GAMMA Dental Software

Update Information

Version 8.8

GAMMA
Medizinisch-wissenschaftliche
Fortbildungs-GmbH

MD CE 0483

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Version 8.8

Revision:
2025-03-07

GAMMA Medizinisch-wissenschaftliche Fortbildungs-GmbH

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MD CE 0483

1 Contents

2 Introduction

2.1 About this booklet

On the following pages, we would like to present to you the feature highlights of version 8.8 of GAMMA Dental Software (GDSW). This update includes many improvements and new features for the CADIAX®, CADIAS®, and CADIAS® 3D analysis modules as well as for the patient management in GAMMA Document Browser and GDSW classic.

Several of the changes implemented in this software version have been suggested by our user basis worldwide. If you also have ideas or suggestions for possible improvements, please do not hesitate to contact us.

2.2 Downloading the software

The most recent version of GAMMA Dental Software is available for download from the *Downloads* section of our website at www.gammadental.com. There, you can also find the current Instructions for Use for all our products and additional information material for free and without registration.

You can also request a paper copy of the Instructions for Use by contacting us directly. Shipping within the European Union is free of charge.

After having downloaded the installation package as a setup file, simply execute that file to start the installation.

2.3 Installation from the flash drive

GAMMA Dental Software is also available on a USB flash drive that contains not just the software installation package, but also the Instructions for Use in PDF format. The flash drive is write-protected and will appear as an additional drive named "***GDSW***" in your file explorer when plugged in.

Figure 1: Installation from flash drive.

To start the installation, simply insert the USB flash drive into a free USB port of your computer. The logo printed on the flash drive should typically be located on the top side. If the installation routine does not start automatically, you can launch it by executing the file *setup.exe* that you can find in the folder *Setup* on the *GDSW* drive. The Instructions for Use are located in the subfolder *Manuals*. A suitable PDF viewer application is included with every Windows installation.

2.4 Installation procedure

If an older version of GAMMA Dental Software already exists on your computer, the installation routine will perform an update, which will preserve your personal configuration settings. The update procedure will in no way touch your pre-existing patient files. Nevertheless, **we recommend backing up your patient data before installing the update**. You can easily identify the patient files to back up by their file extensions **.gdb* for GAMMA Document Browser and **.fgw* for GDSW classic. The database directory where these files are located is indicated in the respective application.

Do not switch off your computer during the installation. If you are installing the software on a laptop computer, please ensure that it will not run out of power during the installation procedure.

Furthermore, please ensure that you have your license code at hand when launching the installation routine. You can find this code on your license letter that you received as part of the installation package. Contact us if you need a copy of the license letter at a later time.

In the very first steps of the installation procedure, you are asked to choose the language to be used for the software and to accept the license agreement.

Afterwards, please enter your license code and optionally your user information (Figure 2). The latter is used for identifying the workstation and your practice or company on the printouts created by the software. Click *Next* to continue.

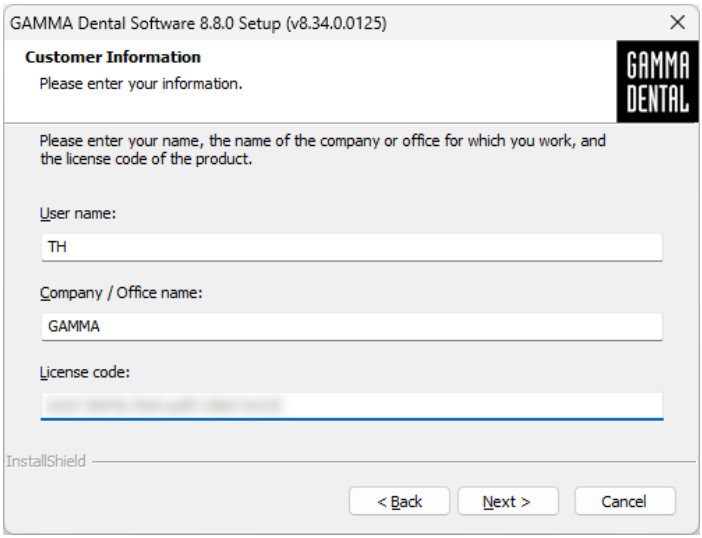


Figure 2: Enter your user information and the license code.

In the subsequent step, you can change the directory to which the software will be installed. We recommend to proceed with the predefined settings.

Afterwards, you will be asked to specify the directory in which you want to store your patient data (Figure 3). If you need to access the data from multiple PCs, you can specify a network drive that is accessible to all of them.

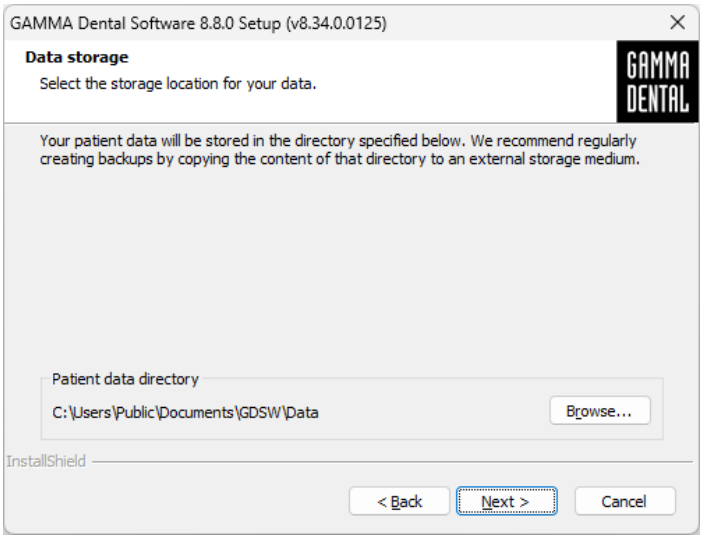


Figure 3: Select the directory in which your patient data should be stored.

The next window summarizes the installation settings. To change any of them, go back to the respective step by clicking on *Back*.

2.5 Software activation

After the successful installation of GAMMA Dental Software, you can choose to start either GAMMA Document Browser or GDSW classic. In either case, you will be asked to activate the software (Figure 4).

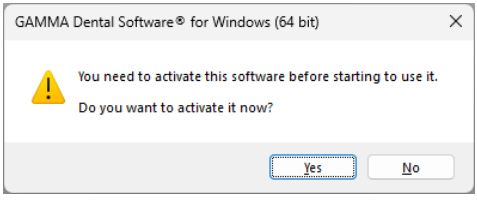


Figure 4: Activation is always performed for the complete GDSW package, regardless of which application invoked it.

The activation procedure has to be carried out only when you start the software for the very first time. Depending on the license code entered during installation, different software modules will be made available. To check your license information or enter a new license code after activation, use the menu *Help* > *About* in the software.

Warning:

Using GAMMA Dental Software in a virtual environment (e.g., Parallels® Desktop) may cause poor performance or even loss of certain functionalities.

If you plan to use the software in a virtual environment anyway, we strongly recommend updating both your operating system and your virtualization software to the latest version before activating. Subsequent updates of these components can cause a change of the system information that is registered by GAMMA Dental Software, which will render your activation invalid. GAMMA does not take any responsibility for validity of license codes being lost this way. For these reasons, please use a native Windows environment instead (e.g., Boot Camp on Apple macOS computers, if available).

For activating GAMMA Dental Software on a computer with internet connection, simply select *Online activation* in the following dialog (Figure 5) and click on *Activate*. No further steps are required in this case and you can immediately start using the software.

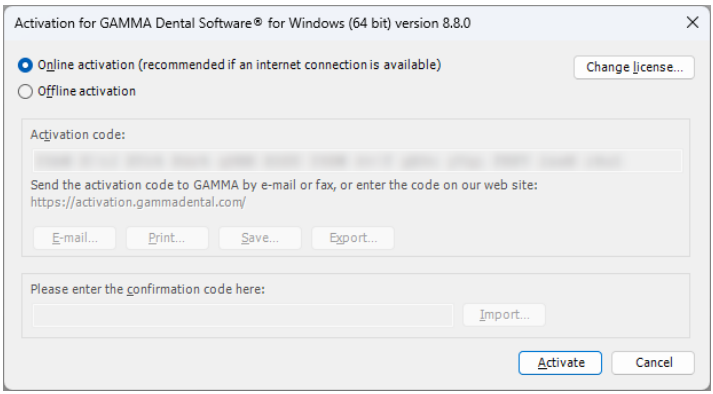


Figure 5: An active internet connection is convenient, but however not necessary when activating GAMMA Dental Software.

If you are installing GAMMA Dental Software on a computer without an active internet connection, please select *Offline activation*. Send the displayed activation code to GAMMA either via e-mail or by fax or visit the GAMMA activation website (Figure 6) on another device to activate your software:

activation.gammadental.com

Enter your customer number and the activation code shown in the software and click on *Activate*. The system provides *Export* and *Import* functionalities on both ends to minimize the risk of typographic mistakes.

The website will return a confirmation code, which you will have to enter in the corresponding input box of the activation dialog (Figure 5). By clicking on *Activate*, software activation is now also completed on a system without internet connection.

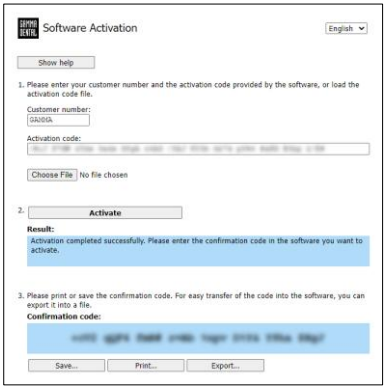


Figure 6: Offline activation enables you to activate the software on computers without an internet connection.

GAMMA Dental Software is now ready for use. In case of any questions regarding the installation or usage of the software, please do not hesitate to contact us via:

E-Mail: support@gammadental.com

Phone: **+43 2243 34140**

Fax: **+43 2243 34140 90**

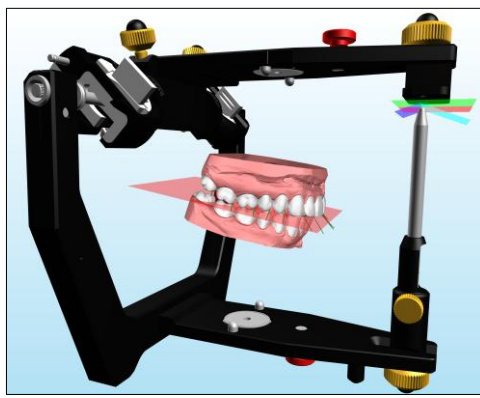
Our hotline is at your disposal on workdays from Monday to Friday between 9 AM and 4 PM (local time Vienna).

3 Updates in version 8.8

3.1 CADIAS® 3D

Undoubtedly, computerized digital methods are an ongoing important factor in modern dentistry. Typical dental developments in the industry aim directly at the design and manufacturing of prosthetic appliances in the dental laboratory, wherefore digital dentistry nowadays is more a topic for the dental lab than it is for the practitioner's office. The aspects of functional analysis are widely ignored or neglected by those developments.

The field of instrumental functional analysis is one of the key points of the Vienna School of Interdisciplinary Dentistry (VieSID) in the systematic approach to establish valid and patient-specific evaluations. In particular, occlusal analysis of articulated models is of prime importance. With CADIAS® 3D, GAMMA has developed a sophisticated 3D software system that aims to fill the gap in digital dentistry to allow occlusal model analysis as part of the computerized workflow.



For a complete overview of the features provided by CADIAS® 3D, please refer to the Instructions for Use of GAMMA Dental Software, which you can also access via the *Help* menu in the software. The software comes with a fully documented patient case, named "Test Patient 3", which you can use to get acquainted and experiment with CADIAS® 3D. Go ahead and give it a try!

3.1.1 Creating 3D-printed models with Reference Print&Click

A fully digital workflow usually entails the absence of physical models, which complicates crucial steps such as the final functional verification of digitally designed restorations. The Reference Print&Click Set (order no. 06-230960) solves this problem by facilitating the accurate articulator mounting of 3D-printed dental models.

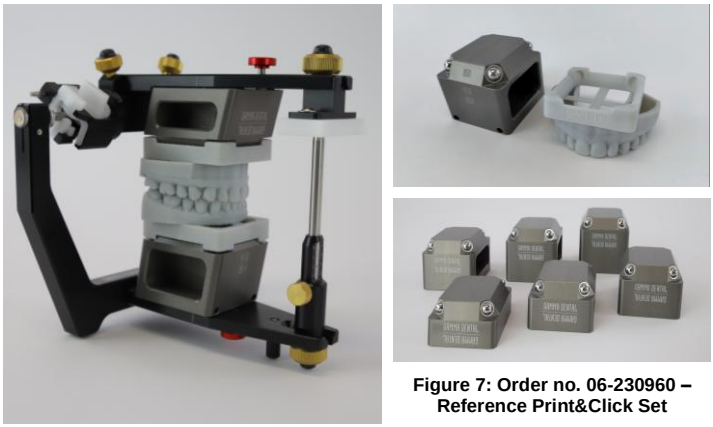
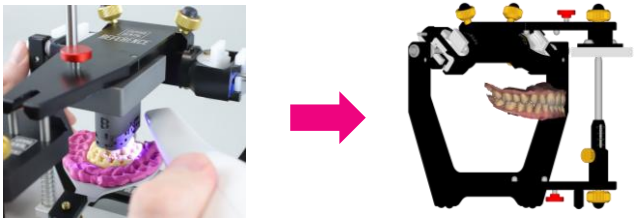


Figure 7: Order no. 06-230960 – Reference Print&Click Set

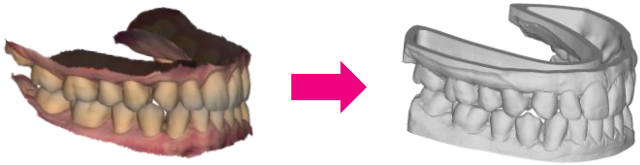
1 Articulate Intraoral Scans

Intraoral scans are transferred to the virtual articulator using GAMMA's unique digital workflow. This ensures a correct relationship between the digital models and the exact kinematic TMJ hinge axis.



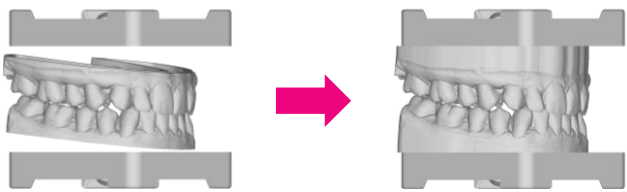
2 Create Printable Models

The articulated intraoral scans are converted to printable models using a Model Creator application such as by exocad, 3Shape, or Medit.



3 Connect to Base Plate

In CADIAS® 3D, the printable models are connected to a base plate that clicks onto a suitable Print&Click mounting block, preserving the hinge-axis relation of the digital models.



4 Send to 3D-Printer

The final Print&Click models can be sent directly to any 3D-printer. No additional consumable parts required.

The creation of 3D-printable models for the Reference Print&Click mounting system is integrated as a step-by-step workflow on a new *3D Model Printing* pane in CADIAS® 3D. After importing and selecting the models from your selected Model Creator application, the next step is to open the bottom plane of the models. This allows the attachment of a Print&Click-compatible mounting plate while keeping the articulated position of the models unchanged. The optimal height of the mounting blocks is selected automatically to minimize the volume for 3D-printing. The resulting extended models can subsequently be exported to your 3D-printer in STL or another open file format.

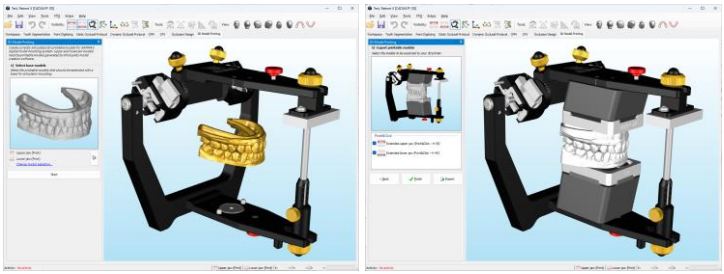


Figure 8: A simple step-by-step workflow in CADIAS® 3D guides you through the creation of Print&Click models (right) from the printable base models (left).

The workflow also allows customizing the created models by applying user-defined text labels, such as for patient name, creation date, laboratory name, etc. The font style of these text labels, but also the geometry of the base plate can be adapted based on your preferences and 3D-printing requirements.

The use of 3D-printed models ensures high reproducibility of a given model situation at any time in the future, without the need for storage space or controlled storage conditions, as is the case with physical models. By relying on third-party Model Creation software for creating the printable models, even advanced features such as introducing removable tooth dies, adding support pins for securing the maxillomandibular relationship, and optimized infill patterns for hollow models can be included. Finally, the Reference Print&Click mounting system does not require any consumable parts besides the actual 3D-printing material.

However, please be aware that the quality of 3D-printed models is highly dependent on the 3D-printing process. It is therefore essential to calibrate and validate your workflow before putting the system into practice.

3.1.2 Visualization of occlusal distances in real-time

CADIAS® 3D already provides an extensive set of tools for analyzing static and dynamic occlusion in the form of static and dynamic occlusal protocols. To allow for analysis with an even finer degree of control, it is now possible to visualize the distances between maxillary and mandibular teeth in real-time. The feature can be easily activated by pressing *Show distances* in the toolbar.

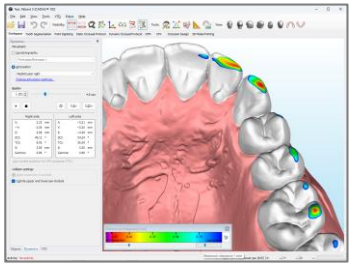


Figure 9: Occlusal distances between upper and lower jaws can now be visualized in real-time.

When replaying a lower jaw movement, a color gradient will indicate the distances to the respective antagonist directly on the occlusal surfaces. Guiding or interfering tooth contacts, but also areas of close proximity can thus be detected easily throughout the entire movement. This visualization can be used for real lower jaw movements recorded with CADIAX® devices or articulator-guided movements, and can also be combined with the existing static and dynamic occlusal protocols. It may also be used while repositioning jaw models or individual teeth during VTO to show the effects in real-time.

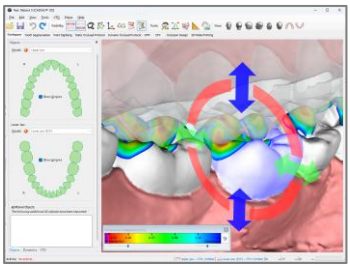


Figure 10: The visualized distances immediately reflect any occlusal adjustments made during VTO mode.

Lastly, the distance visualizations can be turned on or off for upper and lower jaw models independently and can also be adjusted with respect to the distance range of intersections and clearances to be visualized.

3.1.3 Model repositioning to CPM position

When creating a VTO (Visualized Treatment Objective) in CADIAS® 3D, it is now also possible to reposition the upper and/or lower jaw model to a selected CPM position (Condylar Position Measurement) such as from RP to ICP or vice versa.

3.1.4 Close models to first contact

When mounting plaster models in the articulator, it is often desired to mount them in condylar reference position (RP), closed to first tooth contact. This retral contact position (RCP) is sometimes difficult to achieve with an incisal pin height of zero, due to the variable thickness of the centric registrate.

To skip this step with lab scans of analog models and instead provide a digital method of achieving first tooth contact easily and reliably, CADIAS® 3D now provides a new VTO operation that closes either the upper or the lower jaw model to the first tooth contact. This functionality can also be used after the model situation has been modified, such as after a mandibular repositioning.

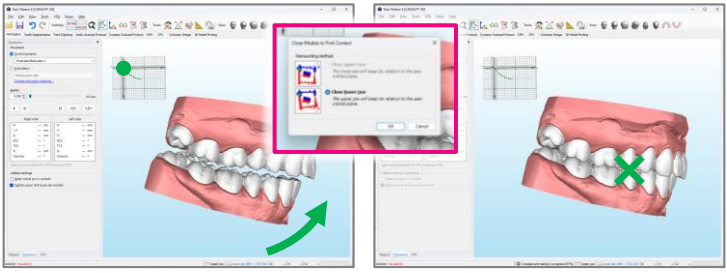


Figure 11: CADIAS® 3D now allows closing jaw models to the first tooth contact.

3.1.5 Setting custom color for 3D objects

3D objects displayed in CADIAS® 3D are by default displayed in schematic colors that make it easy to discern individual objects. Some types of data, such as intraoral scans, may even include true color information that has been captured during 3D scanning, which can be useful to create a more realistic visualization.

To provide an additional option for illustrative purposes, it is now possible to assign custom colors for each displayed 3D object individually.

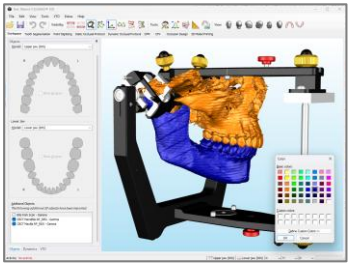


Figure 12: Any 3D object displayed in CADIAS® 3D can now be assigned a custom color to improve visual impact.

3.1.6 Improved management of additional 3D objects

Besides jaw models, CADIAS® 3D also allows importing arbitrary additional 3D objects into the scene. These additional objects may be used for visualization or may also serve a functional purpose, such as the bite fork scan used for articulating intraoral scans as part of the digital workflow. To improve the handling of these additional objects, CADIAS® 3D now provides a dedicated list in the *Objects* tool window. This list allows controlling object visibility, as well as renaming, removing, or exporting individual objects.

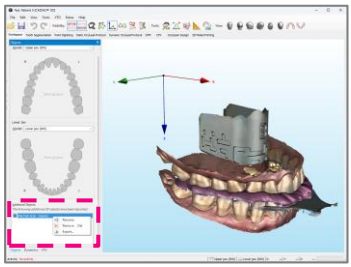


Figure 13: Additional objects in the 3D scene can now be managed conveniently within CADIAS® 3D.

3.1.7 Miscellaneous improvements

- It is now possible to edit 3D meshes during the digital workflow in the 3D Data Assistant, which can be useful to correct scanning artifacts in the bite fork scan.
- When modifying condylography curves in CADIAX®, such as performing a zero-point adjustment or hinge axis correction, the changes will now immediately be reflected in CADIAS® 3D.
- When exporting lower jaw movements for the exocad® Jaw Motion Import module, the Jaw Motion files will now include additional data to skip having to select a curve's starting position during the import.
- The application now also supports the standard keyboard shortcut *Ctrl + Shift + C* to copy the currently displayed view as an image into the clipboard.

3.1.8 Fixed issues

- The gradient coloration of the distance map in the static occlusal protocol did not transition smoothly between adjacent colors.
- When exporting the already aligned bite fork scan during the digital workflow in the 3D Data Assistant, the exported data did not consider this alignment.

- A visual glitch that occurred when deactivating VTO mode with guidance paths of the dynamic occlusal protocol being displayed has been resolved.
- Activating a predefined view in CADIAS® 3D under some circumstances caused additional objects to become visible.
- An unhandled exception caused by changing the model selection during a movement replay has been fixed.
- Several issues related to unexpected data formats when importing 3D objects from PLY and STL files have been fixed.

3.2 CADIAX®

3.2.1 CADIAS® 3D jaw models in 3D Animation

The 3D Animation in the CADIAX® analysis and recording applications visualizes mandibular kinematics with the purpose of improving understanding and communication. It hitherto used a simple generic 3D model of the skull and mandible, which has now been improved to also allow selecting the jaw models imported in CADIAS® 3D. This enables a live visualization or replay of lower jaw movements using the model scans or intraoral scans that have been articulated in GAMMA's virtual articulator. Combined with the real-time visualization of occlusal distances, this allows for a comprehensive occlusal analysis either chairside or after the examination.

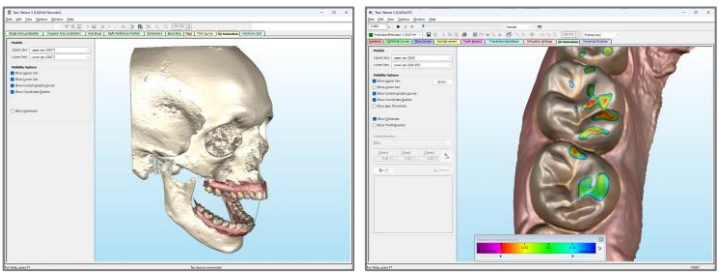


Figure 14: Any jaw models loaded in CADIAS® 3D can now also be used for visualizing the lower jaw movements in the 3D Animation of CADIAX® – during the analysis, but also during the recording. The real-time display of occlusal contacts introduced in CADIAS® 3D is also available here.

3.2.2 Magnified coordinate system view

When taking condylar position measurements (CPMs) in CADIAX®, for some patients, the measured condylar positions may be very close to each other. This could make it difficult to differentiate the individual point measurements.

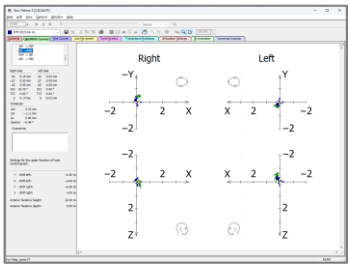


Figure 15: CADIAX® now provides an optional magnified view of the coordinate system, such as for CPMs.

To improve the readability of these measurements, it is now possible in all CADIAX® applications to turn on a magnified view of the coordinate system using a dedicated toolbar button 🔍 *Magnify Coordinate System*. This option can be activated at any time and will shorten the coordinate system axes for an enlarged measurement display. As positions near zero may also land in the posterior quadrants of the coordinate system, the negative X and Z axes are also provided.

The coordinate system magnification can also be used during CADIAX® recording, for instance to ensure that the red cross of the real-time cursor is located near reference position before starting the measurement.

3.2.3 Miscellaneous improvements

- The export of CADIAX® lower jaw movements as Jaw Motion files for the exocad® CAD/CAM application is now more accessible with a dedicated menu item in the *File* > *Import* / *Export* menu.
- The user interface for specifying tooth kinetics positions in the 3D Animation has been revised, and the 3D Animation now also respects the field of view setting that was specified in CADIAS® 3D.

3.2.4 Fixed issues

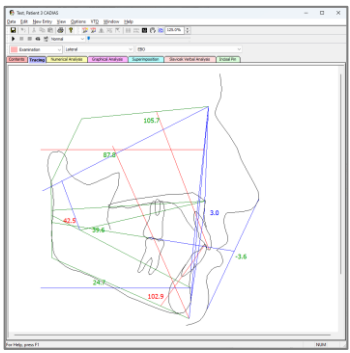
- The recovery files of CADIAX® recordings were not saved correctly if the patient name contained an unusual punctuation character such as a slash or a colon.
- Some missing localizations for various languages in the 3D Animation have been added.

3.3 CADIAS®

3.3.1 Analysis according to European Board of Orthodontics (EBO)

The European Orthodontic Society (EOS; eoseurope.org) is a not-for-profit association founded in 1907 with the aim to advance orthodontic research, techniques, and clinical practices. In affiliation with the European Board of Orthodontics (EBO), they conduct a prestigious certification exam designed to recognize clinical excellence in orthodontics within Europe.

To simplify the documentation of cephalometric tracings and numerical analyses conforming to the requirements of the EBO exam, CADIAS® now integrates the respective definitions out-of-the-box.



EBO Analysis

Sagittal Skeletal Relations	Norm	Value	Trend
S-N-A Angle	80.5 °	82.5	1+*
Facial Plane	79.6 °	79.3	
Facial Convexity	3.6 °	6.8	1+*
Vertical Skeletal Relations	**Norm**	**Value**	**Trend**
Maxillary Inclination	7.8 °	2.0	1–*
S-N to Gonion-Gnathion Angle	32.6 °	28.8	1–*
PP to Gonion-Gnathion Angle	25.0 °	26.7	
Dento-Basal Relations	**Norm**	**Value**	**Trend**
Maxillary Incisor Inclination	°	107.8	
Lower 1 to Gonion-Gnathion Angle	90.0 °	102.9	3+***
Lower Incisor Protrusion	1.0 mm	3.0	
Dental Relations	**Norm**	**Value**	**Trend**
Overjet	2.5 mm	2.5	
Overbite	2.5 mm	2.5	
Interincisal Angle	130.4 °	122.4	

Figure 16: CADIAS® now provides the definitions of a tracing and numerical analysis specifically for the European Board of Orthodontics (EBO) certification exam.

3.4 GAMMA Document Browser

3.4.1 Improved scroll behavior in Workspace view

The Workspace view of GAMMA Document Browser provides a structured and consistent view of the patient data that can be fully customized in its content and appearance. This includes basic changes to color and font styles, but also the adding or removing of entire sections or individual cells. To simplify these customizations, the application will now always try to avoid changing the scroll position when items are inserted or deleted.

3.4.2 Improved CADIAX® and CADIAS® previews

CADIAX® and CADIAS® previews in GAMMA Document Browser can be configured to automatically show a specific representation of the underlying data, such as tracings or numerical analyses for CADIAS®, or axis movements or time curves for CADIAX®. However, by opening an analysis and saving in a particular view, that view was hitherto saved as a "manual" preview, overriding the automatically generated one.

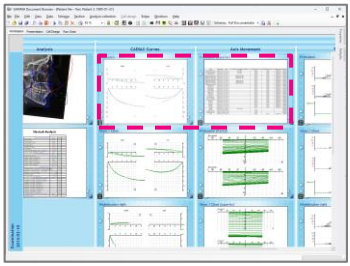


Figure 17: Manual analysis previews offer flexibility, but may cause an inconsistent Workspace appearance.

This behavior has been made more intuitive so that by default, no manual previews will be generated, and the Workspace will thus preserve the data representation configured in the schema design template. You can configure this setting via the menu *Extras* > *Options*, in the *Display* category.

Additional improvements include additional properties for the CADIAX® previews, which now support overlay mode also for time curves, axis movements, and translation-rotation graphs. It is now also possible to only show curves that have been selected for articulator calculation.

3.4.3 Cell Design improvements

The Cell Design view in GAMMA Document Browser allows an even finer degree of customization for how data is displayed in the individual cells of the Workspace. For a more precise alignment of cell design elements, such as text boxes, shapes, or data areas, the view now provides a customizable point grid in the background. Elements can be moved in small increments using the arrow keys. Lastly, it is also possible to insert new cell design elements with a single click of the left mouse button.

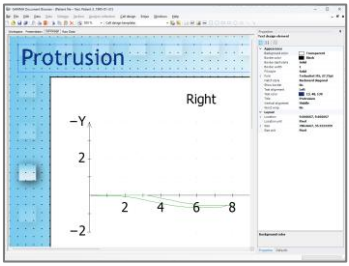


Figure 18: The Cell Design view now provides a customizable background grid and easier element positioning.

3.4.4 Entering office/user information

When installing GAMMA Dental Software, the software allows entering the name of the office and user, which will be printed on the printouts and used for features such as the labelling of 3D-printed models in CADIAS® 3D. Changing this information was hitherto only possible in GDSW classic, but is now also possible via the menu *Extras* > *Enter Office/User Data* in GAMMA Document Browser. As this information will be used across all user accounts, changing it requires the application to be run as an administrator.

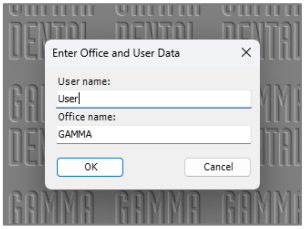


Figure 19: The user and office name for a GDSW installation can now also be changed in GAMMA Document Browser.

3.4.5 Export of text documents

Text documents in GAMMA Document Browser are a convenient way to document written patient findings such as a diagnosis or a treatment plan. These text documents can now be exported from the Raw Data view as RTF files (Rich Text Format) to allow editing in other applications.

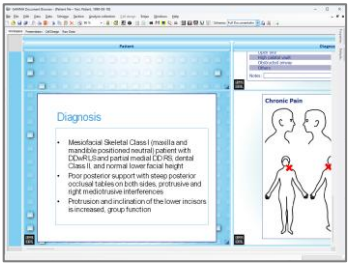


Figure 20: Foreign OLE Objects may be used to embed any type of file (shown is a PowerPoint presentation).

Please note that the creation and editing of text documents requires the presence of the WordPad application, which has been deprecated with Windows 11 version 24H2. While it is possible to restore the application from an older Windows installation, we recommend using Foreign OLE Objects instead, which allow embedding any type of file in a data area in the Workspace. To do so, set the “Data item type” of a data area to “Foreign OLE Object” via the *Properties* panel.

3.4.6 Miscellaneous improvements

– It is now possible to select multiple CADIAS® data areas in the Workspace in order to configure their properties simultaneously.

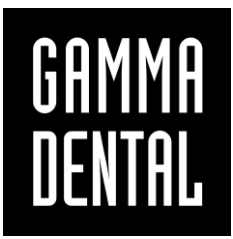
3.4.7 Fixed issues

- An issue resulting in inconsistent data area properties when switching between “Automatic” and “Manual” preview types has been resolved.
- User-defined image types imported from an opened patient file were inadvertently discarded when closing the *Options* dialog.
- A rare application crash that occurred when closing a patient file while the *Properties* panel was opened has been fixed.
- An unhandled exception when attempting to directly link a specific data item to a data area has been fixed.
- The conversion of GDSW classic data to the file format of GAMMA Document Browser indicated a successful conversion even if some files could not be converted due to data corruption.

3.5 General

3.5.1 Miscellaneous improvements

- When closing GDSW classic while having a patient filter activated, the application would persist that setting across application re-starts, which could give the impression that patient data has been lost. This has been changed so that the filter settings are cleared automatically when the application is closed.
- Missing localizations of the user interface have been updated in various locations.
- The software activation website (activation.gammadental.com) that allows activating the software on a computer without internet connection now uses HTTPS throughout to improve security.



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