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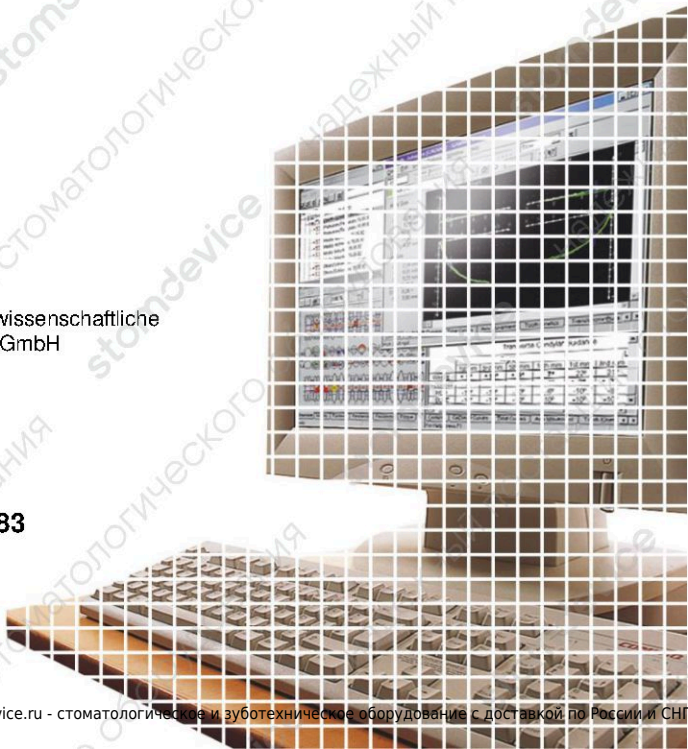
GAMMA Dental Software

Update Information

Version 8.5.5

GAMMA
Medizinisch-wissenschaftliche
Fortbildungs-GmbH

CE 0483



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Revision:
2022-02-17

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1 Contents

1 Contents 3

2 Introduction 4
2.1 About this booklet 4
2.2 Contents of the flash drive 4
2.3 Installation 5
2.4 Activation 8

3 Updates in version 8.5.5 11
3.1 CADIAS 3D 11
3.2 General 16
3.3 GDSW classic 16
3.4 GAMMA Document Browser 17
3.5 CADIAX 18
3.6 CADIAS 19

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2 Introduction

2.1 About this booklet

On the following pages, we would like to present to you the highlights of version 8.5.5 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.

Many 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 Contents of the flash drive

GAMMA Dental Software is now shipped on a USB flash drive, including not just the software installation package, but also the operating instructions in PDF format and a storage partition for your own personal use.



Figure 1: GAMMA Dental Software is now delivered on a USB flash drive.

After inserting the flash drive in a USB port of your computer, you will find two additional storage media appear in your file explorer:

- A virtual read-only CD drive "***GDSW***", containing the software installation package in a subfolder *Setup* and the operating instructions in a subfolder *Manuals*.
- An empty removable disk "***GAMMA***" that is free to use.

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You can find the operating instructions for GAMMA Dental Software in PDF format in the folder *Manuals* on the USB flash drive. Alternatively, you may download them via the *Downloads* area of our website www.gammadental.com. Should you prefer a hard copy, please let us know. Postage for subsequent delivery within the European Union is free of charge.

2.3 Installation

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 also launch it by executing the file *setup.exe* that you can find in the folder *Setup* on the virtual optical drive. If you downloaded the installation package as a setup file, simply execute that file to start the installation.

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 **.fgw* (GDSW classic) and **.gdb* (GAMMA Document Browser) file extensions. 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.

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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 institution on the printouts created by the software. Click *Next* to continue.

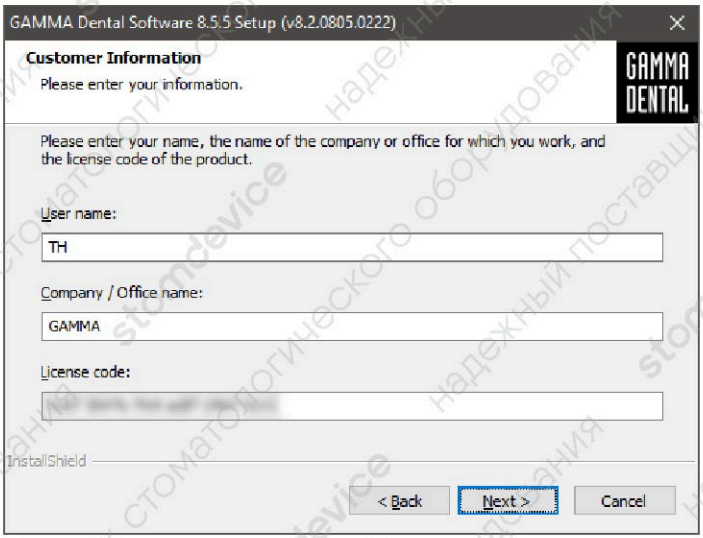


Figure 2: Enter your user information and the license code.

In the subsequent steps, you are able to choose the version to install (32-bit or 64-bit) and to change the directory to which the software will be installed. We recommend continuing with the predefined settings.

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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.

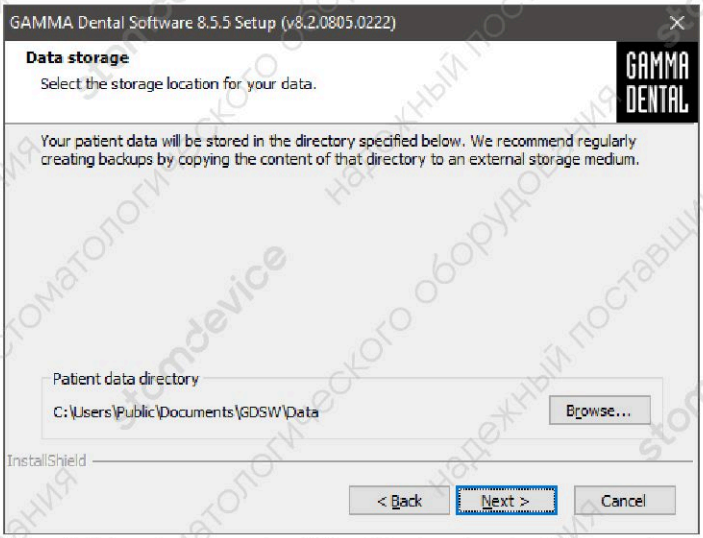


Figure 3: Select the directory in which your patient data should be stored.

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

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2.4 Activation

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

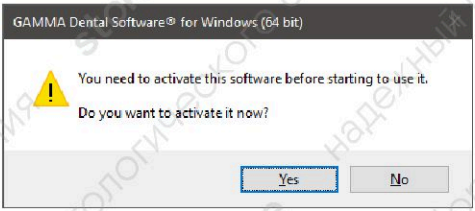


Figure 4: Activation is always performed for the complete GDSW package, regardless of which application invoked it.

The activation procedure has to be carried out only once. In other words, you don't have to activate each program separately.

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 environment instead (e.g., Boot Camp on Apple macOS computers).

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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.

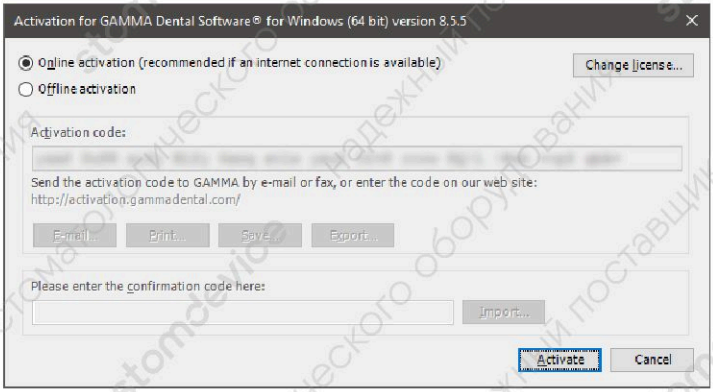


Figure 5: An active internet connection is convenient, but however not necessary when activating GAMMA Dental Software.

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:

http://activation.gammadental.com/

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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*, the activation is now also completed on a system without internet connection.

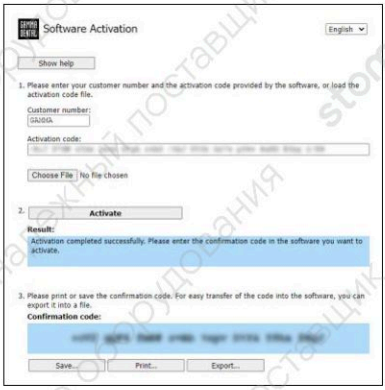


Figure 6: Offline activation enables you to activate the software on computers without an internet connection.

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 from Monday to Friday between 9 AM and 4 PM (local time Vienna).

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3 Updates in version 8.5.5

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.



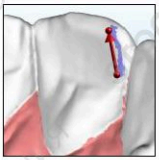
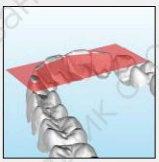
For a complete overview of the features provided by CADIAS 3D, please refer to the manual of GAMMA Dental Software, which you can access via the *Help* menu in the software. The software comes with a fully documented patient case, named "Test Patient 3", which you can use to get acquainted and experiment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

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3.1.1 Custom measurements

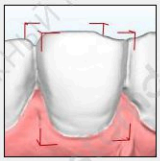
CADIAS 3D now includes an additional tool to perform custom measurements on and between the displayed 3D objects. This includes the upper and lower jaw models, the virtual Reference SL articulator, as well as any other "undefined" objects such as triangulated CBCT data or prosthetics created in external CAD/CAM applications.

You can access this functionality using the toolbar button *Custom Measurements* in the Workspace pane. It currently allows the following types of measurements to be performed:

	***Point measurements*** to measure the X/Y/Z coordinates of points on the object surface. These measurements can be entirely independent from the anatomical point landmarks digitized for numerical and graphical analysis.
	***Line measurements*** to measure the spatial distance between two points, the difference between their X/Y/Z coordinates, as well as the line's angle to the axis-orbital plane.
	***Plane measurements*** for measuring the inclination of a custom plane defined by three points relative to the axis-orbital plane as well as its size.
	***Angle measurements*** to measure the angle between three points.

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Object size measurements to measure the extent of any selected object along the three coordinate system axes. This includes individual teeth of models that have been segmented beforehand.

You can perform an arbitrary number of custom measurements on the displayed objects, which will subsequently be listed in the tool window on the right-hand side. All measurements are saved together with other analysis data in the patient database.

For easier identification of individual measurements, you can assign each of them a unique name. Measurement values can also be copied to the clipboard using the context menu.

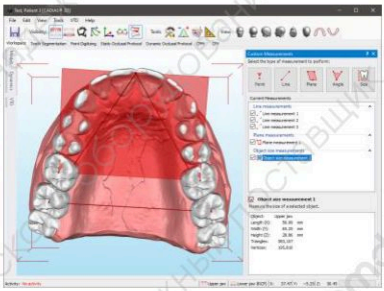


Figure 7: The new tool window for custom measurements in CADIAS 3D.

3.1.2 Highlighting of contacting teeth

In CADIAS 3D, the static and dynamic occlusal protocols support the analysis of tooth contacts in static and dynamic occlusion, respectively. These features have now been improved to highlight the contacting teeth of upper and lower jaw in red color. This change also takes effect during the replay of a selected condylography movement with guidance paths, making it easier to identify the teeth with guiding function throughout the movement.

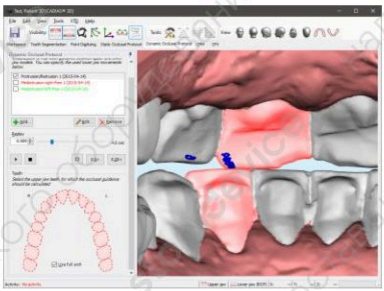


Figure 8: Highlighting of guiding teeth during dynamic occlusal protocol.

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3.1.3 Additional elements in graphical and numerical analysis

The graphical analysis now includes a visualization of the Bonwill triangle, defined by right and left condyle points and the averaged tip of the lower incisors, as well as an axis-orbital reference triangle. Both visualizations are animated together with the lower jaw during a movement replay.

Relevant parameters of the Bonwill triangle, such as the intercondylar distance, side lengths, and its relative angle to the lower occlusal plane ("Balkwill angle") are provided in numerical analysis.

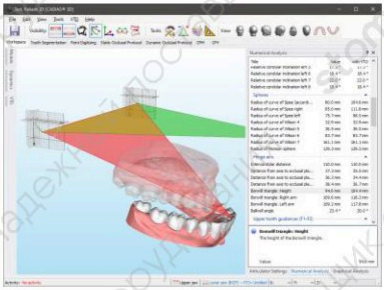


Figure 9: Bonwill triangle and axis-orbital reference traingle in graphical analysis. Numerical analyis now shows values with and without the active VTO.

3.1.4 Numerical analysis with/without VTO

When a model or individual teeth have been virtually repositioned using a Visualized Treatment Objective (VTO), the numerical analysis now includes an additional column to juxtapose the values with and without the VTO modifications (see Figure 9).

3.1.5 VTO according to numeric values

In addition to a manual repositioning of lower or upper jaw models during VTO, it is now possible to reposition the models based on a numeric condylar offset and change of incisal pin height. This functionality is similar to the replication of a therapeutic position using the virtual Condylar Position Variator (CPV) but can optionally be applied to both models simultaneously and can be carried out an arbitrary number of times in a single VTO.

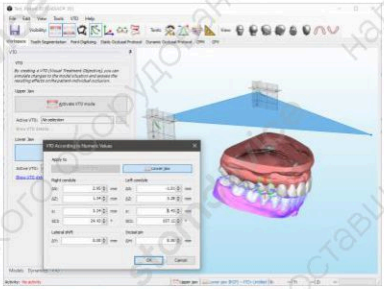


Figure 10: VTO for model repositioning according to numeric values.

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3.1.6 Coordinates of digitized points recalculated for VTO

The tooltips that appear when moving the mouse cursor over digitized point in the 3D scene will now show the respective point's coordinates in consideration of the active VTO and also, in case of the lower jaw, the condylography curve replay. If such a recalculation has been performed, it will be indicated in the tooltip text as appropriate.

Furthermore, it is now possible to copy the point coordinates via the context menu on any pane. Doing so will always copy the recalculated coordinates.

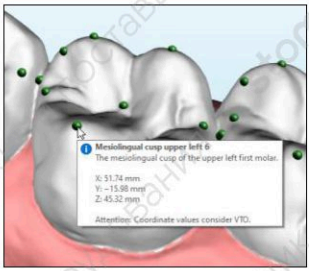


Figure 11: Coordinates of digitized points, recalculated for VTO.

3.1.7 Other improvements

- When exporting segmented models in OBJ format, individual teeth will now be stored as sub-objects, thus preserving the segmentation for processing in third-party applications.
- All values that can be copied to the clipboard, such as digitized point coordinates, values of numerical analysis, and other calculation results, will now be copied with the maximum available precision rather than being limited to two decimal places.
- When importing models in the 3D Data Assistant, it is now possible to apply an incisal pin adjustment also for upper jaw models, which will open up the upper part of the articulator accordingly.
- The definitions for point digitizing now include additional points for the lower passive centric and non-centric lingual arches, which can also be visualized as part of graphical analysis.

3.1.8 Fixed issues

- After calculating a condylar position measurement (CPM) from two lower jaw models in different temporomandibular positions, they could not be exported in the aligned position.
- Various display issues caused by missing support for Direct3D 11.1 on some systems have been fixed.

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- In numerical analysis, very steep occlusal plane inclinations were sometimes measured in the inverse direction (+180°).
- Setting the camera rotation center to a specific point on the model surface using the middle mouse button was not possible on teeth for which guidance paths were displayed.

3.2 General

3.2.1 Support for Windows 11

GAMMA Dental Software now officially supports Microsoft's newest operating system, Windows 11. The third-party components for .NET Framework and Visual C++ included in the installation package have been updated for the best possible experience on the new operating system.



Figure 12: GAMMA Dental Software now supports Windows 11.

Please note that the software no longer supports Windows 7, which has reached end of life in January 2020. For reasons of stability and security, we strongly recommend updating to either Windows 10 or Windows 11.

3.2.2 Other improvements

- The license code in the About dialog is now hidden by default to prevent unintentional sharing with bystanders.
- The process of activating the software without an internet connection using our activation website activation.gammadental.com has been simplified.

3.3 GDSW classic

3.3.1 Fixed issues

- Having selected multiple items in the patient tree of GDSW classic, right-clicking any one of them for deleting or copying to another patient file would clear the selection unexpectedly.

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3.4 GAMMA Document Browser

3.4.1 Creation date in data item properties

The properties of data items in the *Raw Data* view have been extended to provide information regarding the date and time that the item was created or imported into the database. This can be useful, e.g., to identify CADIAX recordings that have mistakenly been imported into the wrong analysis collection, or when merging examination data from duplicated patient files.

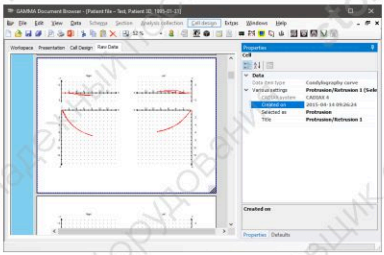


Figure 13: Creation date of data items in the Raw Data view.

3.4.2 Other improvements

- The image import in GAMMA Document Browser and CADIAS Digitizer now also accepts files in the JFIF format created by some mobile devices.
- The Image Assistant and 3D Data Assistant now properly restore their respective window size and position when they are closed and opened again.
- Inserting new sections in the Workspace of GAMMA Document Browser has been simplified, allowing insertion to the right, left, or below the currently selected section.

3.4.3 Fixed issues

- Sections in the *Workspace* of GAMMA Document Browser could be collapsed unintentionally by manually reducing their width below a certain threshold.
- After activating a print preview in the *Presentation* view, the graphical articulator settings were scaled incorrectly in the on-screen presentation.
- When copying and pasting a cell containing a CADIAS analysis in the *Workspace*, some of the display properties were not copied correctly.

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- In some cases, a patient file could no longer be saved if a previously started analysis application did not exit gracefully.
- When saving a schema design template and selecting it to be used as default for new patient files, the specified template name was not applied to the default template. Further, template names can now also include characters not usually allowed in file names, such as slashes or colons.

3.5 CADIAX

3.5.1 Point grid for additional views and printouts

To improve the readability of the coordinate system graphics displayed on the *Axis Movement*, *Tooth Kinetics*, and *Translations-Rotations* views, they now provide a point grid similar to the *CADIAX Curves* view. This also applies to the corresponding printouts.

3.5.2 Increased zoom level to 500%

In all CADIAX applications, the zoom level of the coordinate system graphics can now be raised to a maximum of 500%, from previously 250%. This can be particularly useful for differentiating condyle position measurements (CPM) in close proximity to one another or for closer inspection of near-centric movements.

This change applies to all views in CADIAX Analyzer and also to the images that can be copied to the clipboard via the *View* menu.

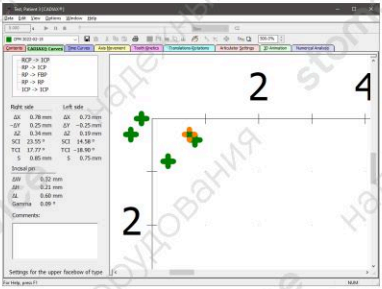


Figure 14: Easier differentiation of CPM positions with increased zoom level.

3.5.3 Fixed issues

- After having multiple curves selected in the *Contents* pane, toggling overlay mode would not be correctly reflected in the *3D Animation* view unless it was toggled again.

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– On some systems, there was a noticeable delay during CADIAX recordings, where the movement display on screen would lag behind the patient's actual movements by several seconds. This issue as well as a degraded appearance of the pictograms and text labels in the coordinate system in this regard has been fixed.

3.6 CADIAS

3.6.1 Adjustable zoom level for tracing and superimposition

In CADIAS Analyzer, it is now possible to adjust the zoom setting on the *Tracing* and *Superimposition* panes, similar to the zoom adjustment in CADIAX applications. To change the zoom level, use the menu *View > Zoom Settings* or the numeric input box provided in the toolbar. For fine adjustments, you can simply hover the mouse cursor over the latter and use the scroll wheel. Activating the *Fit to window* option will automatically keep the displayed graphics fitted to the window's size.

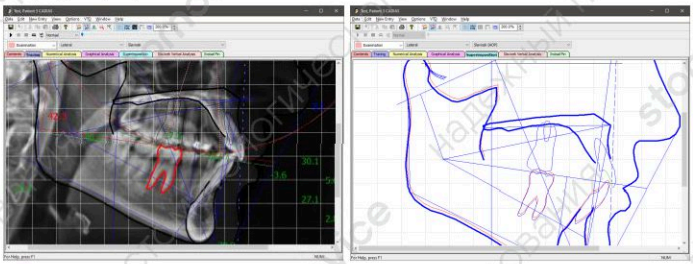


Figure 15: Zoom adjustment on the Tracing and Superimposition panes.

3.6.2 Fixed issues

– The end points of the reference line in CADIAS Digitizer did not provide any tooltips, making it difficult to tell them apart.

– The magnification factor input in CADIAS Digitizer did not handle keyboard inputs correctly.

– When recovering a digitizing from a recovery file in CADIAS Digitizer, the associated image files were sometimes not imported into the patient database of GAMMA Document Browser.

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