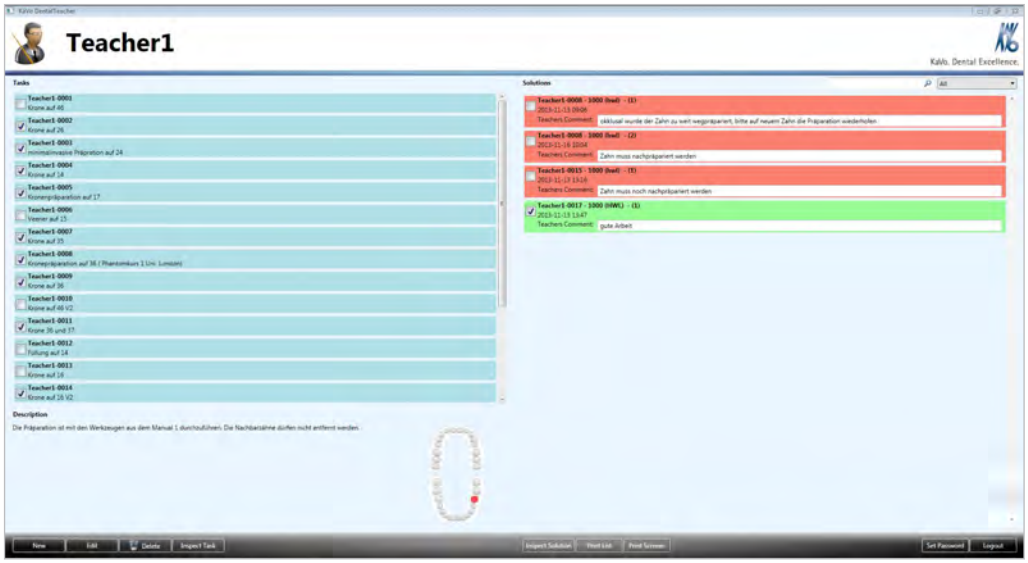


This displays the distances between original tooth and master preparation. If desired, the distances after a cut ③ can also be displayed in metric units.

- For example, 0.095mm (insufficient preparation).



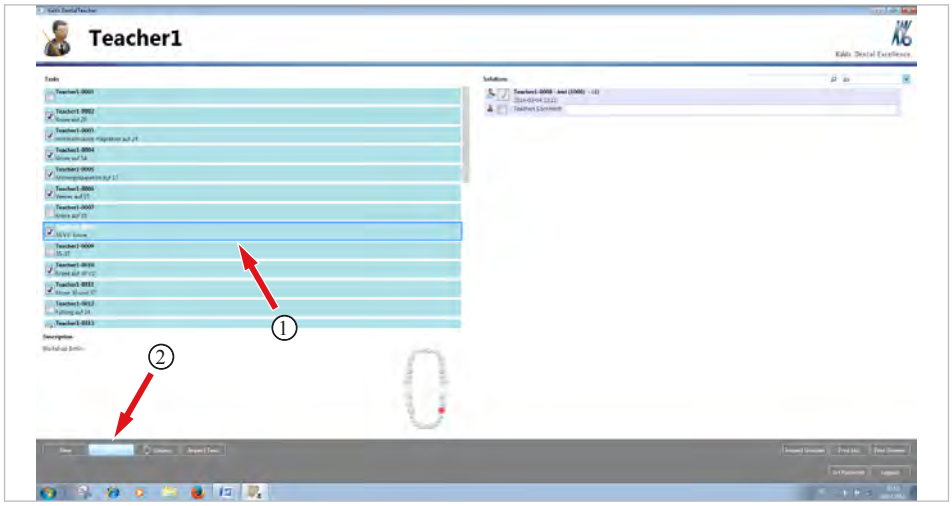
- In the "Task" column of the task list, tick the tasks to be released for the lesson/ course.



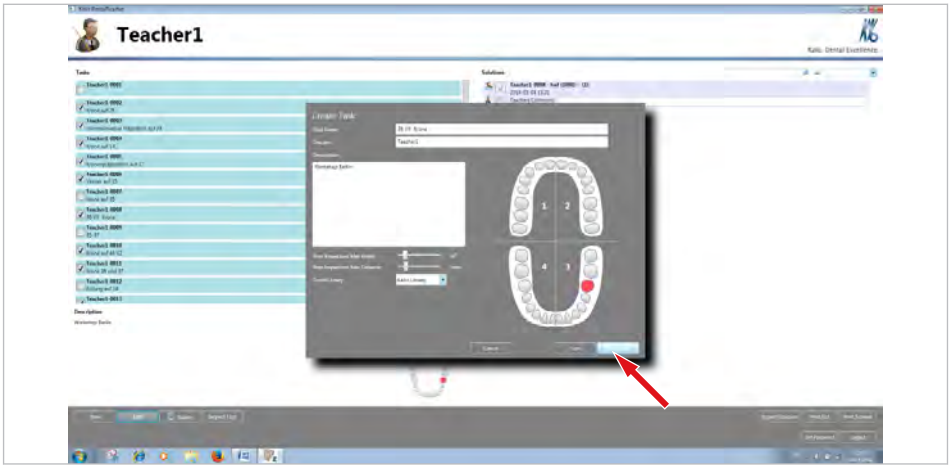
12.1.8 Changing/adapting the master preparation

Master preparations for scanned teeth can be edited in the Dental Teacher user interface for the teacher.
An teacher can use the editing function to change or adapt a previously created master preparation that is assigned to a task.

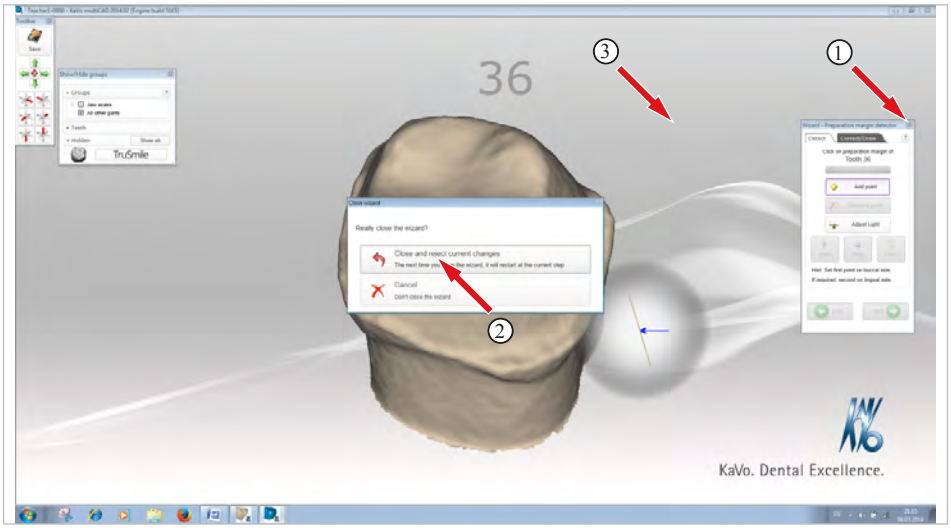
- Mark the task ① for which the master preparation is to be changed.
- Click on the "Edit" ② button to edit the selected task.



- Click on the "Edit scan" button.

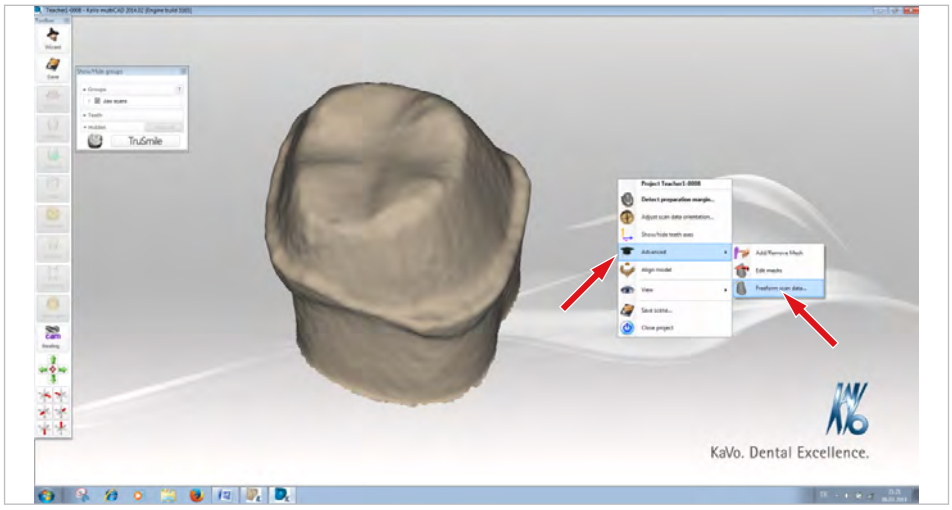


- Close the window, "Wizard - Preparation margin detector", by clicking on "x" ①.
- Click on "Close and reject current changes" ② to close the wizard.

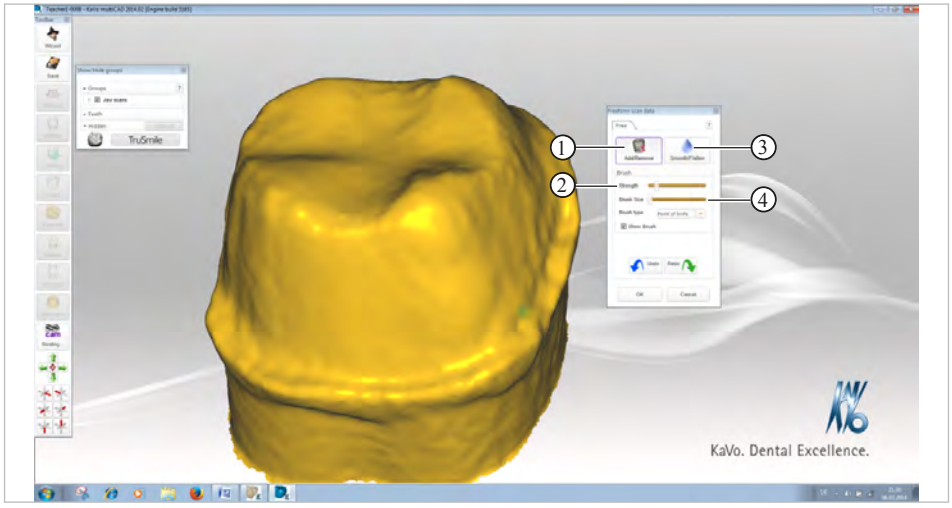


- Right-click on the background ③ to display the context menu.

- Select "Advanced|Freeform scan data ..." to display the "Freeform scan data" palette.



- Click on the "Add/Remove" ① field to undo the preparation in positions in which too much was "prepped away". Press the left mouse button to re-attach material at the cursor position.
- Press the "Add/Remove" ① field and the "Shift" key simultaneously to remove material specifically. Press the left mouse button to remove material at the cursor position.

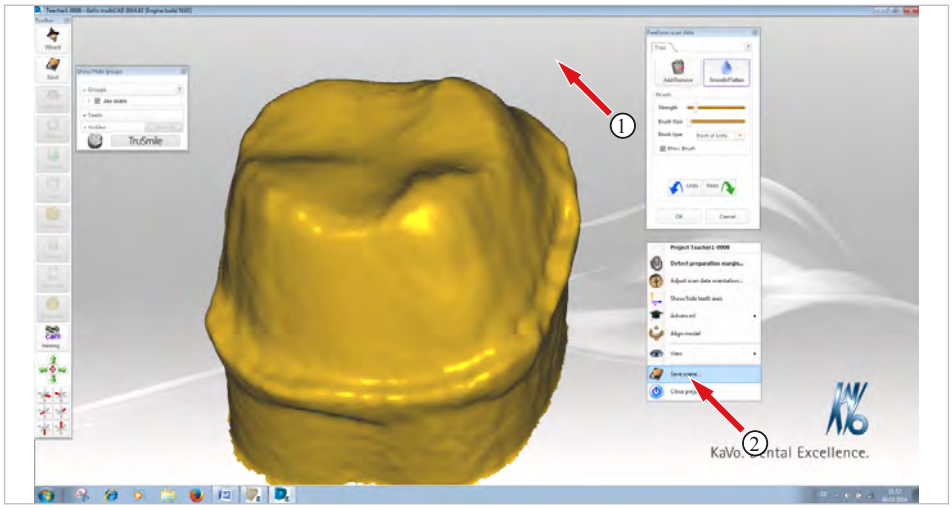


Note

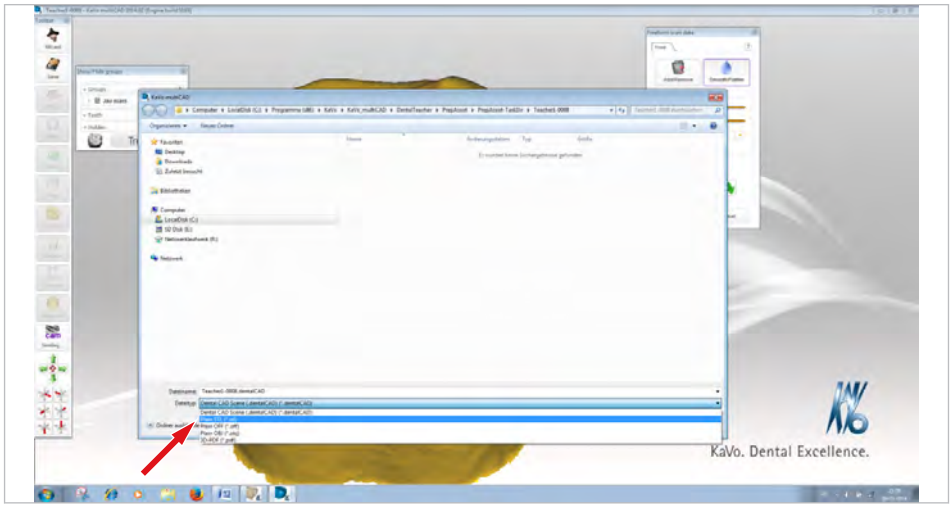
KaVo recommends setting the "Strength" ② slider to approx. 20 % and the "Brush Size" ④ slider to the left limit stop.

- Click on the "Smooth/Flatten" ③ field to smoothen the preparation. Press the left mouse button and move the mouse around to smoothen areas at the cursor position.

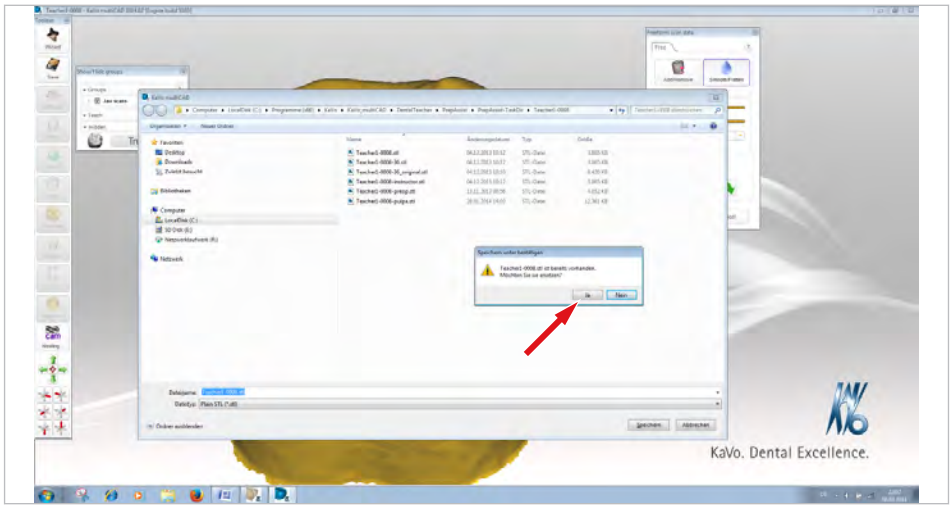
- Right-click on the background ① to display the context menu.



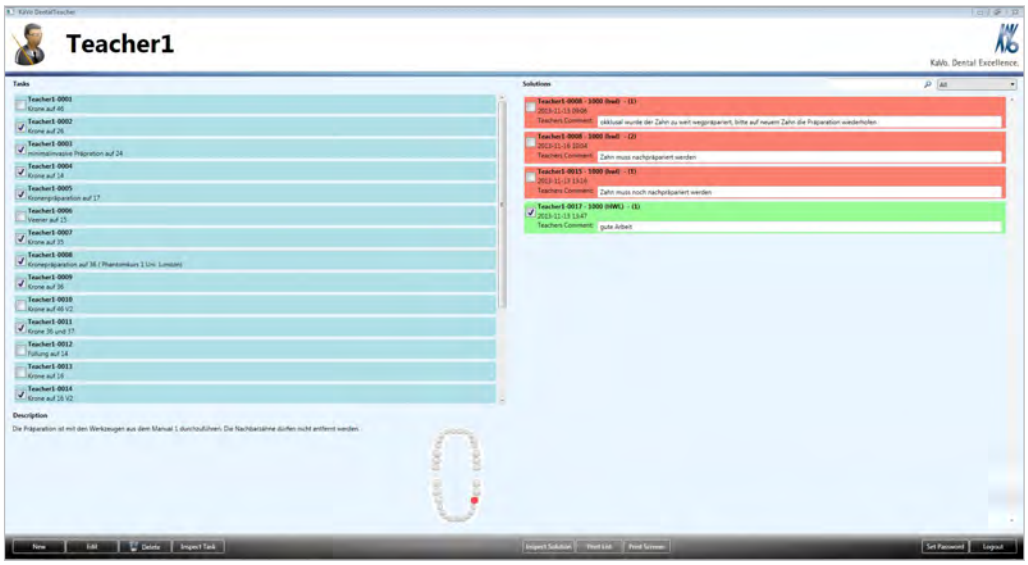
- Select "Save scene" ② to save the adapted master preparation.
- In the "Save As" dialogue, select "Plan STL" from the list as the file type and confirm by clicking on the "Save" button.



- Confirm the message, "File exists already. Do you want to replace it?" by clicking on "Yes" in order to transfer the adapted data to the task.



12.1.9 Assess solution

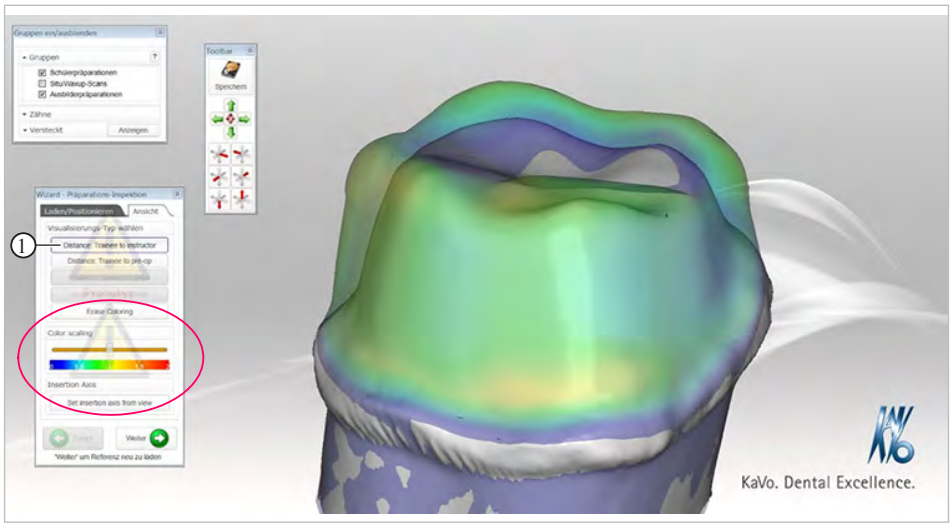


The right side of the Dental Teacher user interface is available for solutions of the trainees. This list is empty until the first scans are performed by the trainees. As soon as a trainee has carried out a scan and released it for assessment by the teacher, the solution is automatically shown in "Solutions" on the solution side as a transmitted scan.

- Click the "Inspect Task" button to assess the trainee preparation.

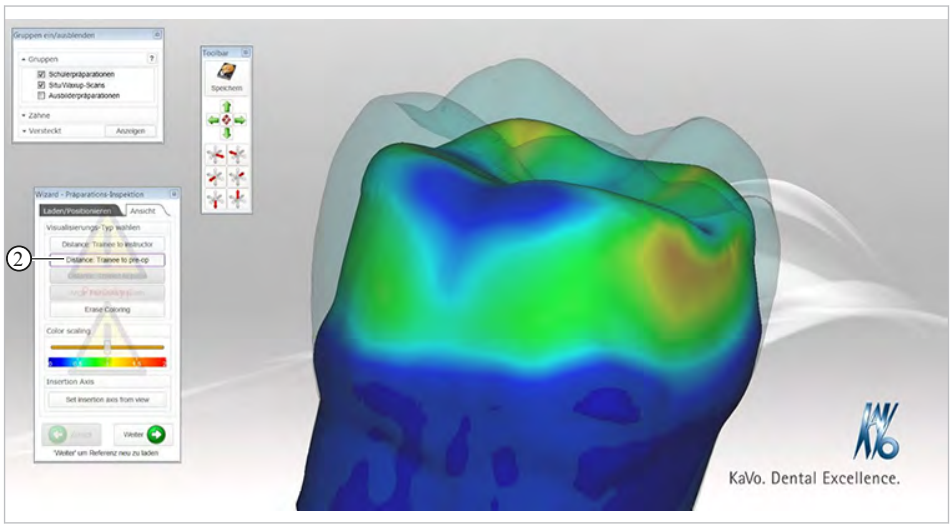
⇨ A new application window KaVo multiCAD "Preparation Inspection" opens.

- Click the "Distance Trainee to instructor" ① button.

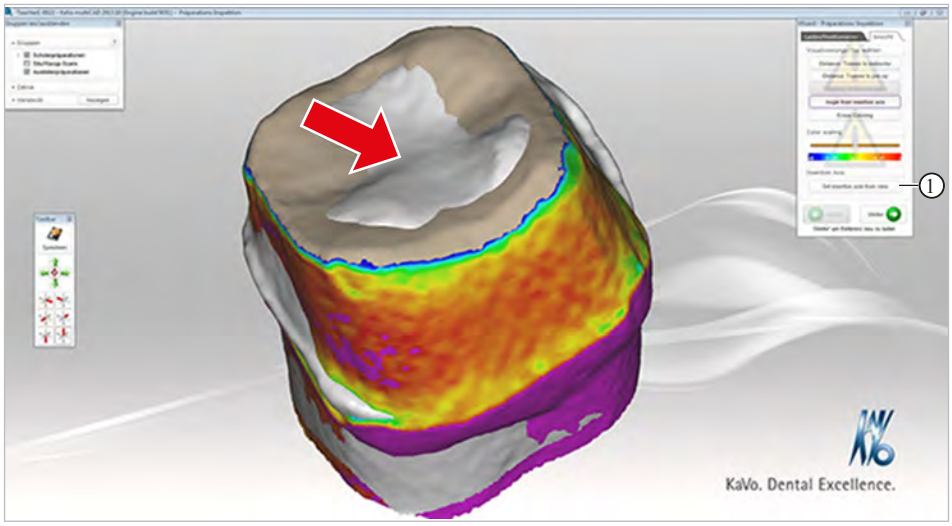


The distance between the preparations is displayed by means of colour gradients. For example, green and blue areas show an acceptable conformity of the master preparation and student preparation.
Yellow and red areas indicate deviation outside the set tolerance.
The prepared tooth can also be compared to the original tooth.

- Press the "Distance Trainee to pre op" ② button.



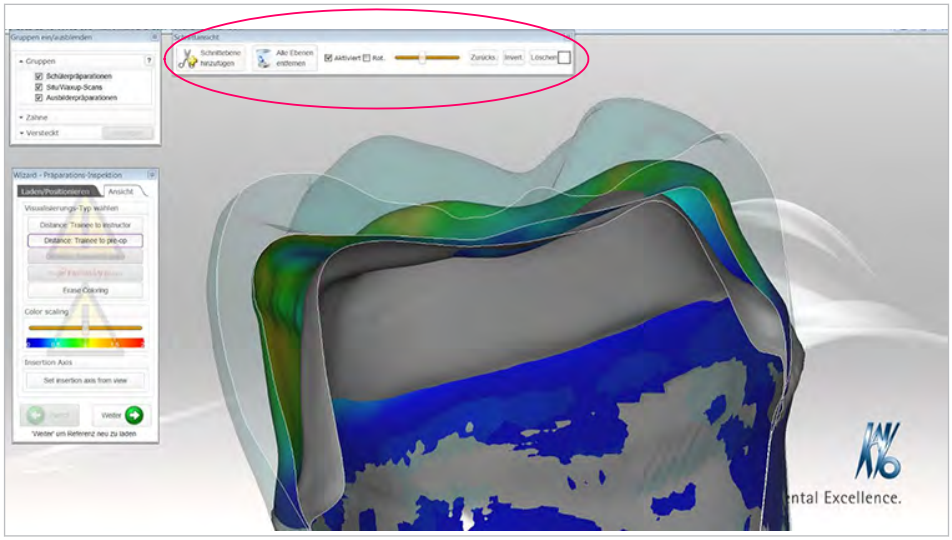
The colour gradient indicates where and to what extent corrections must be made to the preparation. Areas displayed in grey identify a much too far-reaching preparation.



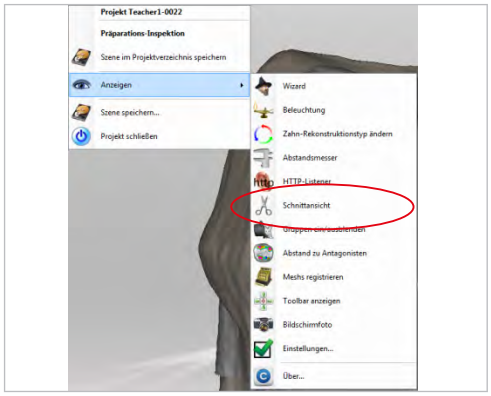
- Rotate the prepared tooth into the required "Direction of Insertion" for the dental prosthesis while holding the right mouse button pressed down.
- Click on the field "Set insertion axis from view" ① to start the angle analysis.

⇨ According to the preparation angle, the areas are displayed in corresponding colours.

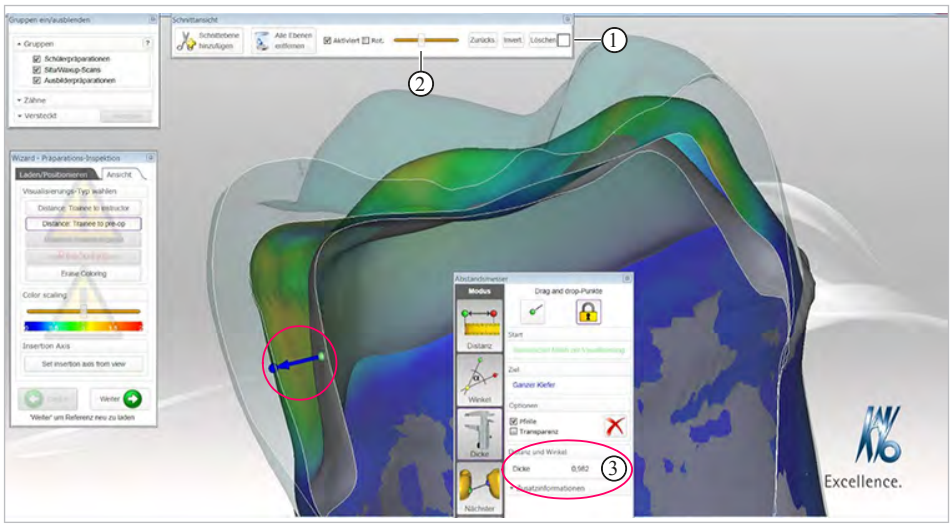
In addition to the colour-coded distance display, a targeted metric distance measurement can be performed in the cross section at any point and any spatial presentation of the preparation.



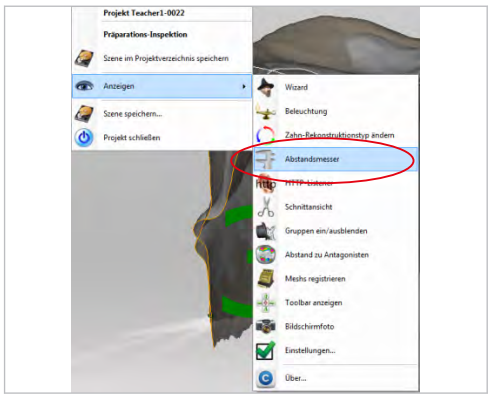
- Right-click on the background to display the context menu.
- Select "Display|Sectional View", to display the sectional view palette.



- In the sectional view ①, set the slide control ② to enable the desired sectional level to be displayed.

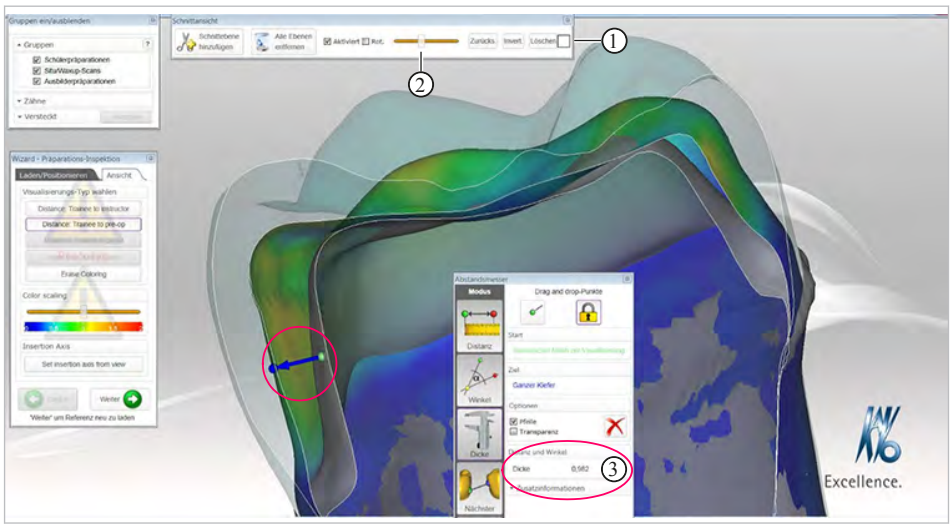


- Right-click on the background to display the context menu.
- "Display|Distance Meter" to display the distance meter palette.



- Click the "Orthogonal" measuring field in the context menu.
- Fix the first measuring point on the inner preparation.
- Set the second measuring point on the outer preparation.

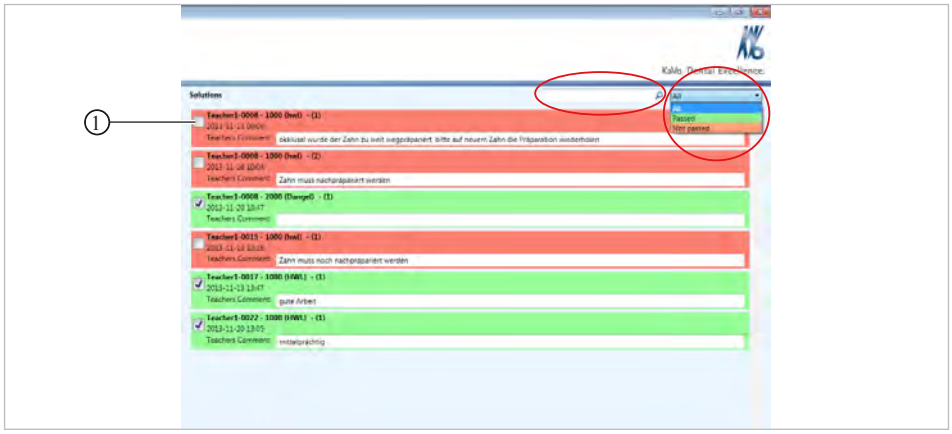
⇨ The distance ③ is displayed.



When the trainee task has been successfully processed, the instructor can mark the task as completed and enter additional comments.

- Place a tick in the list of solutions ① to mark trainee preparations as "successfully performed" (passed).

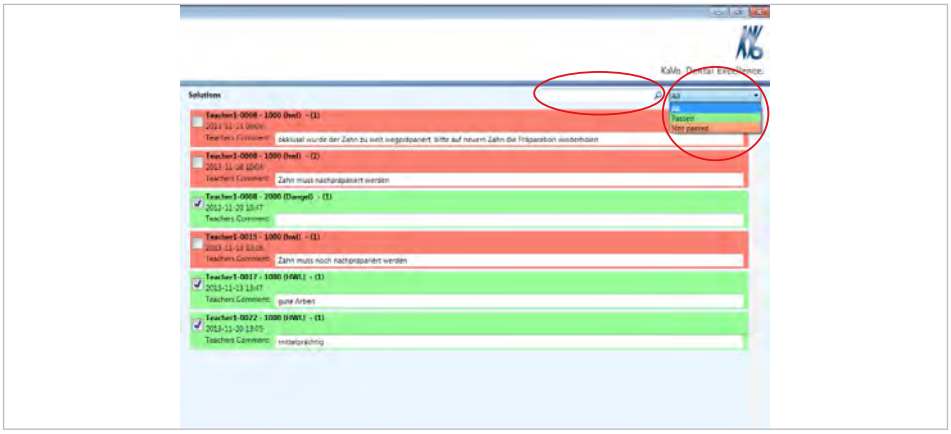
⇨ The task is then shown in green.



- Add a comment and do not place a tick to identify the student task as "not successful" (Not passed).

⇨ The task is then shown in red.

12.1.10 Searching and filtering data



- Enter the search word to search in the solution list for data sets of a specific trainee.
- Select filter to display all solutions that have been assessed as successful (Passed) or unsuccessful (Not passed).

12.1.11 Print

Requirement
Printer/printer drive is connected/installed.

- Click the "Print list" button to print a list of the solutions. A limited list can be printed by using the search or filter function.

12.2 Student

12.2.1 Starting-up the Dental Teacher

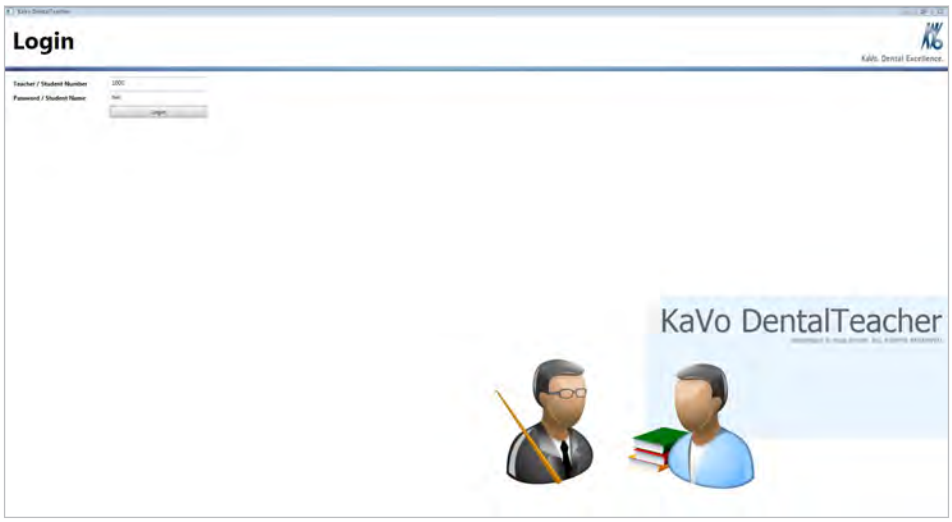
Requirement
The blue dongle is connected to the Dental Teacher workstation.

KaVo ARCTICA AutoScan is switched on and ready for operation.

Both USB connections between the Dental Teacher workstation and KaVo ARCTICA AutoScan are connected.

- Double-click on the "Dental Teacher" icon on the desktop to start-up Dental Teacher.

⇨ The same registration screen is shown for both instructors and trainees.



- Register as Student using the name and student number (matriculation number). Please note: Spaces must be treated like characters, while case sensitivity is irrelevant.
- Click the "Login" button.

⇨ This displays the "Enter Password" input field for the freely selectable password.

- Enter the desired password in the input field and confirmed by clicking on "OK".

⇨ This displays the user interface for "Student".

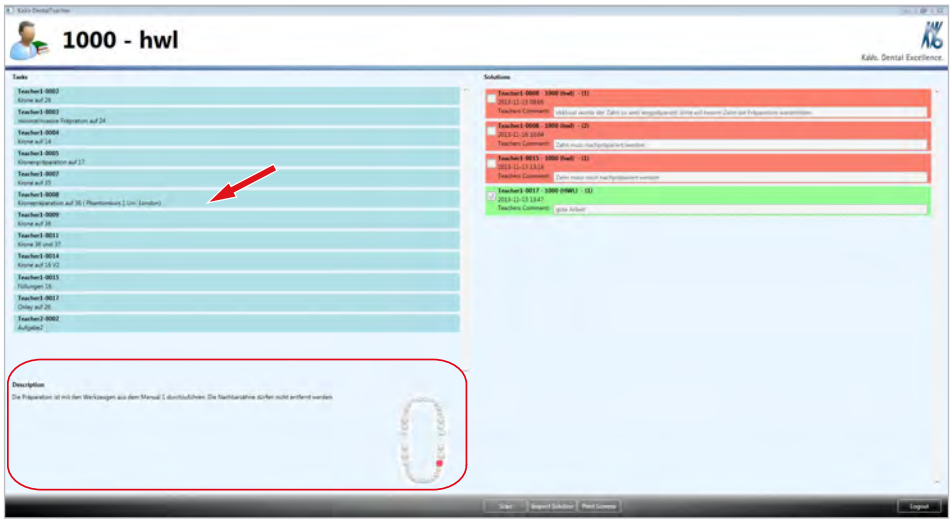
Dental Teacher user interface for trainees

① List of tasks	② List of solutions or edited/assessed tasks
③ Scan	④ Inspect Solution
⑤ Print Screens	⑥ Logout

- Click on "Logout" to close the Dental Teacher.

12.2.2 Selecting task

- Select the task to be processed from the left task list.



- Carefully read the description of the task.

12.2.3 Carrying out the preparation

The preparation is performed conventionally on the patient simulator by trainees.

12.2.4 Scanning the preparation

- Remove the prepared tooth from the study model of the patient simulator and insert it into the model holder of the KaVo ARCTICA AutoScan.

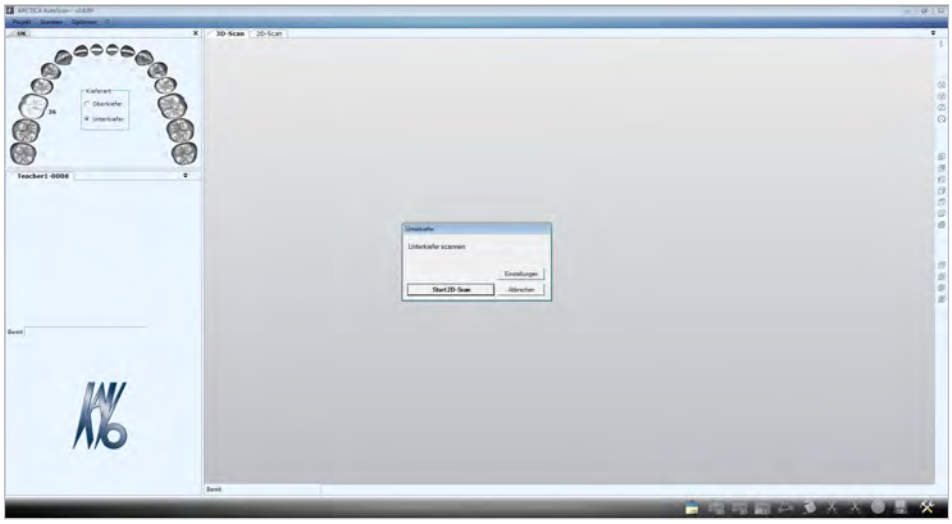
See also:

Instructions for use ARCTICA AutoScan chapter titled "Inserting the model into the scanner"

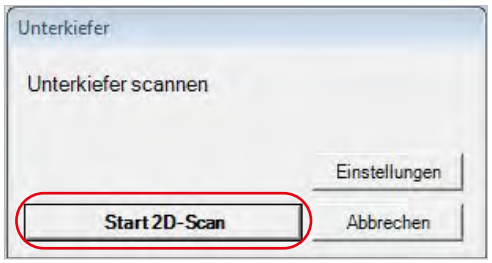
- Close the hood on the ARCTICA AutoScan.

- Click the "Scan" button to start the scanning process with ARCTICA AutoScan.

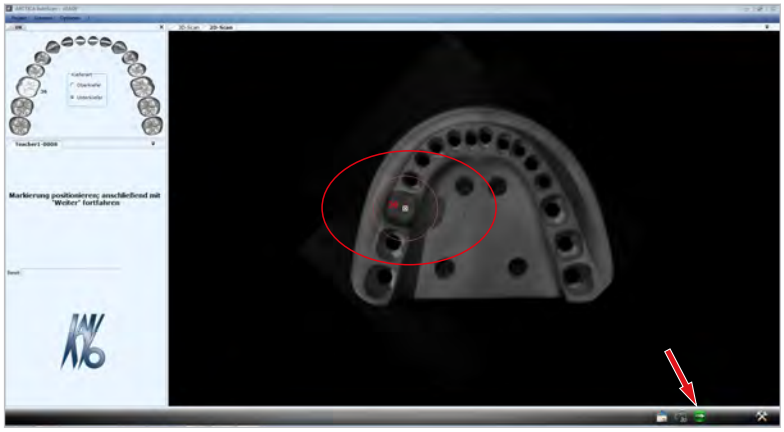
⇨ A new application window ARCTICA AutoScan is displayed.



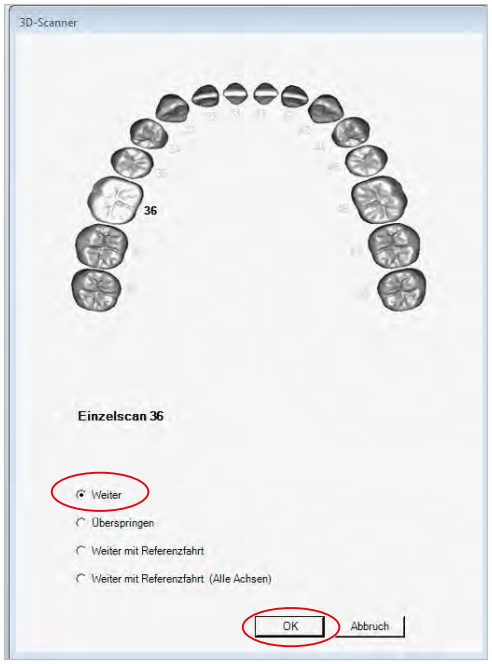
- Click the "Start 2D-Scan" button.



- Readjust the marking if necessary and click "Next" .
  If the tooth prepared by the trainee is displayed outside the scan marking, the tooth has been fixed incorrectly in the scan image.



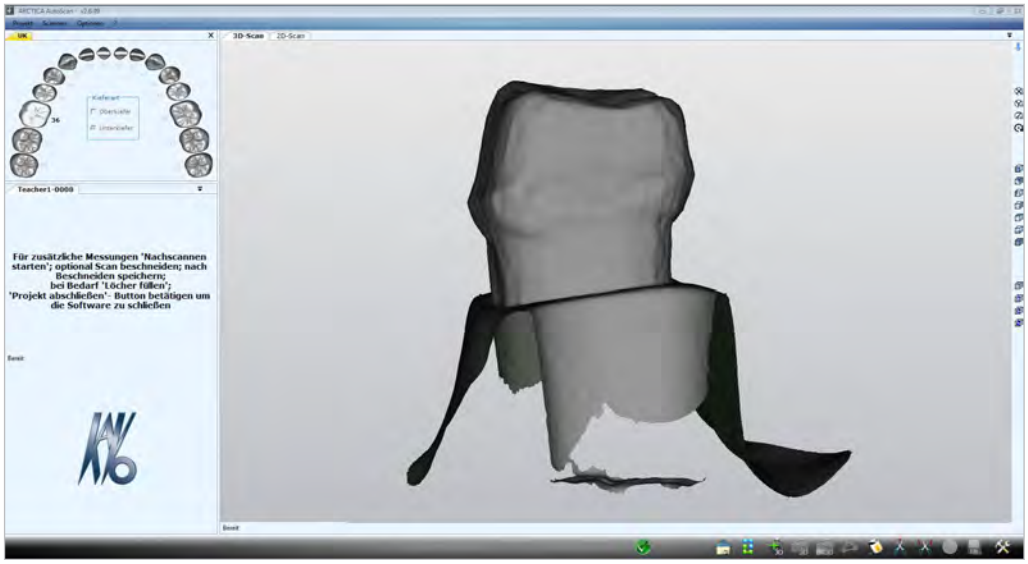
- Confirm dialog with "OK".



⇨ The scan is carried out automatically and a 3D display of the scanned model tooth is shown.

- If necessary, remove superfluous areas with scissors.
  For correctly positioned display of the individual scans, sufficient non-prepared areas must be available. Excessive cutting can lead to a faulty display.

- Set points using the left mouse button to form any shape you wish and then close the shape and cut out the area using the right mouse button.



- Click "Save" to save the scan.

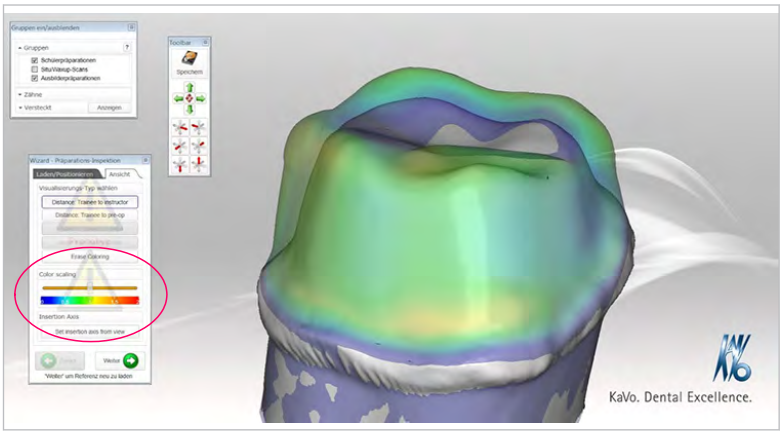
- Finalise project with a green tick.

See also:

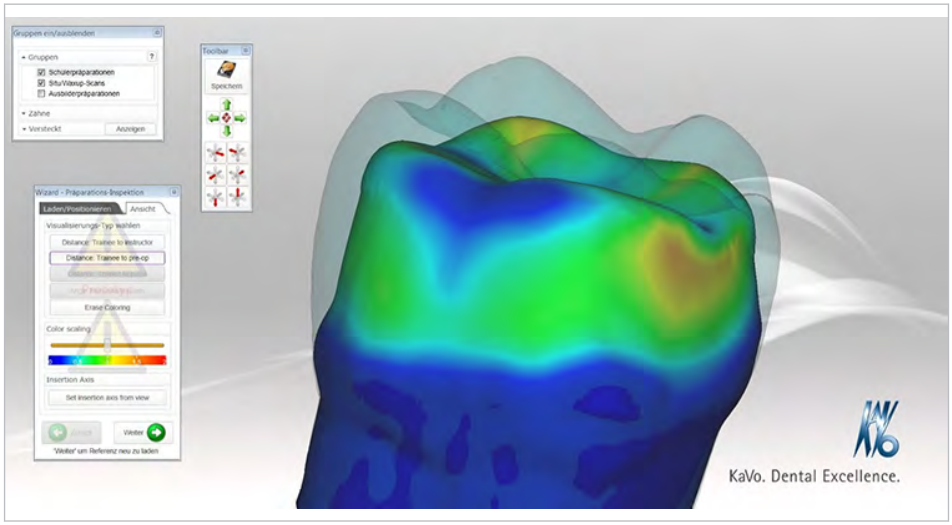
IfU KaVo ARCTICA AutoScan

12.2.5 Show trainee preparation

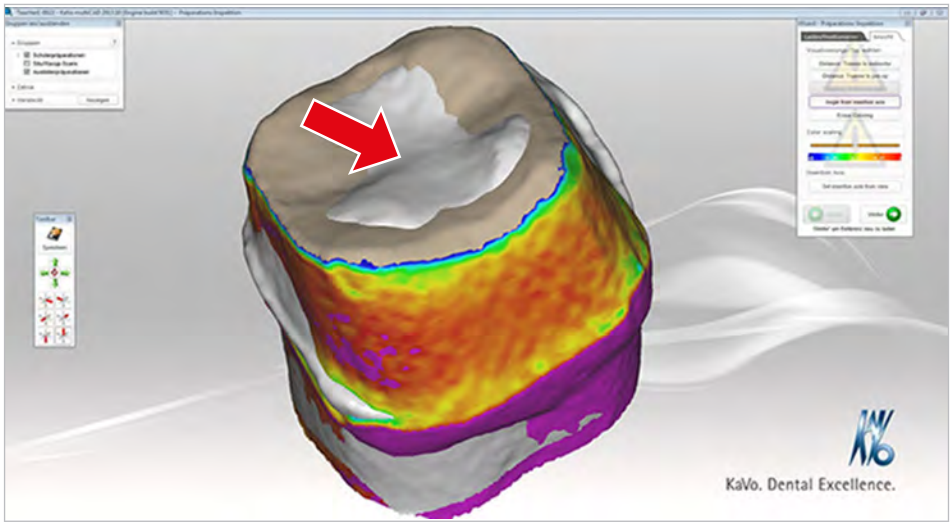
- Click the "Inspect Task" button to assess the trainee preparation.



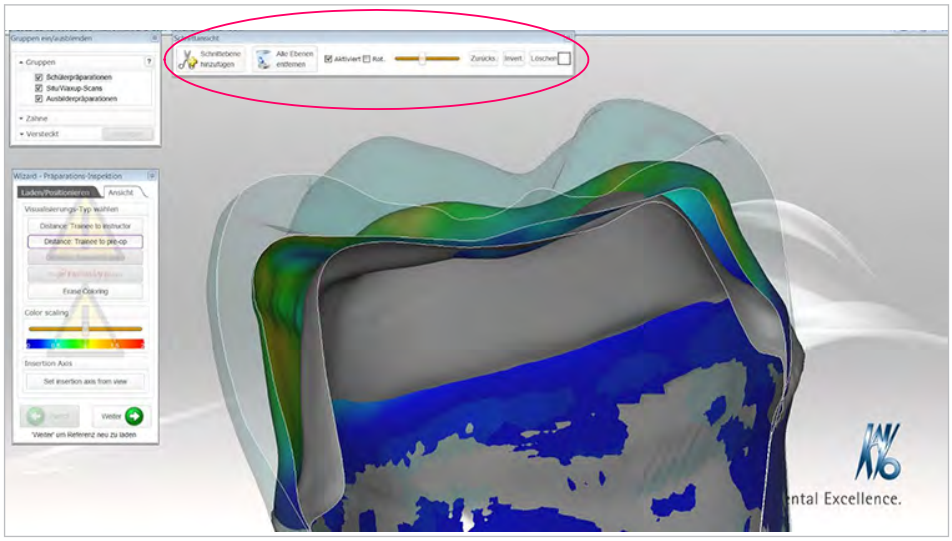
The distance between the preparations is displayed by means of colour gradients. For example, green and blue areas show an acceptable conformity of the master preparation and student preparation.
Yellow and red areas indicate deviation outside the set tolerance.
The prepared tooth can also be compared to the original tooth.



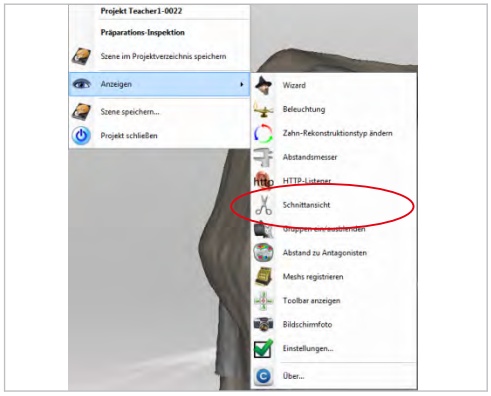
The colour gradient indicates where and to what extent corrections must be made to the preparation. Areas displayed in grey identify a much too far-reaching preparation.



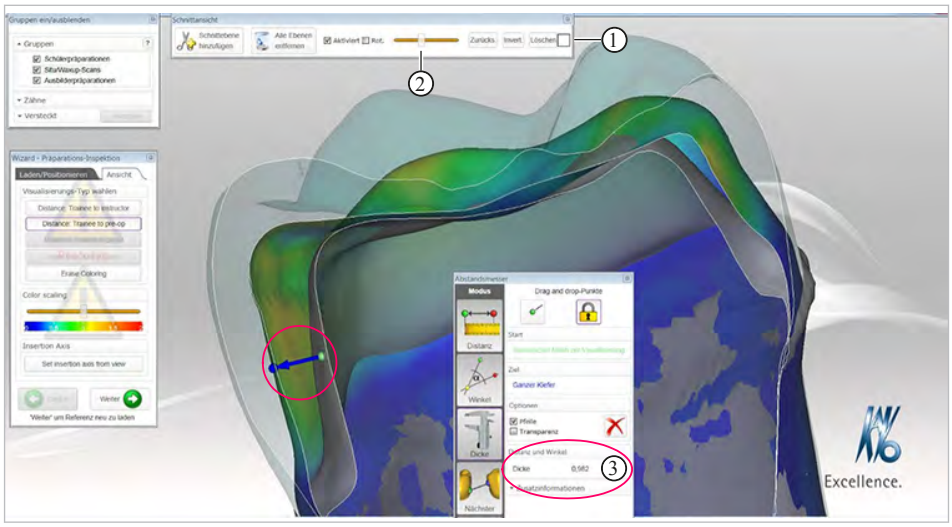
In addition to the colour-coded distance display, a targeted metric distance measurement can be performed in the cross section at any point and any spatial presentation of the preparation.



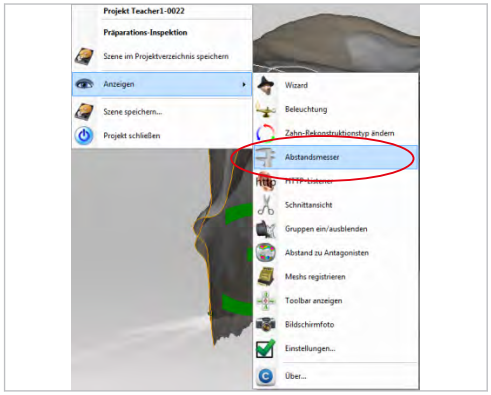
- Right-click on the background to display the context menu.
- Select "Display|Sectional View", to display the sectional view palette.



- In the sectional view ①, set the slide control ② to enable the desired sectional level to be displayed.

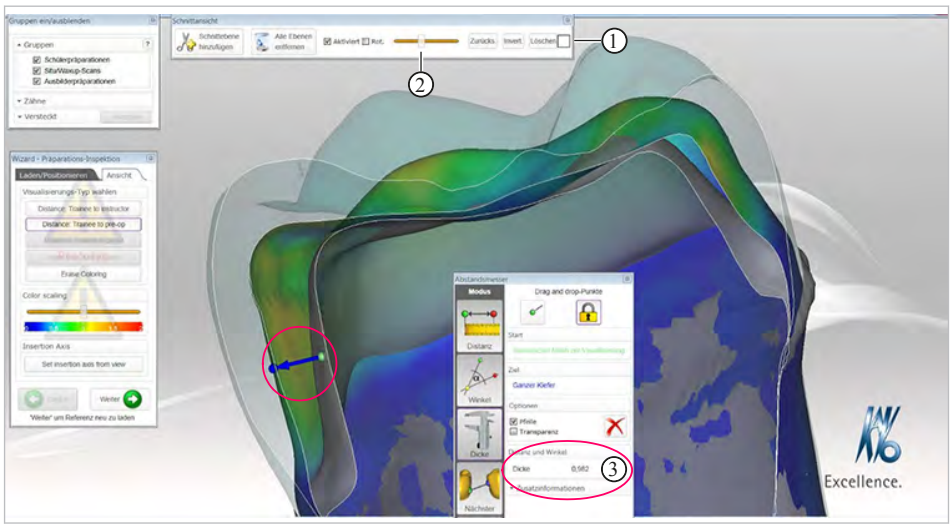


- Right-click on the background to display the context menu.
- "Display|Distance Meter" to display the distance meter palette.



- Click the "Orthogonal" measuring field in the context menu.
- Fix the first measuring point on the inner preparation.
- Set the second measuring point on the outer preparation.

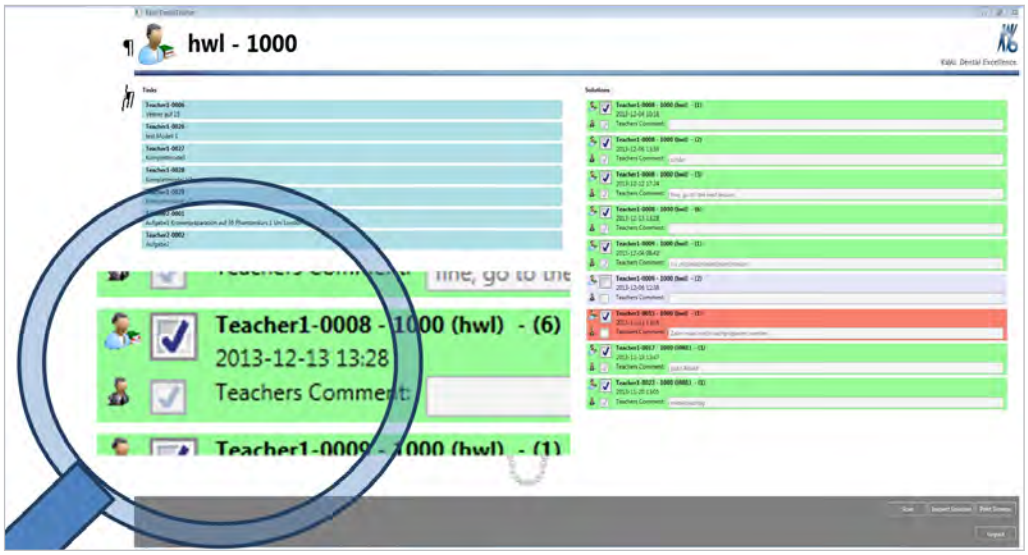
⇨ The distance ③ is displayed.



12.2.6 Release trainee preparation

To reduce the teachers' workload, only preparation solutions released by the trainee are shown on the teacher's PC monitor. A trainee can release a task by placing a tick on the corresponding solution.

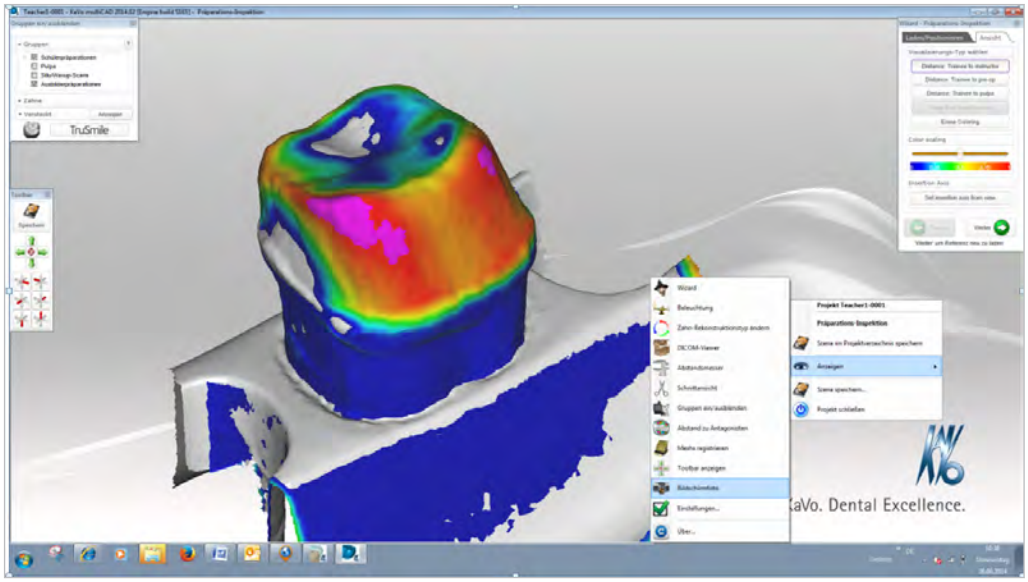
Note
Once released, a task cannot be "un-released" by a trainee again.



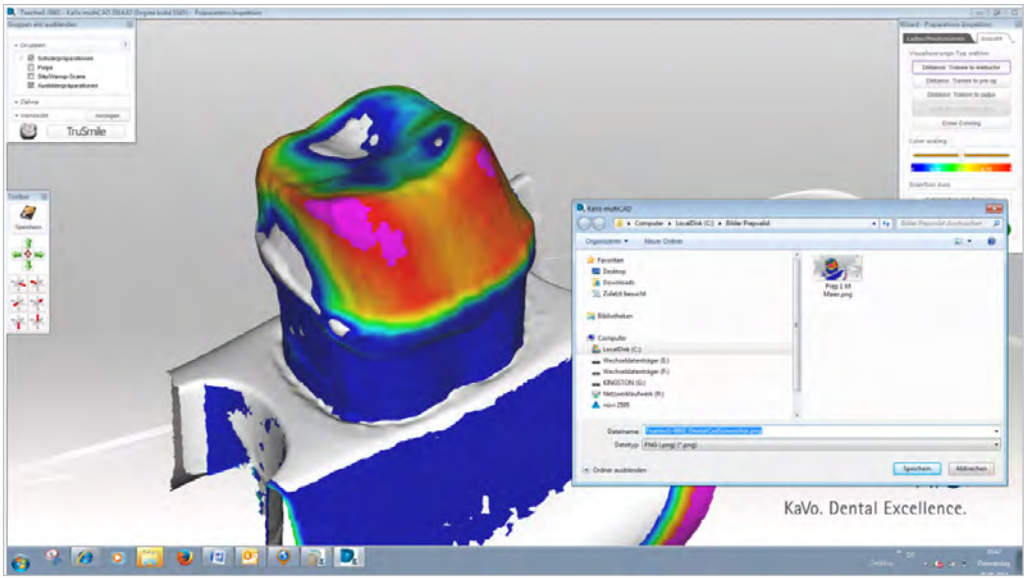
12.2.7 Print trainee preparation

Make screenshot

- Right-click on the background to display the context menu.
- Select "Show/screenshot" to produce a screenshot.

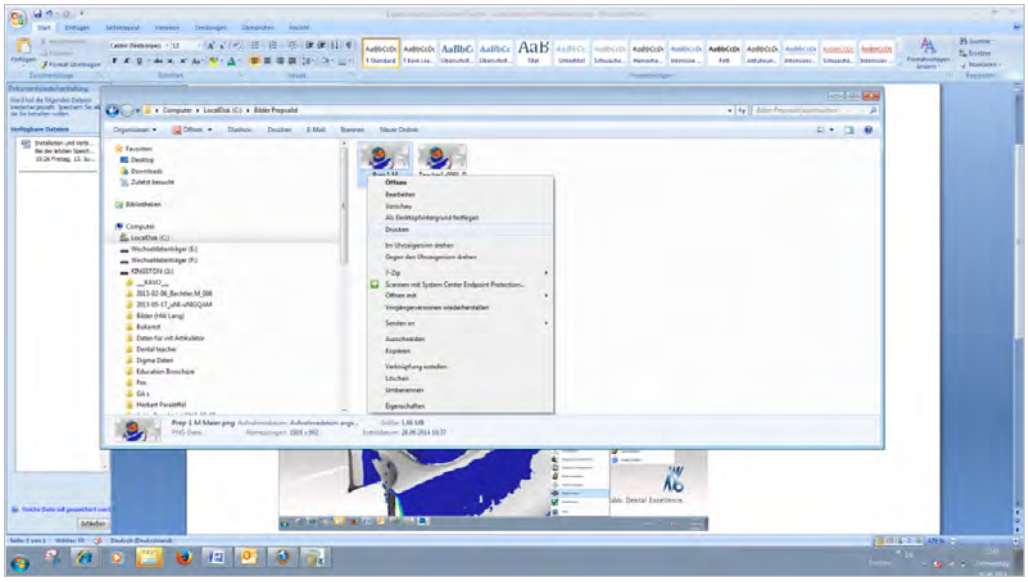


- Firstly, create a folder as desired for saving the screen image.

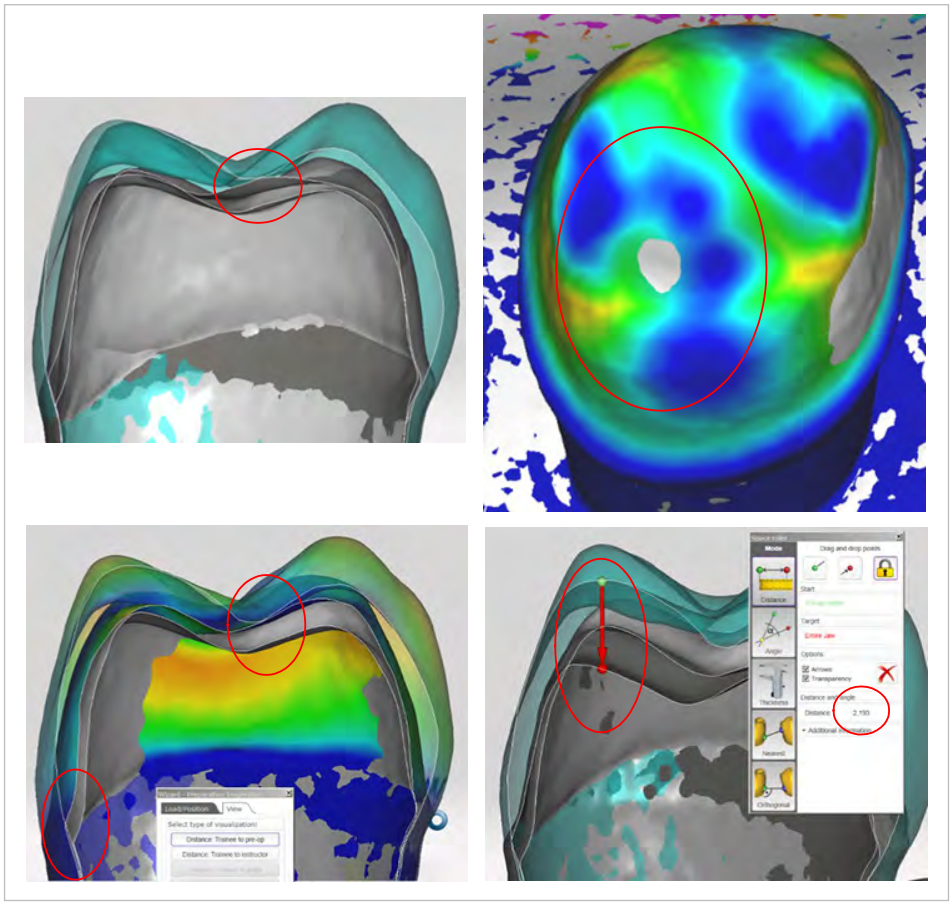


Print trainee preparation

- Open a folder containing preparations saved by a trainee,
- Right-click on the printer to display the context menu.
- Press on the Print button



12.3 Typical preparation errors



Examples of preparation errors

12.4 Installing and connecting the trainee PC to the Dental Teacher scanner PC

Note
PC installation and linking may be done only by the system administrator of the training facility.

The Dental Teacher PREPvalidation Mat. no. 1.010.6350 or Dental Teacher Professional Mat. no. 1.010.7560 software can also be installed on additional PCs.
The corresponding USB dongles included in the delivery are needed for operation.

Recommended minimal system requirement for the PC

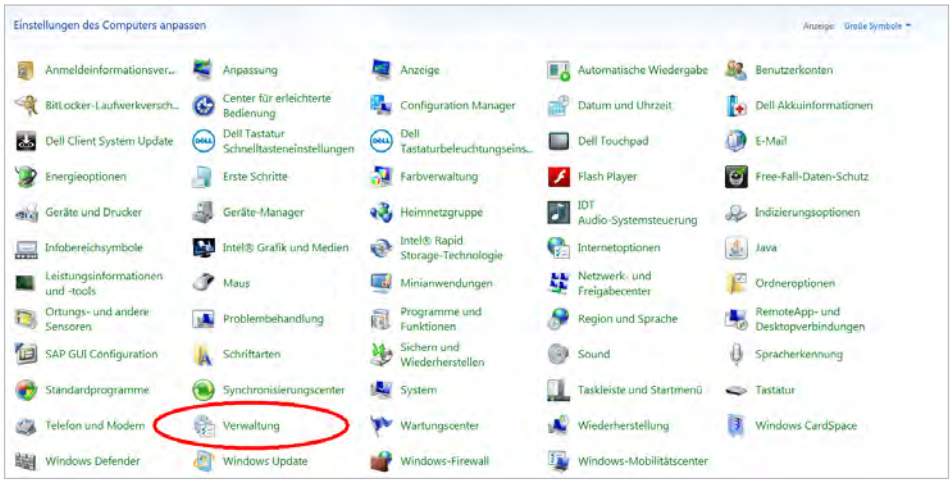
- Operating system Windows 7 Ultimate 64® Bit, 4 GB RAM
- Intel Core 2 Quad CPU Q 9550 2.83 GHz or higher
- High performance 3D graphics card with at least 1 GB RAM, e.g. GeForce
- 320 GB hard disk

See also:
9 Installing the Dental Teacher Software, Page 26

Step 1 Create user called Student on the scanner PC

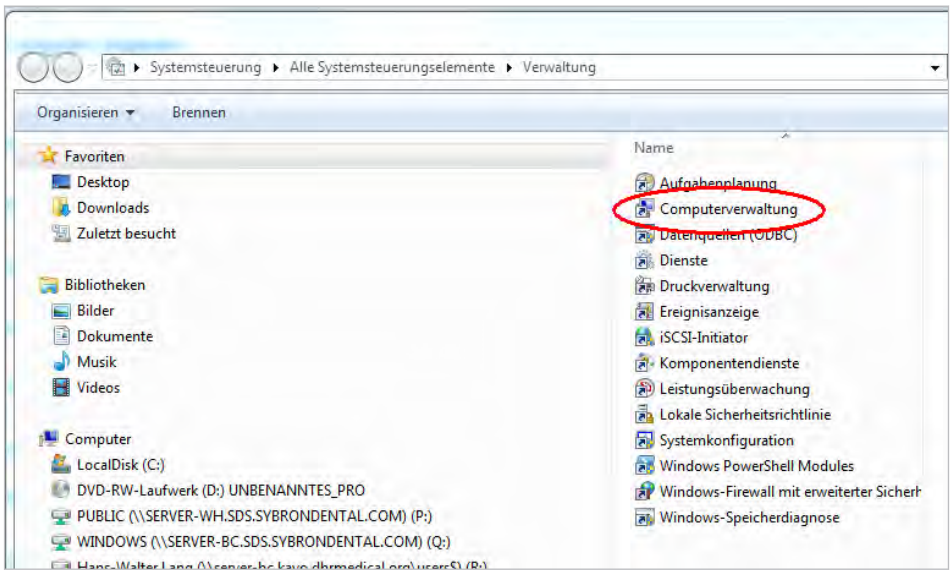
- Open the system control of the scanner PC and click on the "Administration" folder

⇨ This displays the "Administration" folder

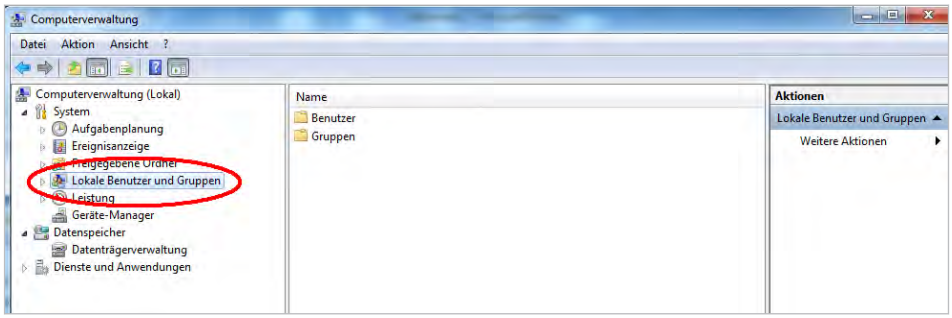


- Click on the "Computer Administration" folder

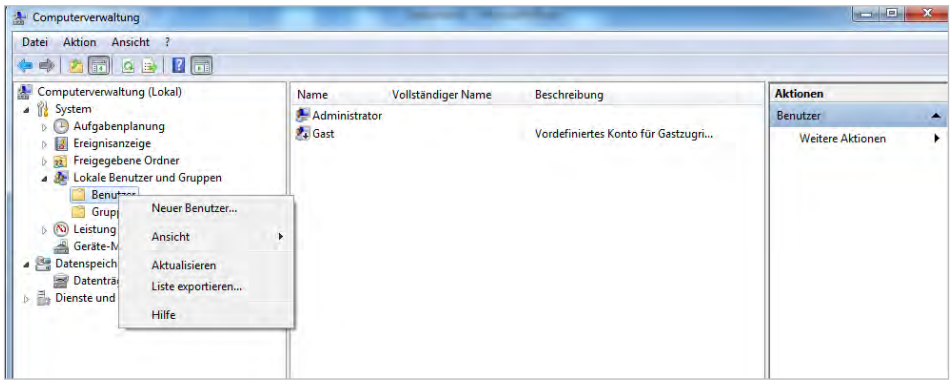
⇨ This opens the Computer Administration view



- Click on "Local Users and Groups" to create new user.



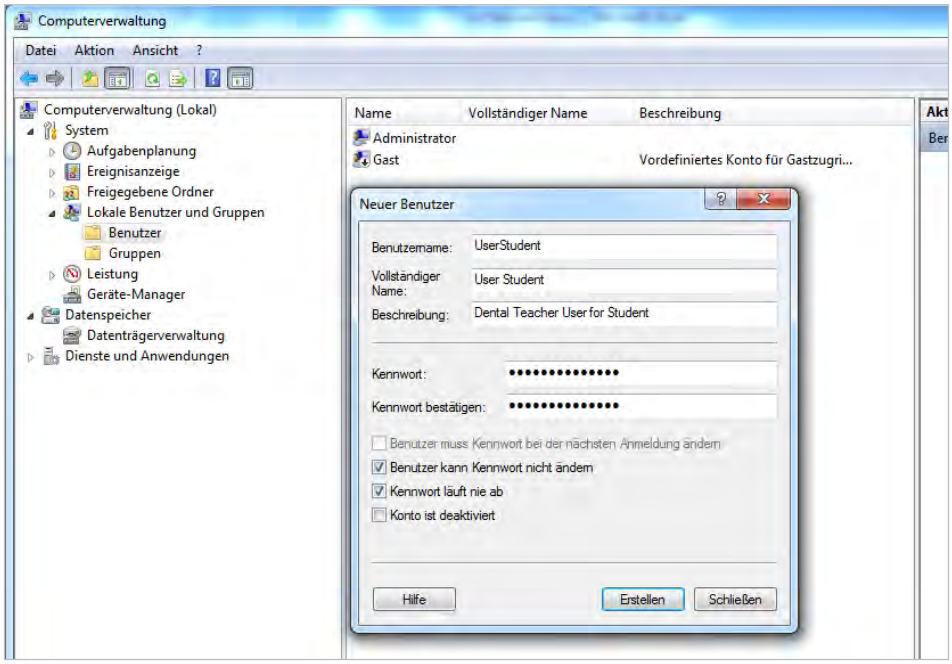
- Right-click on the Users folder to create new user.



Complete the "New User" mask.

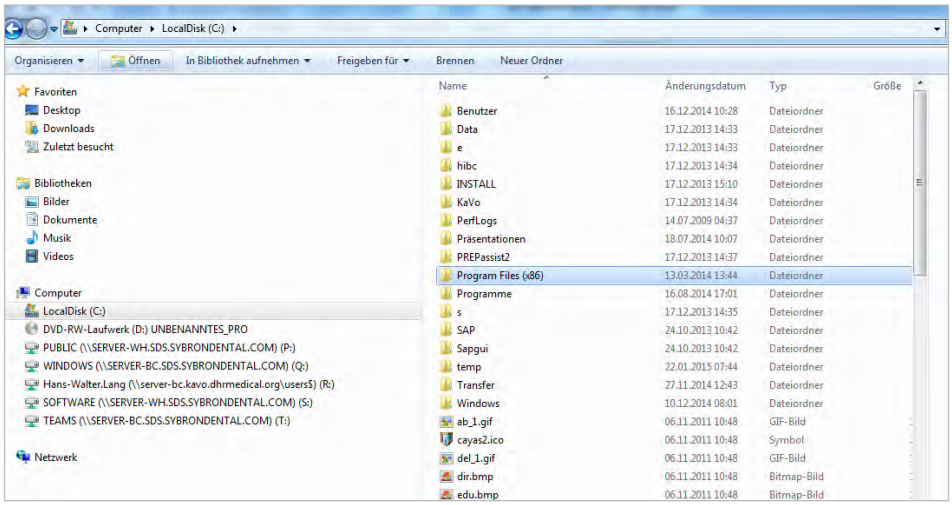
1. User name: UserStudent
2. Full name: User Student
3. Description: Dental Teacher User for Student
4. Password: Arbitrary (e.g: password+- 1234!)
5. Place a checkmark next to "User Cannot Change Password"

6. Place a checkmark next to "Password does not Expire"



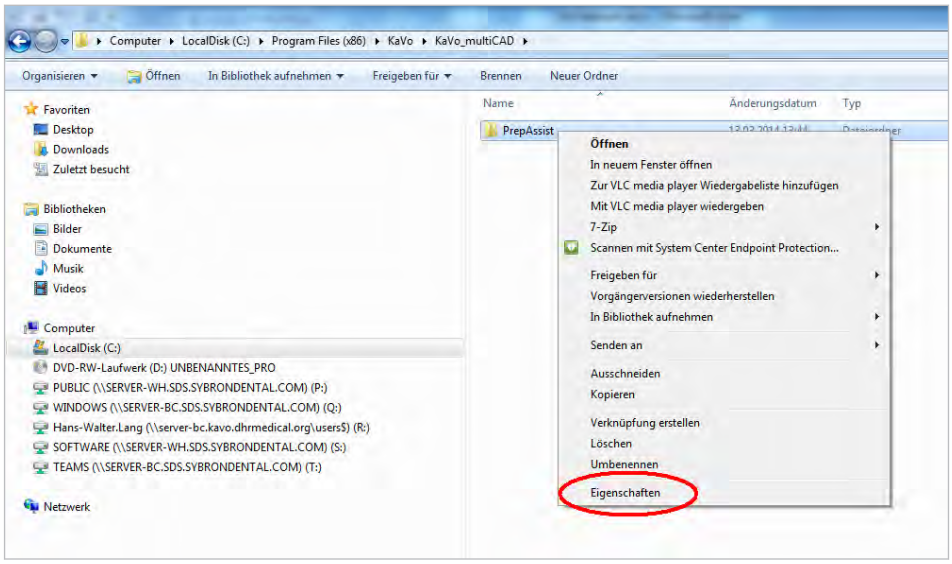
Step 2: Create path on the scanner PC

- Open Program Files(x86) in drive (C)

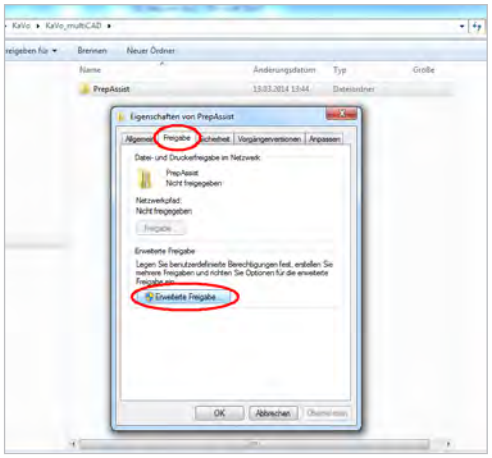


- Open KaVo folder
- Open KaVo_multiCAD folder
- Right-click on PrepAssit to open the context menu.

- Click on Properties

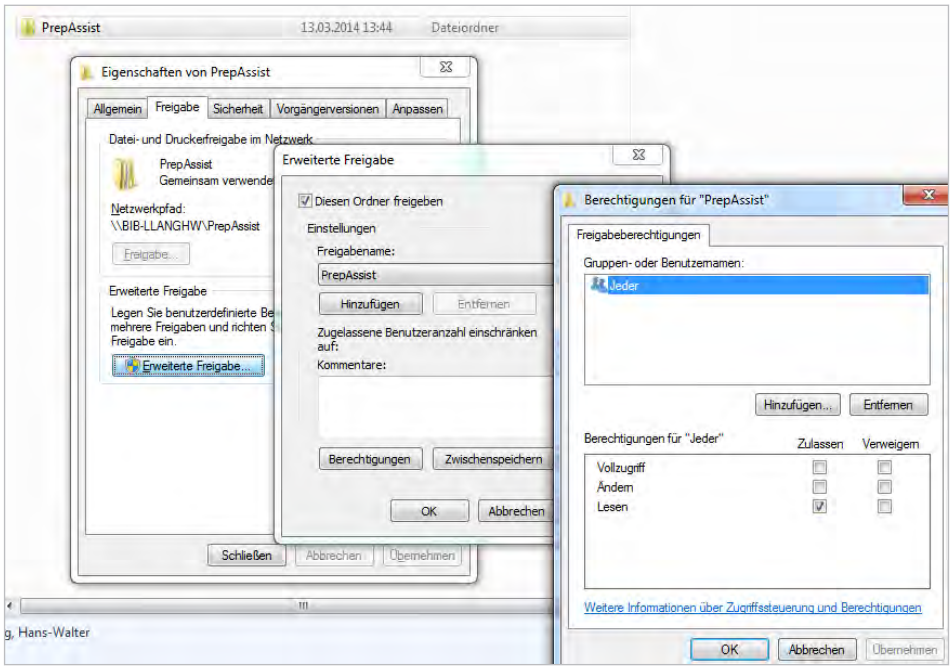


- Click on Release
- Click on Extended Release



- Place a checkmark next to "Release this Folder" (PrepAssist).
- Click on "Authorisations"
- Click on "Any"
- Place checkmarks at "Authorisations for Any" and "Permit Reading"

- Confirm by clicking on "OK"

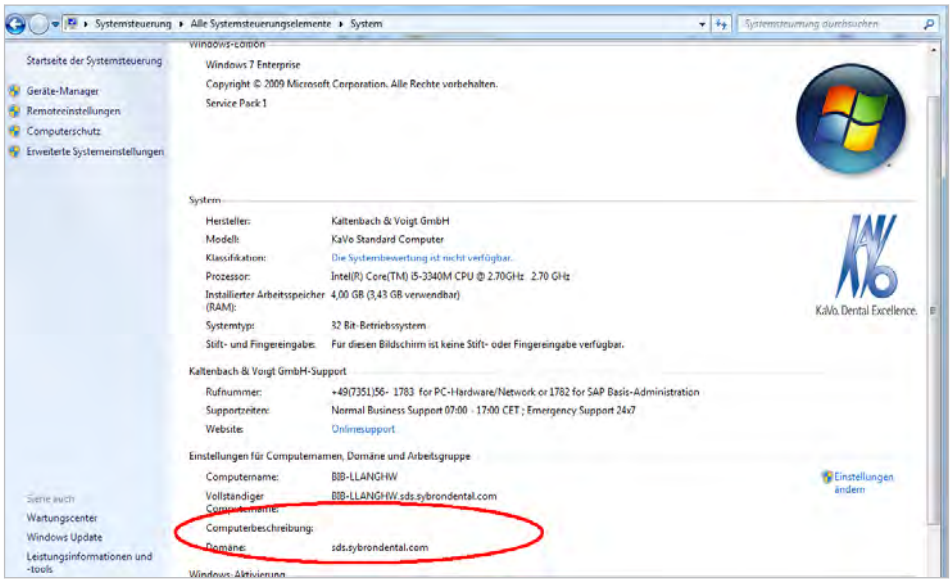


Note

Please note: The Dental Teacher scanner PC and the students' PCs must be part of the same network! Switch from "WLAN" to "LAN", if needed

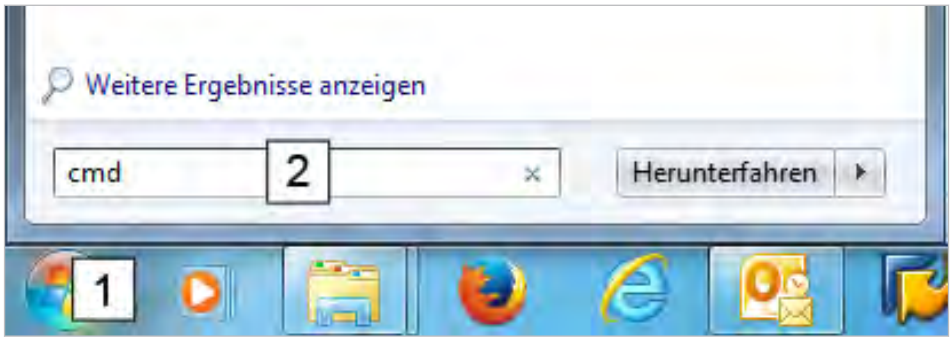
Step 3: Set up the network sharing on the scanner PC

- Find out the exact name of the scanner PC via "System Control Panel" and "System".



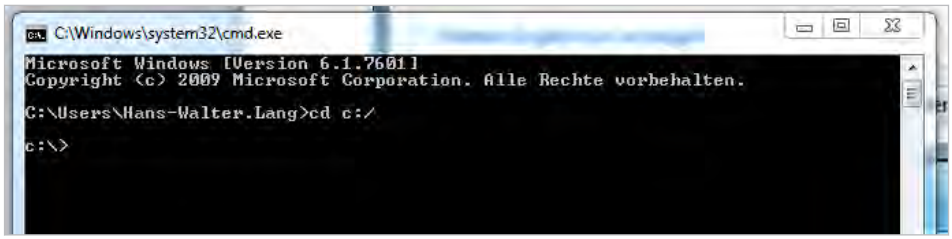
- Press Start (Windows icon) ①

- Enter "cmd" ②



Step 4: Set up PC sharing on student PC

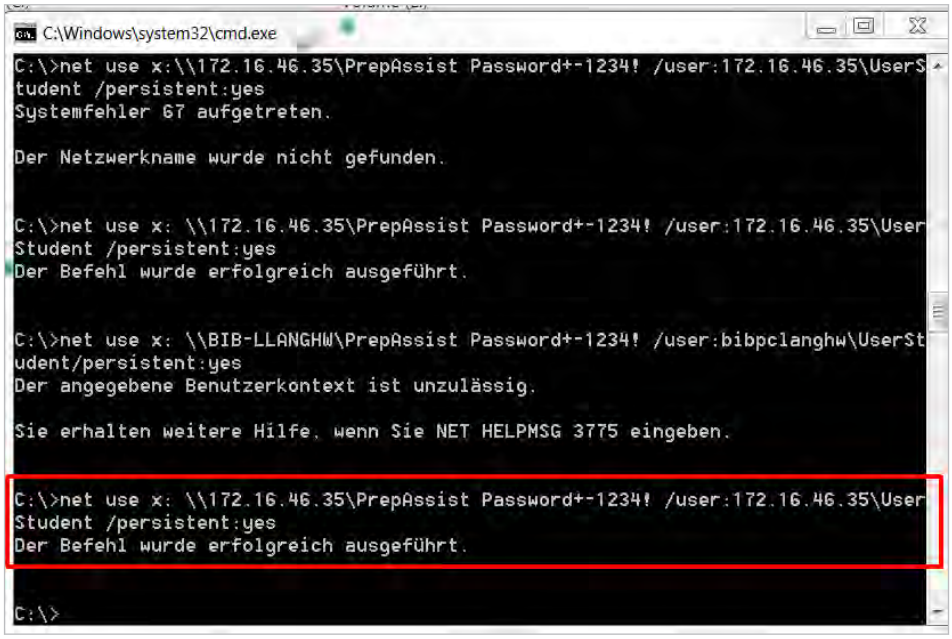
(return to c:\ using cd c:/, if needed)



The following entries are mandatory (note spaces):

- net use x:\\ ((enter name or IP of the scanner PC))
- after PrepAssist (enter selected password)

The following is an example using the IP address



- Confirm using the return key.

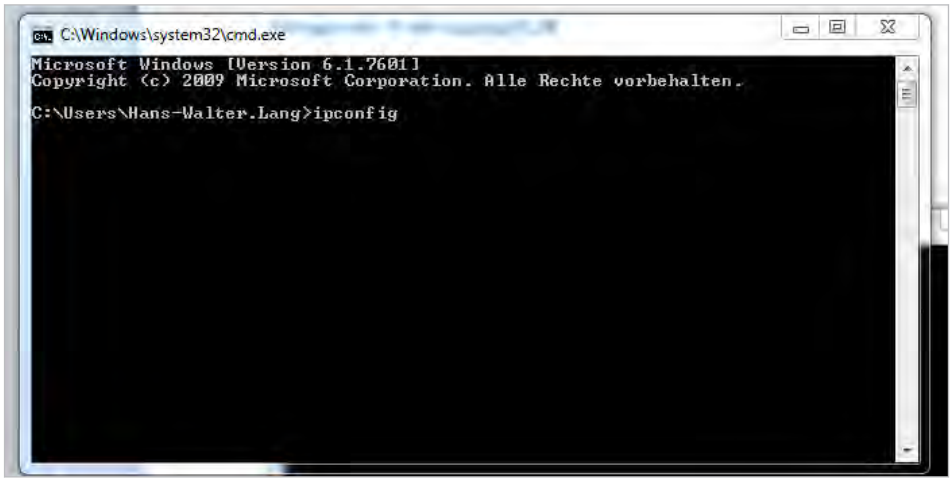
Note

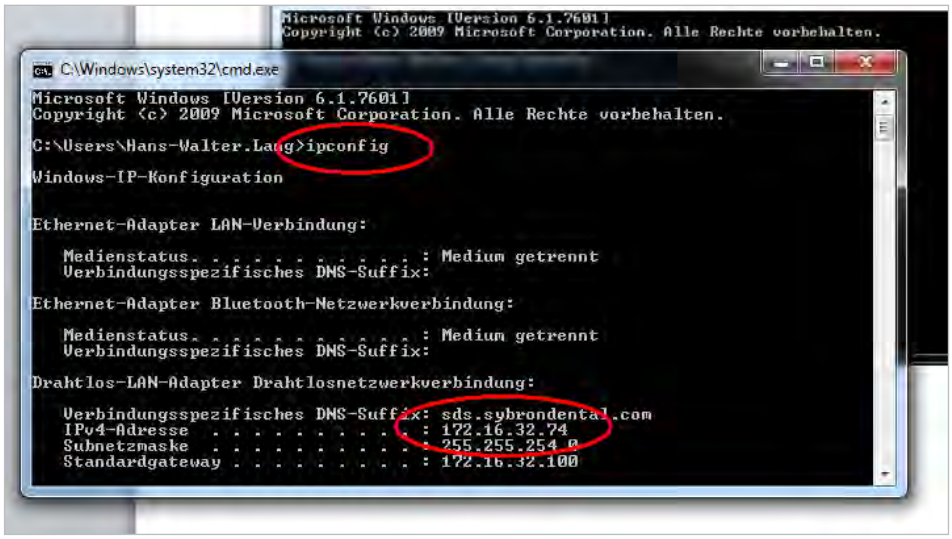
If you fail to link the student PC to the scanner PC, enter the IP address of the PC rather than the name of the PC.
The "ipconfig" entry can be used to display the IP of the PC.
The "ping" entry (IP of the other computer) can be used to establish the connection.
The "Up" arrow key can be used to display the previous input line again to make changes.

Inquiring the IP of the scanner PC

- Click on "Start"
- Enter "cmd"
- Enter "ipconfig"

⇨ This displays the IP of the scanner PC





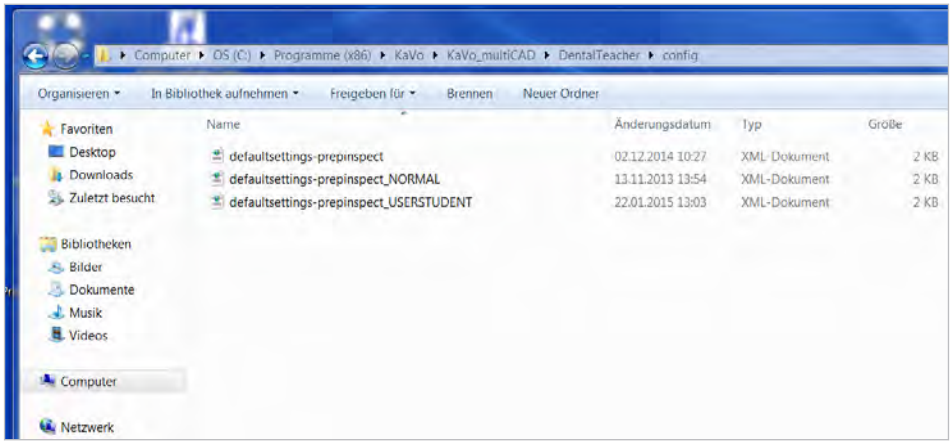
e.g. replacing the PC name, BIB-LLANGHW, by IP 172.16.32.74

Step 4 Setting up the student PC

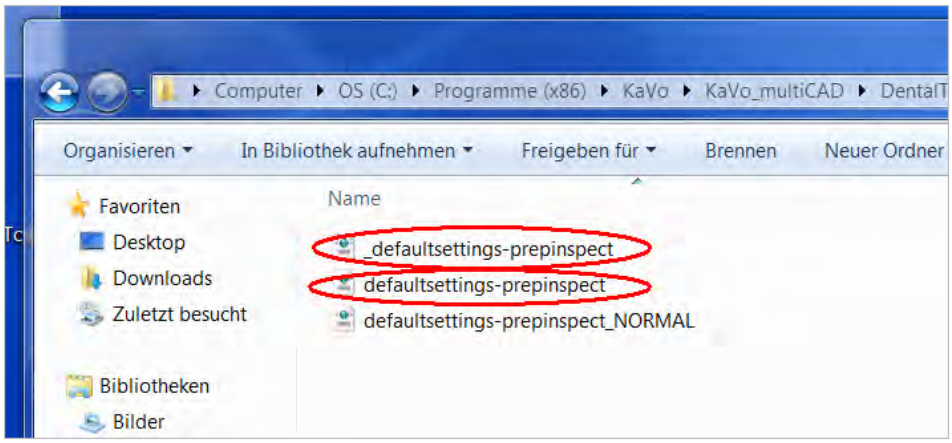
Enter the following file path:

- C

- Programs (x86)
- KaVo
- KaVo_multiCAD
- DentalTeacher
- config



- first file defaultsettings-prepinspect
- change to **_defaultsettings-prepinspect**
- third file defaultsettings-prepinspect_USERSTUDENT
- change to **defaultsettings-prepinspect**



13 Maintenance

13.1 Maintenance

To ensure uniform, good scan results, the axis calibration should be performed every four weeks with the aid of the calibration model included in the delivery. This is mandatory after every transport the instrument is transported. If the temperature difference is +/- 15 degrees, the instrument should be allowed to equilibrate to room temperature for at least four hours. Axis calibration is required after each transport.

13.2 Cleaning

The scanner should be cleaned regularly during operation. For cleaning, switch off the scanner and carefully remove any dust or foreign bodies from the bottom of the scanner using a vacuum cleaner.
You can also clean the scanner with a moistened microfibre cloth and in most cases this is sufficient. Do not use paper tissues or similar items as the surface is susceptible to scratching.
Abrasive detergents should not be used.
The optics of the 3D sensor are located in the top, left area of the interior of the scanner. As inappropriate cleaning measures could lead to damage, it is essential to abstain from such measures.

13.3 Updating the software

The software is not updated automatically.
The enclosed software package is intended for re-installation, if required.
New software versions and/or software enhancements can be requested from KaVo.

14 Trouble shooting

The scanner is a sensitive optical instrument. Repair and maintenance work may only be carried out by qualified personnel.
Contact the customer service in the case of disturbance that is not remedied by re-starting the scanner and the software.

Malfunction	Cause	Remedy
Course administrator (Course Admin) cannot administer a new course.	No tick placed behind Course Admin.	▸ Place a tick behind Course Admin.
Course administrator cannot view tasks of the teachers.	No tick placed behind Course Admin.	▸ Place a tick behind Course Admin.
Teacher or course administrator sees no trainee solutions.	Trainees have not released the solutions.	▸ Trainees release the solutions.
Course administrator cannot assess or comment on the results of the trainees.	No tick placed behind Course Admin.	▸ Place a tick behind Course Admin.
Teacher cannot release a task for the trainees that was created by the teacher.	The Dental Teacher programme operates in "Course Admin" mode.	▸ Undo the tick behind Course Admin.
Master preparation cannot be created. Preparation button is not active.	The requisite original tooth without preparation is not yet available in the tooth library.	▸ Scan original tooth.
Scanner fails to start after pressing the "Scan" button.	USB connection is interrupted.	▸ Check the USB ports on scanner and PC.
Student cannot login.	Entered the wrong password. Forgot the password.	▸ Have the Administrator reset the password. **See also:** 12.1.1 Resetting the student password, Page 38

15 Environment and disposal

15.1 Packaging

You can return the packaging material to your specialist dealer for disposal.
However, we recommend that you keep the packaging in case you need it later for transporting the scanner or to return the scanner in warranty cases.

15.2 Disposal

The scanner should be returned to the manufacturer or special dealer for disposal.
The scanner is an instrument that is designed solely for commercial or industrial application.
Disposal by the public refuse collection is therefore not possible.
Please contact the specialist dealer or the manufacturer directly for disposal.
For further information, please visit www.smartoptics.de, and specifically the link, Company » Environment » Company and the environment.
WEEE registration number: DE47893210

16 Imprint

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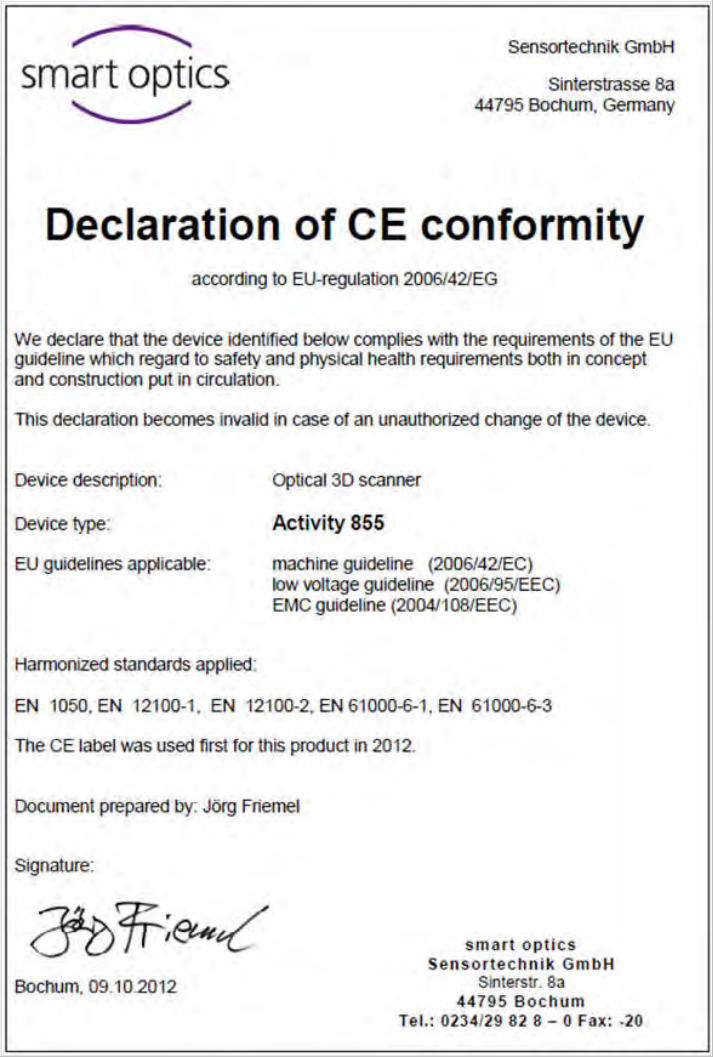
Mail: support@smartoptics.de
We reserve the right to make changes in accordance with technical advancements.
Date of this information: 17 May 2013
Version: V2.6.09

17 EC Declaration of Conformity



smart optics

Sensortechnik GmbH

Sinterstrasse 8a
44795 Bochum, Germany

Declaration of CE conformity

according to EU-regulation 2006/42/EG

We declare that the device identified below complies with the requirements of the EU guideline which regard to safety and physical health requirements both in concept and construction put in circulation.

This declaration becomes invalid in case of an unauthorized change of the device.

Device description:	Optical 3D scanner
Device type:	**Activity 855**
EU guidelines applicable:	machine guideline (2006/42/EC) low voltage guideline (2006/95/EEC) EMC guideline (2004/108/EEC)

Harmonized standards applied:

EN 1050, EN 12100-1, EN 12100-2, EN 61000-6-1, EN 61000-6-3

The CE label was used first for this product in 2012.

Document prepared by: Jörg Friemel

Signature:

Bochum, 09.10.2012

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