MEDIT Scan for Clinics

Revision 14 (10.2022)

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Introduction and Overview

Intended Use

The system is a 3D dental scanner used to digitally record the topographical characteristics of teeth and surrounding tissues. The system produces 3D scans for computer-aided design and manufacturing of dental restorations.

Indication for Use

The system is for patients who require 3D scanning for dental treatments such as:

- Single Custom Abutment
- Inlays & Onlays
- Single Crown
- Veneer
- 3 Unit Implant Bridge
- Up to 5 Unit Bridge
- Orthodontics
- Implant Guide
- Diagnostic Model

The scanner can also be used for full mouth scans. However, factors such as intraoral conditions, how skilled the technician is, and the method of using the scanner can all affect the final result.

Contraindications

This scanner is not designed to create images of the internal structure of teeth or supporting skeletal structure.

Qualifications of Operating User

This scanner should be used by someone with professional knowledge in dentistry and dental laboratory technologies.

The user of this scanner is solely responsible for determining whether or not this scanner is suitable for a particular patient case, circumstances, accuracy, completeness, and adequacy of all the data entered into this scanner and the provided software.

The user must verify the accuracy of results for appropriate treatment. The system must be used in accordance with the *User Guide* and *Cautions*. Additionally, the user should not modify the system. Improper use or handling of the system will void any warranty. If additional information on proper use of the system is required, please contact the local distributor.

Software Overview

Introduction

This image acquisition software provides a user-friendly working interface to digitally record topographical characteristics of teeth, and the surrounding tissues, using the scanner.

System Requirements for Windows

Minimum Requirements

	Laptop	Desktop
CPU	Intel Core i7-10750H AMD Ryzen 7 4800H	Intel Core i7-10700 K AMD Ryzen 7 3800 X
RAM	16 GB (only for i500, i600) 32 GB	
Graphics	NVIDIA GeForce RTX 1660/2060/3060 Above 6 GB *Radeon is not supported.	
OS	Windows 10 Pro or Home 64-bit Windows 11 Pro or Home *Windows 11 is recommended for Intel 12th Gen Core processors.	

Recommended Requirements

	Laptop	Desktop
CPU	Intel Core i7-12700H Intel Core i7-11800H AMD Ryzen 7 6800H AMD Ryzen 7 5800H	Intel Core i7-12700 K Intel Core i7-11700 K AMD Ryzen 7 5800 X
RAM	32 GB	
Graphics	Nvidia GeForce RTX 2070/2080/3070/3080/3090 Above 8 GB NVIDIA RTX A3000/4000/5000 Above 6 GB * Radeon is not supported.	
OS	Windows 10 Pro or Home 64-bit Windows 11 Pro or Home	

System Requirements for macOS

*Medit i500 is not supported on macOS.

Minimum Requirements

	i600	i700/i700 wireless
Processor	Apple M1/M2	Apple M1 Pro
RAM	16 GB	
OS	Monterey 12	

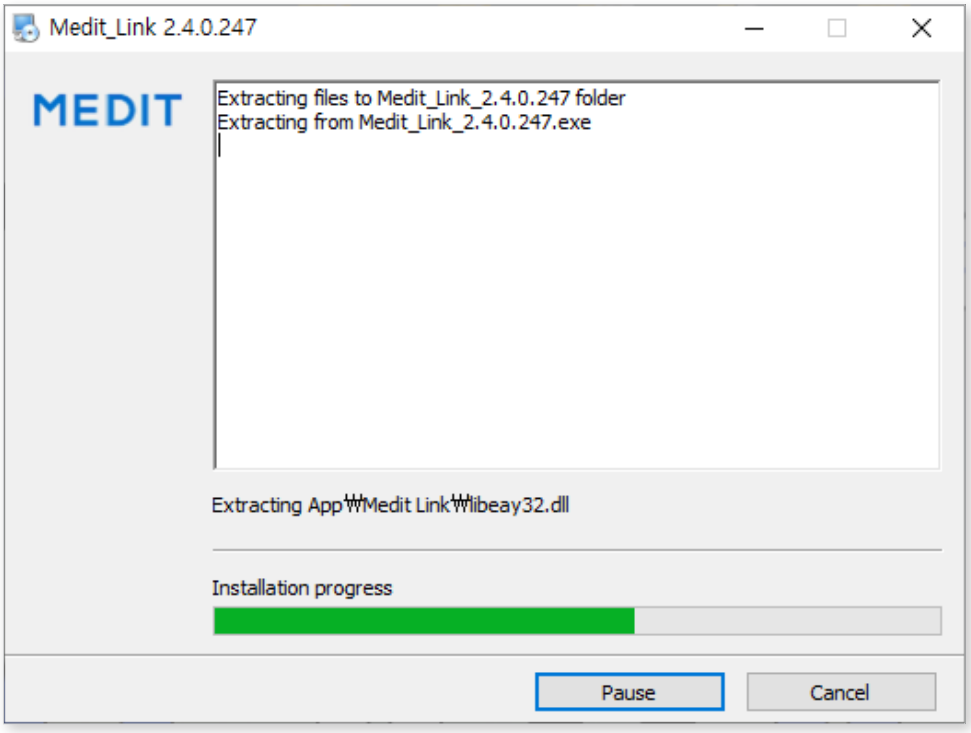
Recommended Requirements

	i600	i700/i700 wireless
Processor	Apple M1 Pro	Apple M1 Max
RAM	32 GB	
OS	Monterey 12	

Installation

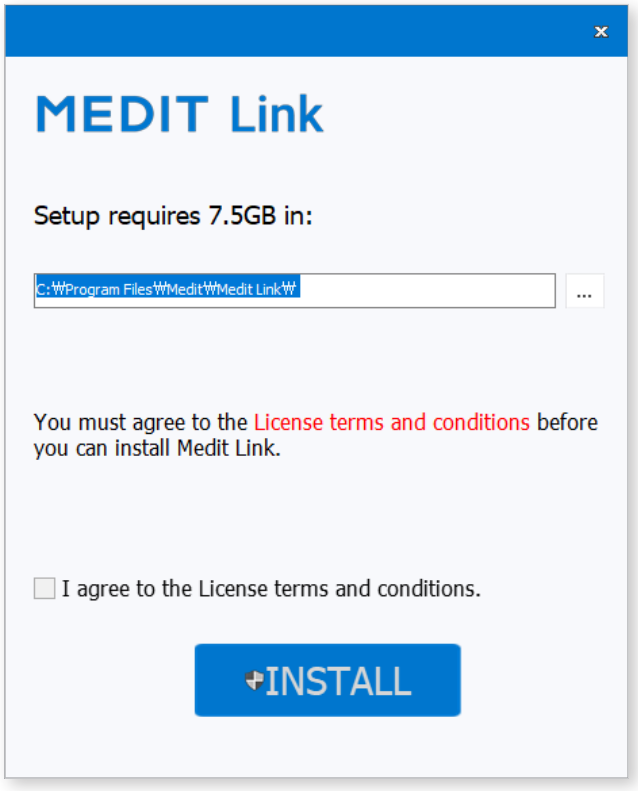
When Medit Link is installed, Medit Scan for Clinics and Medit Scan for Labs will be installed as part of the package.

① Run Medit_Link_X.X.X.X.exe.



② Select the language for installation.

③ Select the folder for installation of Medit Link. Read License Terms and Conditions carefully, and check the box stating, “I agree to the License Terms & Conditions.” Click “Install” button to proceed to the installation.



④ Since Medit Link is installed with Medit Scan for Clinics, the installation will not proceed if a scanner is connected to the computer.

⑤ The installation will continue automatically from this point, and may take a few minutes.

⑥ Do not turn off the computer until the installation is complete.

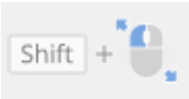
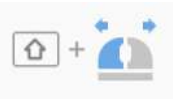
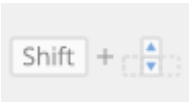
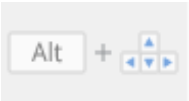
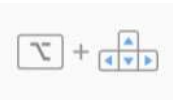
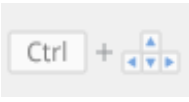
⑦ After the installation is complete, restart the computer to use Medit Scan for Clinics and Medit Scan for Labs with Medit Link. Skip this step if you do not have a scanner.

Note: The scanner may not work without restarting the computer.

3D Data Control Using a Mouse

Button	Action	Description	Image
Left	Click	Selects or deletes entities in the view screen when using the “Polyline Selection” or “Polyline Trimming” tool.	
	Drag	Selects or deletes entities in view screen when using “Brush Selection” or “Brush Trimming” tool.	
	Double Click	Zooms in and out a specific area by double-clicking on the specific area. Places data in the center by double clicking on the background.	
Wheel	Drag	Moves data around in the view screen.	
	Scroll	Zooms in and out on data in the view screen.	
Right	Click	Completes the selection or deletion of entities in the view screen when using the “Polyline Selection” or “Polyline Trimming” tool. Allows access to data view options in the Data Tree.	
	Drag	Rotates data in the view screen.	

3D Data Control Using Mouse and Keyboard

Action	Description	Windows	macOS
Left Click and Drag	Zooms in and out on the model.		
Up and Down Keys	Zooms in and out on the model.		
Left Click and Drag	Rotates the model.		
Up, Down, Left, and Right Keys	Rotates the model.		
Left Click and Drag	Moves the Model.		
Up, Down, Left, and Right Keys	Moves the Model.		

3D Mouse Support

Medit Scan for Clinics supports using a 3Dconnexion 3D mouse.

Scanner Calibration

Calibration Procedure of Scanner

Calibration must be performed periodically to acquire precise 3D models.

Calibration is required when:

- The quality of a 3D model is not good enough, or as accurate as compared to previous results.
- Environmental conditions such as temperature have changed.
- Calibration period has expired.
  Please Note: Set the calibration period at Scanner Settings > Calibration Period (Days).

The calibration panel is a delicate component. Do not touch the panel directly. Check the panel if calibration is not performed properly. If the calibration panel is contaminated, please contact the service provider.

We recommend performing the calibration process periodically. Set the calibration period at Scanner Settings > Calibration Period (Days). Default calibration period is 14 days.

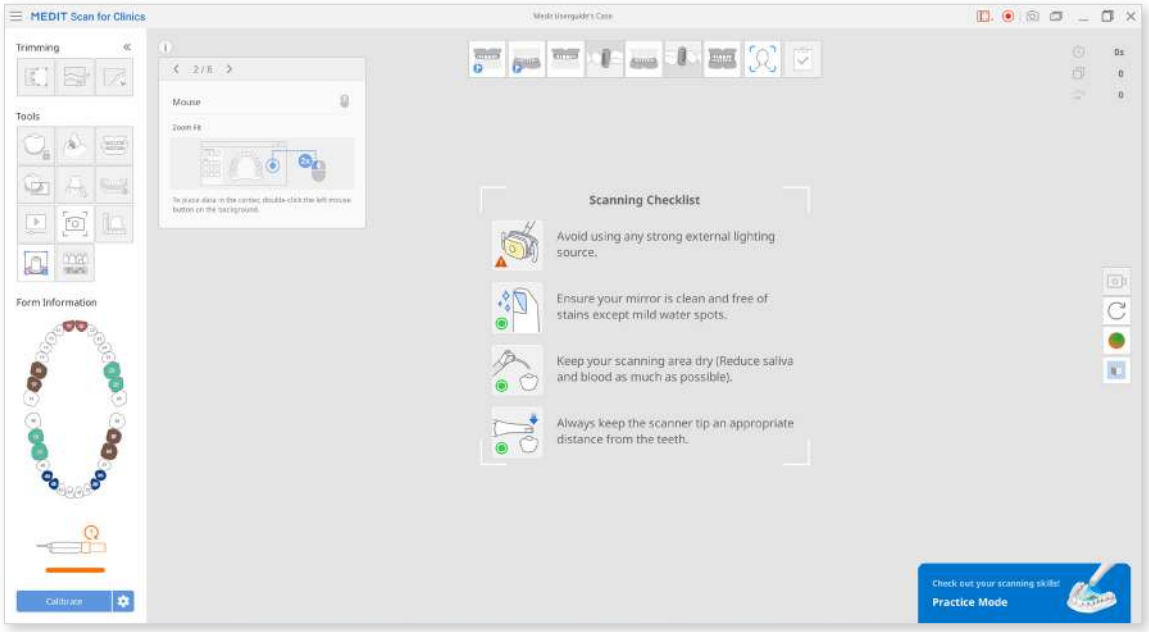
The data accuracy increases if the temperature of the scanner during calibration is similar to the temperature while scanning.

Let your scanner warm up before calibration to reach the same temperature as it is during scanning.

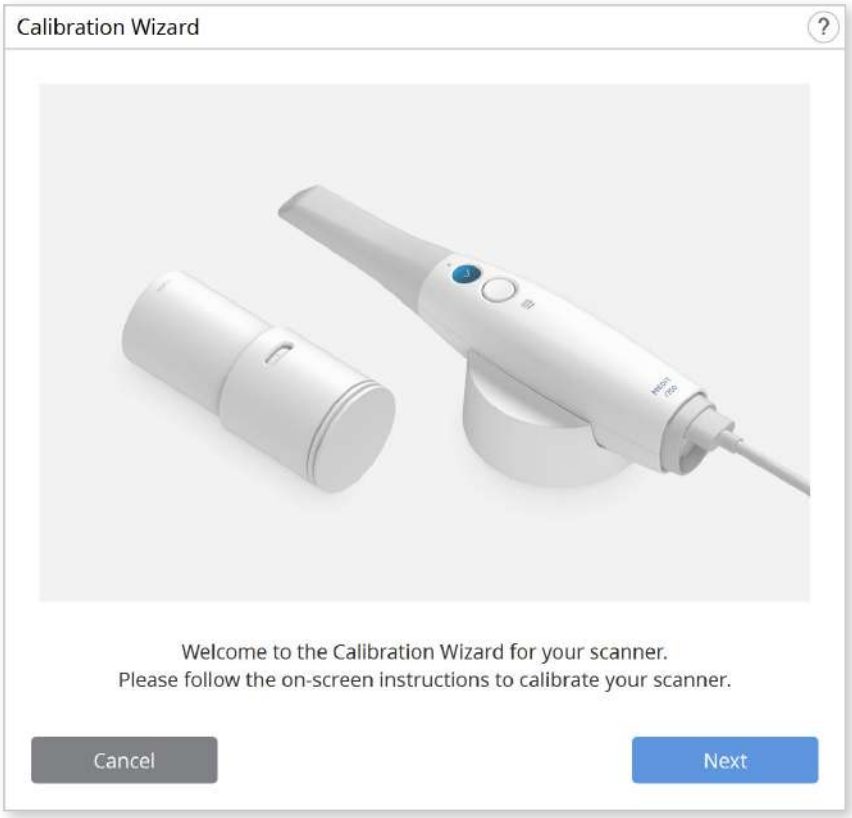
How to Calibrate the Scanner (i700 Only)

① Turn on the scanner and connect the scanner to the software.

② Click “Calibrate” located at the bottom left corner of the window.

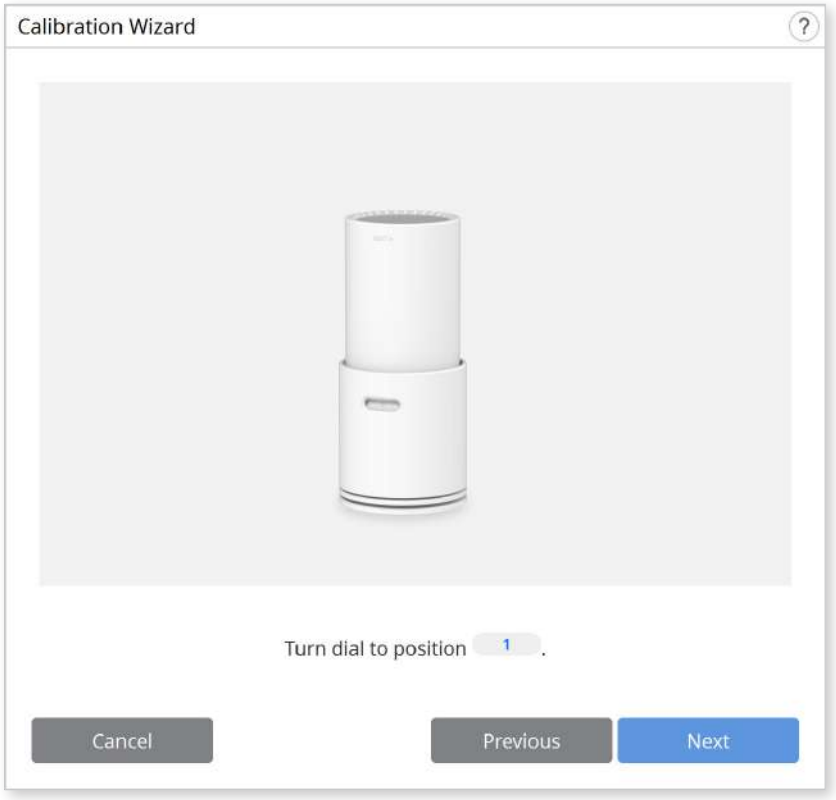


③ Prepare the calibration tool and the scanner.

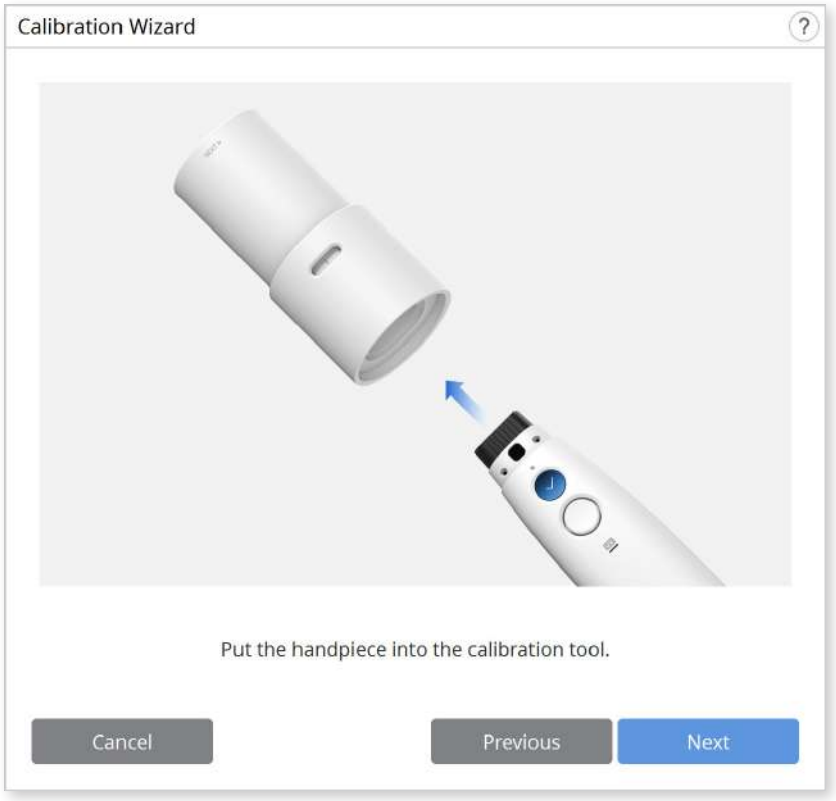


④ Turn the dial of the calibration tool to position 1.

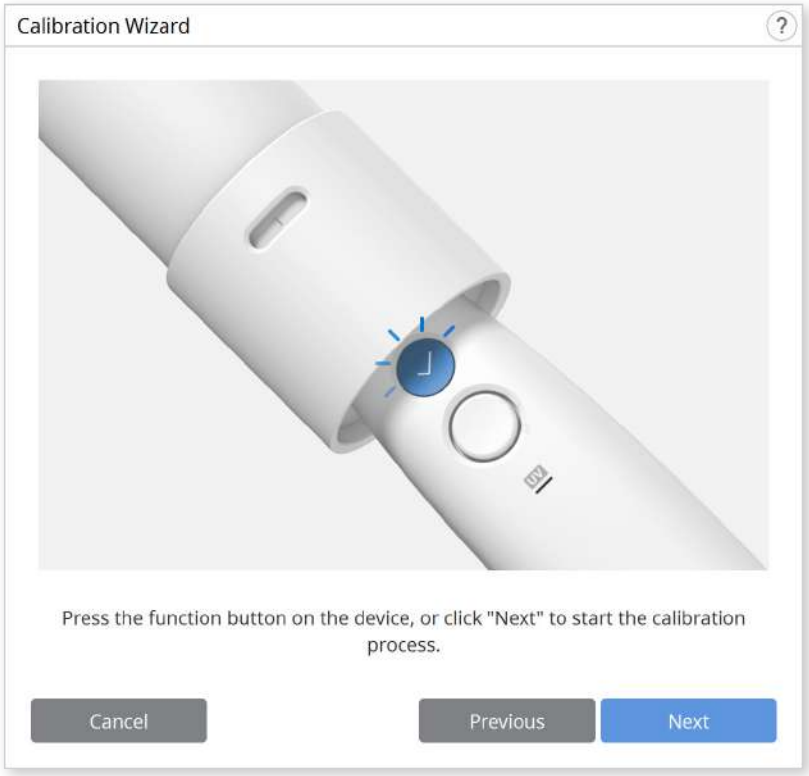
– The user can control the process (“Next”, “Complete”) by pressing the blue button on the scanner.



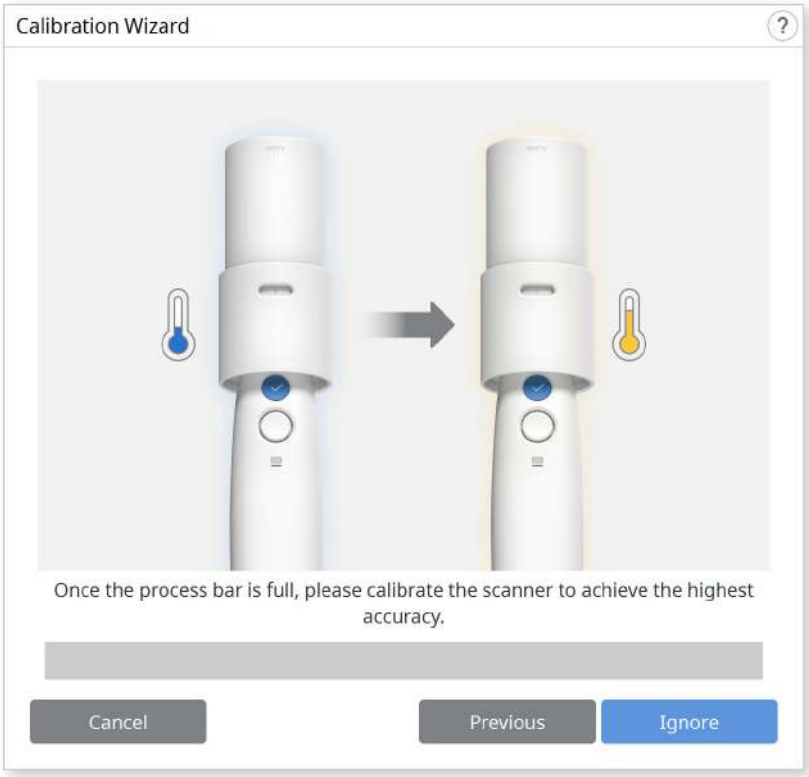
⑤ Put the handpiece into the calibration tool.



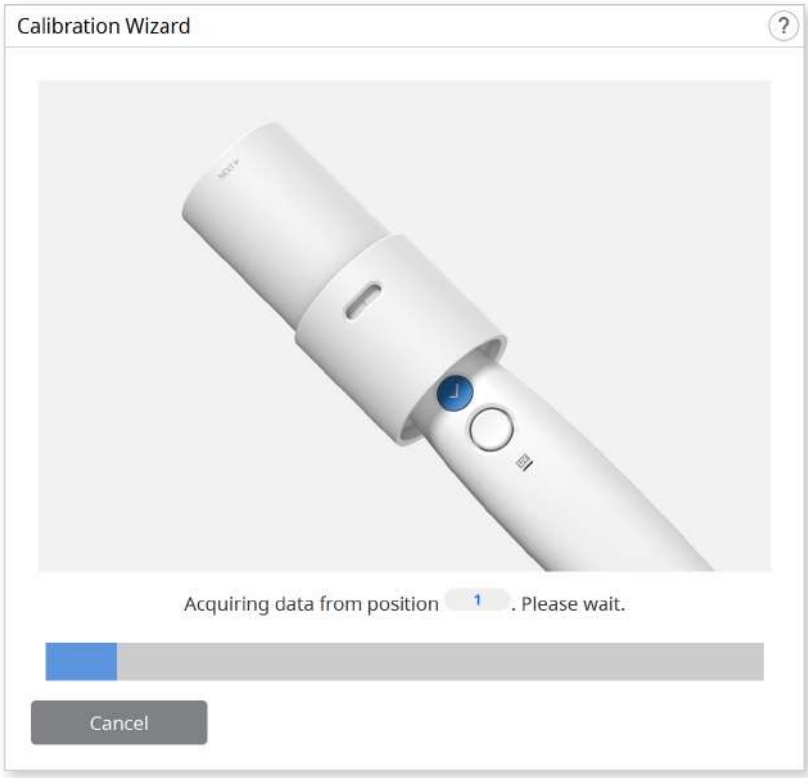
⑥ Click “Next” to start the calibration process.



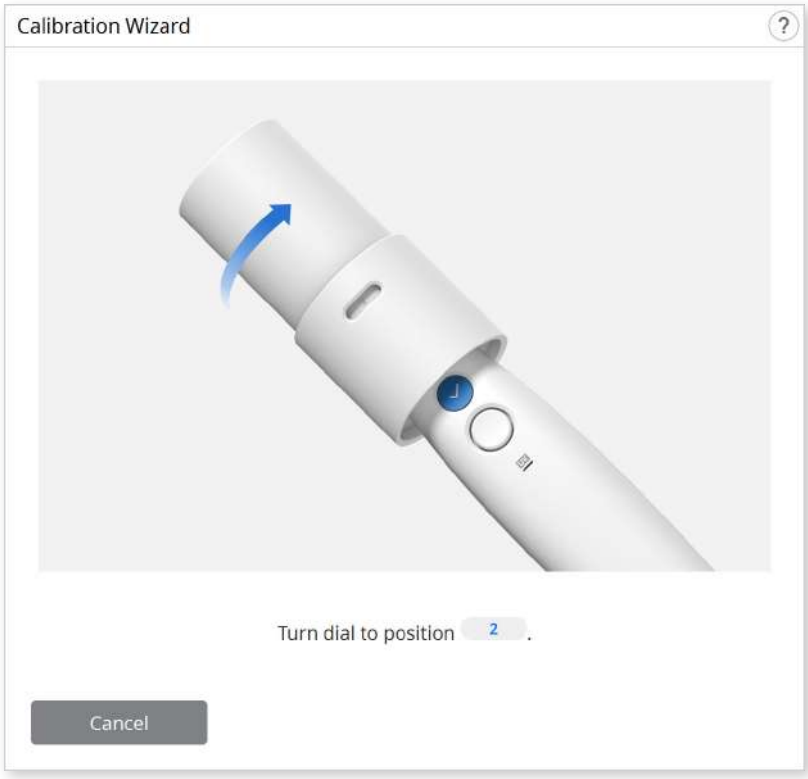
⑦ If the scanner’s temperature is too low, pre-heating will be required in order to provide the best performance.



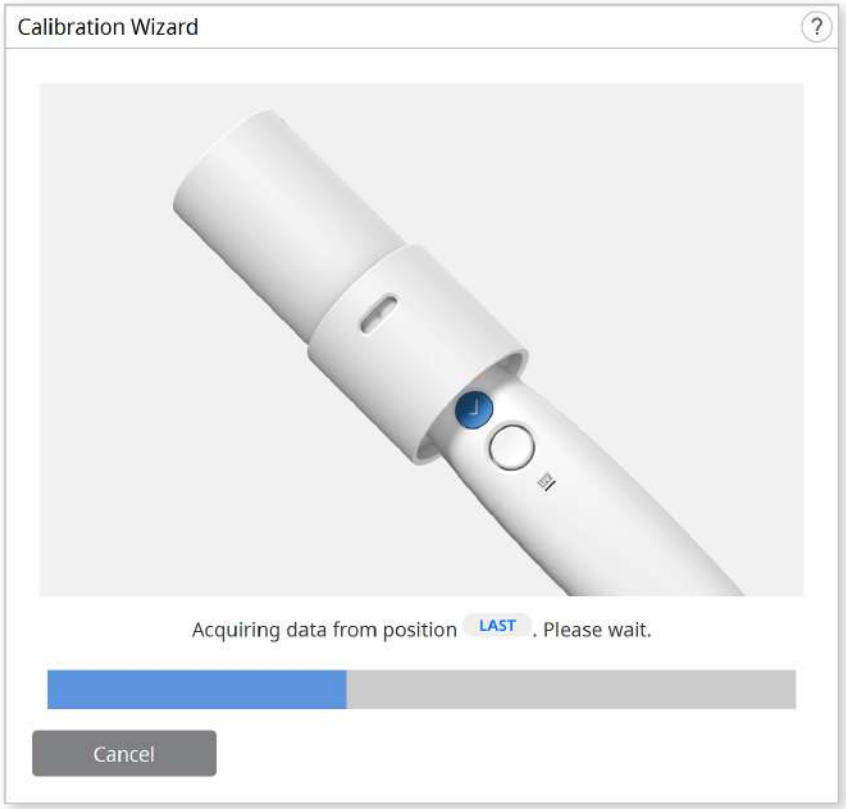
⑧ When the handpiece is mounted correctly, the system will automatically acquire the data at the correct position 1 .



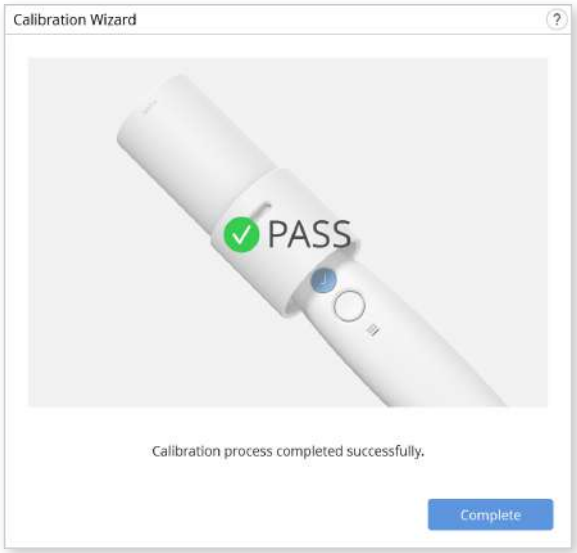
⑨ When data acquisition is complete at position 1 , turn the dial to the next position.



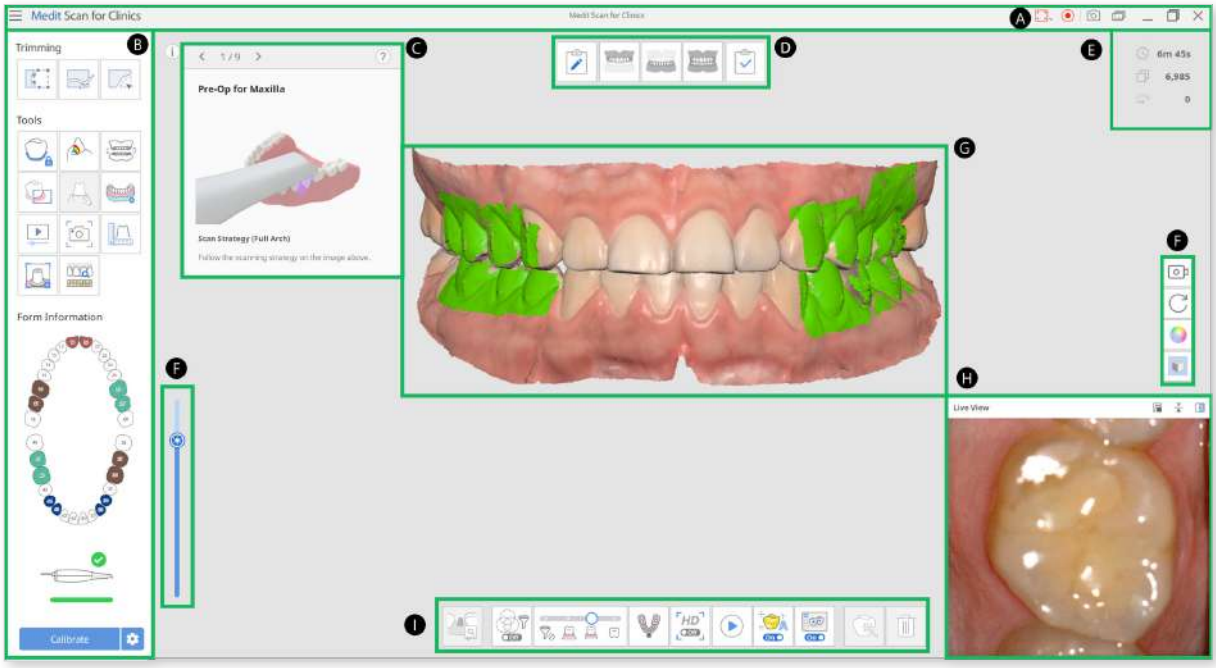
⑩ Repeat the steps for positions 2 - 8 and the LAST position.



⑪ When data acquisition is complete at the LAST position, the system will automatically calculate and show the calibration result.



User Interface



A. Title Bar
B. Main Toolbar
C. Information Box
D. Scan Stage
E. Scan Information
F. Side Toolbar
G. Model View
H. Live View Window
I. Command Options

The title bar may look different, and the image can appear in different sizes according to the screen resolution on macOS.

Title Bar

The Title Bar consists of following options:

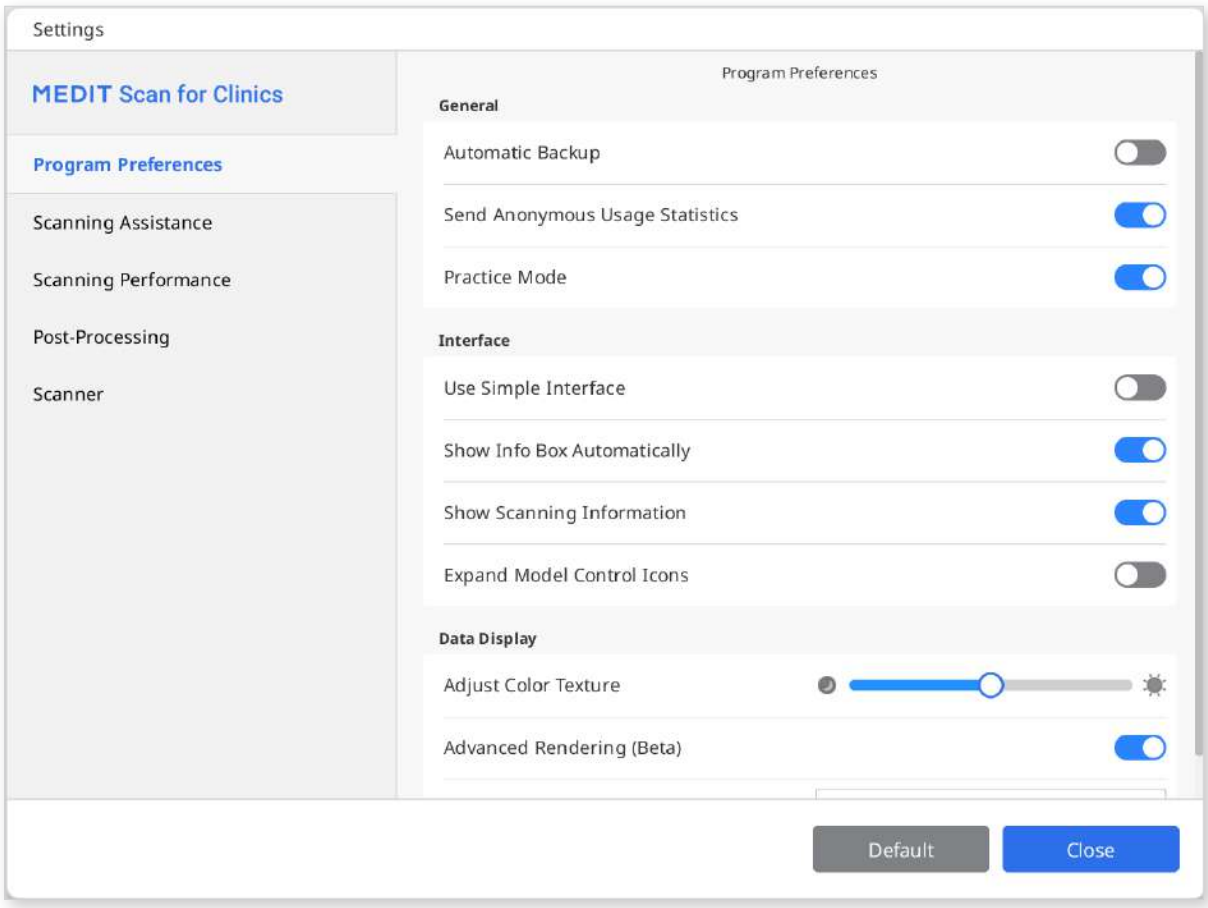
Menu	Includes tools to manage the project and change settings of the application. It also shows details of the application.
Patient Information	Shows information of the current patient file.
Select Video Capture Area	Selects which area of the screen to record video. The user can record the entire window of the program, or an area of 3D view.
Start Video Recording	Records the complete window or 3D model view window of scanning software. This video file can assist in communication between the patient, clinic, and laboratory.
Screenshot	Captures the entire screen or 3D model view window of the scanning software. This video file can assist in communication between the patient, clinic, and laboratory.
Screen Capture Image Manager	Image captures are saved automatically to Medit Link. Also, manages the captured screen images. The user can delete the images or export them to the local drive.
Minimize	Minimizes the application.
Maximize or Restore	Maximizes or restores the application.
Exit	Saves the current model and terminates the application.

Menu

Click on the  button to see all the functions in the Menu.

	Save	Save all changes in the current case.
	Settings	See options for setting environment, such as scan options.
	User Guide	Open the user guide.
	About	See application details, version number, and copyright information.

Settings



1. **Program Preferences**

General

Automatic Backup	Save the current work temporarily. Backup data will be used for recovery if the program stops unexpectedly without saving.
Send Anonymous Usage Statistics	Set whether to start and stop sending anonymous usage statistics to Medit.
Practice Mode	Practice scanning by using the practice model provided by Medit. If there is no acquired scan data, a banner will be displayed in the lower right corner of the program window. Click the banner and go to Practice Mode. *Unavailable with i500

*** Collecting Anonymous Statistics**

Medit is striving to constantly improve the product and user experience by collecting certain information such as:

- Hardware and software configurations, such as OS, graphics card, etc.
- Patterns and trends in how our software is used, such as frequency and performance.
- Diagnostic information.

The usage statistics will help the development team better understand user requirements and make improvements in future releases. We will never collect personal information, such as your name, company name, MAC address, or any other information related to personal identification. We cannot and will not reverse-engineer any collected data to find specific details concerning your projects.

Interface

Use Simple Interface	Simple interface provides minimum features to acquire and process scan data.	
Show Info Box Automatically	When on, automatically show the Info Box in the top left corner of the window while working with the program.	
Show Scanning Information	Scan Time	Display the scan time for each stage or the total scan time.
	Number of Frames	Display the number of images taken by the scanner for each stage or the total number.
	Scan Speed	Display the current scan speed. Shows the scan time, speed, and number of images.
Expand Model Control Icons	Allow the user to add icons of panning, zooming, and zoom fit on the right side.	

Data Display

Adjust Color Texture	Adjust the brightness of the 3D model. The color of the 3D model will be optimized in the image acquisition software. When viewing data using other software, the resulting colors may be slightly different from the image acquisition software.
Advanced Rendering (Beta)	Display vivid 3D data with advanced technology applied.
Reliability Map Color Scheme	Allow the user to set the color of reliable data as blue or green.

2. Scanning Assistance

Smart Scan Guide	Detect abnormal behavior during scanning and provide appropriate guidance.
Smart Arrow	Show blue arrows to demonstrate areas with low reliability based on the gathered scan data.
Warning for External Light (Beta)	Display a warning when an external light source affects the scan.
Warning for Occlusal Data	When the user clicks “Complete” after scanning the data, the program checks the data and its alignment status acquired during the occlusion scan stage.
Enable Audio Feedback	Indicate the status of the scanner through different sounds.
Sound Library	Use various file formats for audio feedback such as .wav, .mp3 and .wma. All audio files are added to the list. For more detailed information, please refer to “*Change Sound.”*

3. Scanning Performance

Use GPU	Improve overall computing performance using the GPU of a graphics card.
A.I. Engine	Select the data for Smart Scan Filtering. We recommend using 2.0 for more accurate filtering.
Prevent Scan Data Misalignment	Align scan data using additional information when acquiring scan data with the Smart Scan Filtering option on.
Extend Dynamic Range	Uses peripheral data to assist scanning the difficult-to-scan areas.
Smart Stitching Interval	Save scan data of a non-continuous area separately. When acquiring data of a non-continuous area during scanning, you no longer have to return to the area where the original scanning stopped. The data is recognized as separate scan data and saved accordingly. During scanning, if separate scan data is acquired as a continuous area, the data will be aligned automatically. You can also align data manually or delete unsorted data.
Use A.I Glitch Filtering in Live View (Beta)	Filter glitching image acquired while scanning. The results can be affected by the strength of the scanner connection signal. * Available only with i700 wireless
Global Soft Tissue Filtering	Delete the soft tissue globally. Deletion process is performed during scanning and when exiting or changing the scan stage.
Active Noise Filtering (Beta)	Effectively remove noise from the data.

4. **Post Processing**

File Size	Allow the user to control the size of results file. When the slider bar moves to left, the result file is generated faster and file size will be smaller. User can select the size of result file according to post-processing. In general, a smaller result file is suitable for orthodontic applications.
Roughness	Allow the user to control the surface roughness of result file. When the slider bar moves to left, the surface roughness is less and result will be smoother. User can select the surface roughness of the results file for post-processing accordingly.
Optimize Occlusion Alignment	Optimize the occlusion alignment. Move the slid bar to the left in order to loosen the occlusion alignment. Move the slid bar to the right in order to strengthen it.
Use Neighboring Colors for Filled Holes	Turn this option on if you would like to fill in the empty spaces in scan data with the color of the data located on its sides.
Clean Out Data Layering (Beta)	Recognize and remove double-layering or multiple-layering areas automatically while optimizing scan data.
Use Background Processing	Process data in the background when no data is acquired or manipulated on the stage.

5. **Scanner**

Start Automatic Scan	Start the scan automatically without pressing the button upon entering any scan stage. If this option is set to off, the scan will be started by the button on the scanner.
Calibration Period (Days)	Set the calibration period of the scanner.
Initiate Scan with HD Scan	Always start the scan in HD mode.
Scan Light	Set scan light as blue or white. * i500 Only
Minimum Scanner Temperature Notification	Scanner temperature checked when scanning starts. If the scanner temperature drops below the standard, scanner will begin to preheat. *Unavailable with i500
Turn UV On Automatically	Turn on the UV light automatically when the scanner is connected, or when scanning stops. It will be turned off automatically after the set time. *Unavailable with i500, i600
UV Operation Time	Set the UV operation time. *Unavailable with i500, i600
Turn On Vibration Feedback During Scanning	Turn on the vibration to be notified of misalignment, etc. *Unavailable with i500, i600
Anti-Fogging Fan Mode	Provide options to select fan mode to effectively prevent fogging when the scanner temperature drops. *Unavailable with i500
Scanning Experience	Select whether to display the screen more smoothly or acquire scan data with the best performance. * i700, i700w Only

Scan Button Actions

Double Click	Define double-click action of the Scan button on the scanner.
Triple Click	Define triple-click action of the Scan button on the scanner.
Long Click	Define long-click action of the Scan button on the scanner.

When on Battery

Change to Sleep Mode After	Change the Sleep Mode setting when using the battery to your desired number of minutes. Turn off Scanner After * i700w Only
Turn off Scanner After	Change when to turn the scanner off when using the battery to your desired number of minutes. * i700w Only

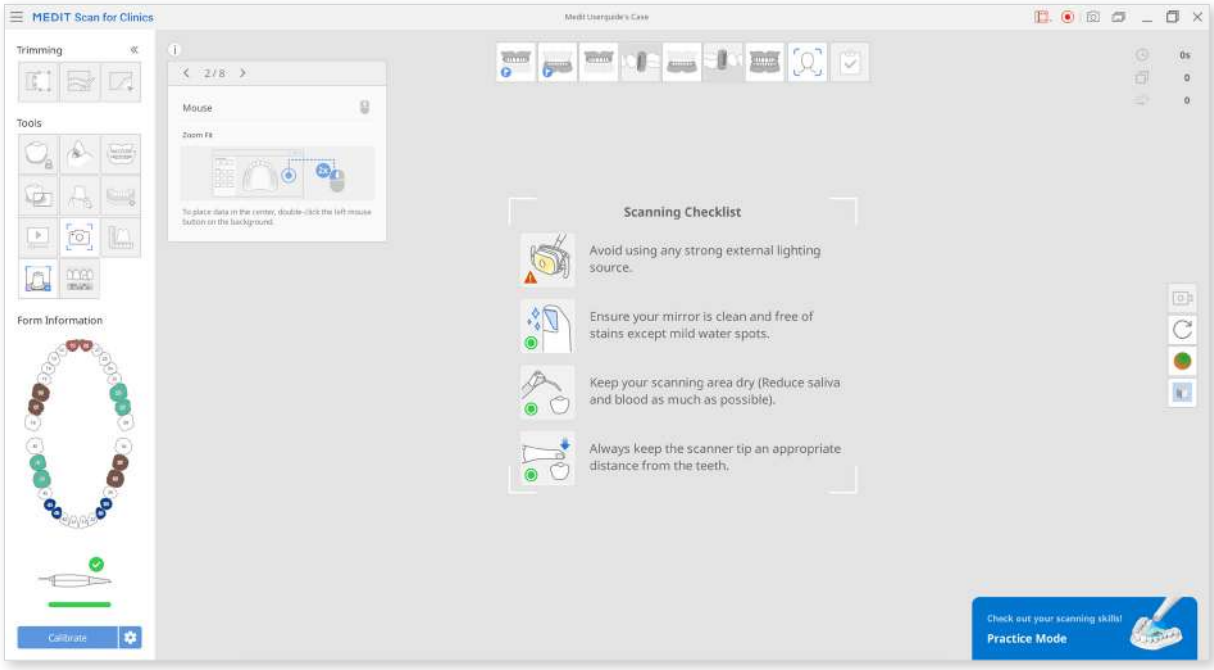
When Plugged In

Turn off Scanner After	Change when to turn the scanner off when plugged in to your desired number of minutes. * Unavailable with i500.

Scanning Check-List

- Avoid using any strong external light source.
- Ensure the mirror is clean and free of stains.
- Keep the area being scanned dry (reduce saliva and blood as much as possible).
- Always keep the scanner tip at an appropriate distance to the teeth.

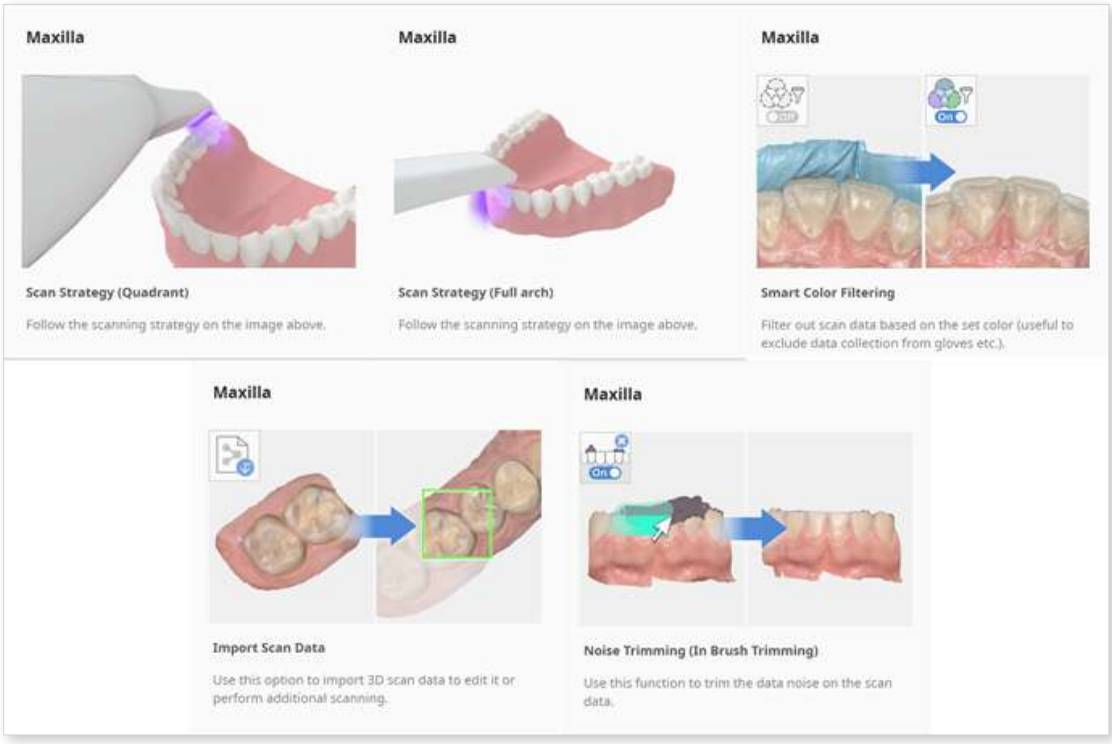
The reminder is also provided at the overview stage before the scanning process has started.



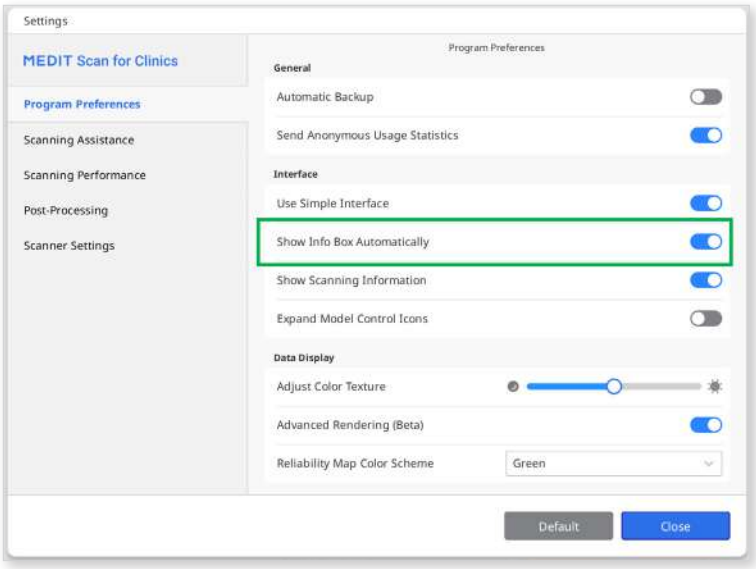
Information Box

Scanning and editing processes are accompanied by short explanations and visual aids aimed at explaining major functions and introducing the tools that can be useful at this specific stage.

For general scan stages, the information is displayed in a random order to expose users to various functions.



Go to Settings > Show Info Box Automatically to control the information system display options.

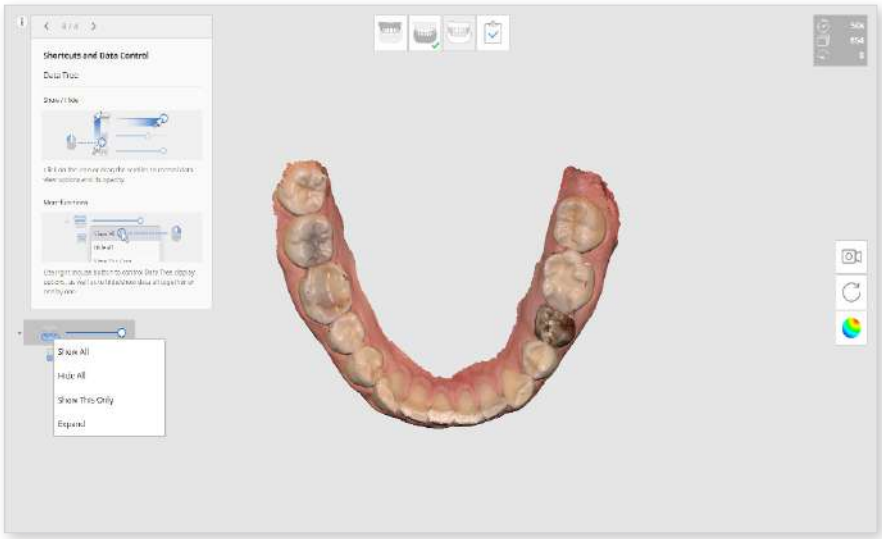


Data Tree

Data Tree at the overview stage allows to control the data display options.

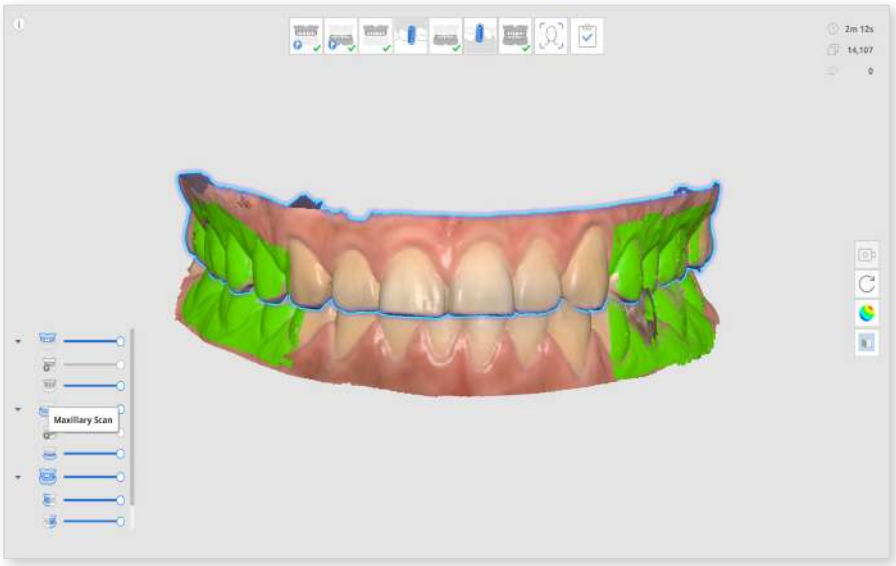
① Click right mouse button on the Data Tree to control the following options:

- Show All
- Hide All
- Show This Only
- Expand/Collapse



② Use the slider to control the opacity of the data.

③ Hovering the mouse Hovering over the data will highlight the corresponding area. You can easily differentiate and examine the data you want to inspect.



Click on the corresponding icon to show or hide the data. Drag the mouse across all of the icons to show or hide them.

Live View Window

It displays the 2D image from the scanner and provides useful tools.

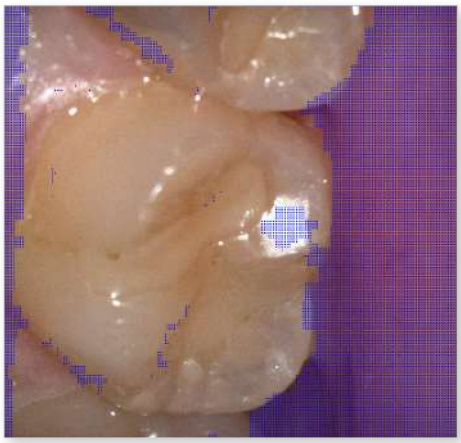
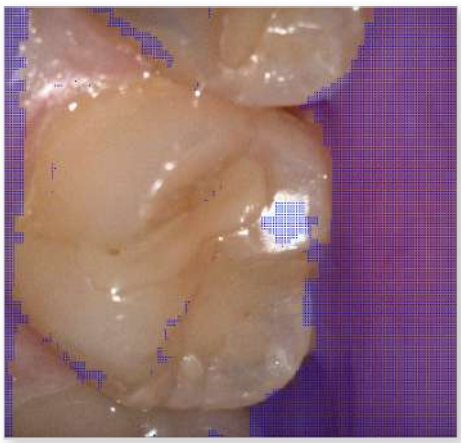
Live View window can be moved from the fixed position and the user can relocate it. The user can also change the Live View window size when the window is detached.

Additionally, useful tools to control the Live View image, such as Flip Image and Show/Hide Unscannable Area are also offered.

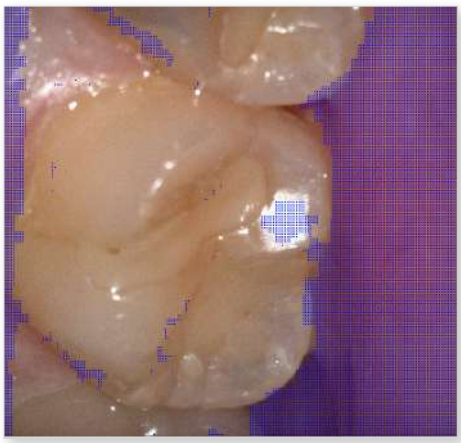
Toolbox

	Custom Scan Area	Adjust the area to acquire scan data. You can choose between the three modes we provide or adjust as you want.
	Detach Live View Window	Detach the Live View window from the fixed position. The window size can be changed when the window is detached.
	Reset Live View Window	Bring the Live View window to the default position and size.
	Flip Image	Flip the image on the screen. This is useful when performing intraoral scanning from the top of the patient's head.
	Show/Hide Unscannable Area	Turn on or off the visibility of the unscannable area. The unscannable area is shown with blue masking.

Custom Scan Area

Standard	Small
	
Extra Small	**Custom**
	

Show/Hide Unscannable Area

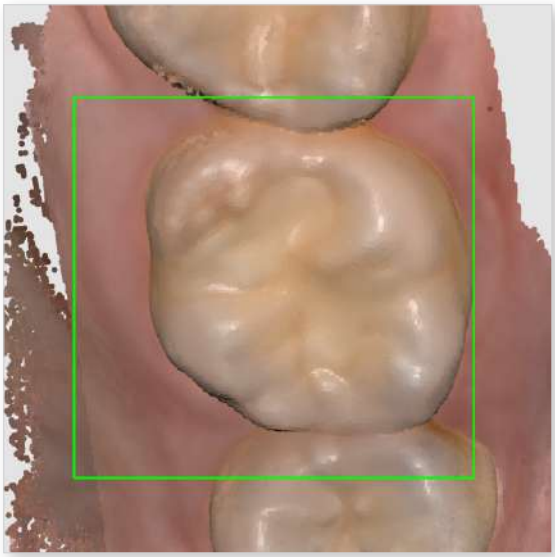
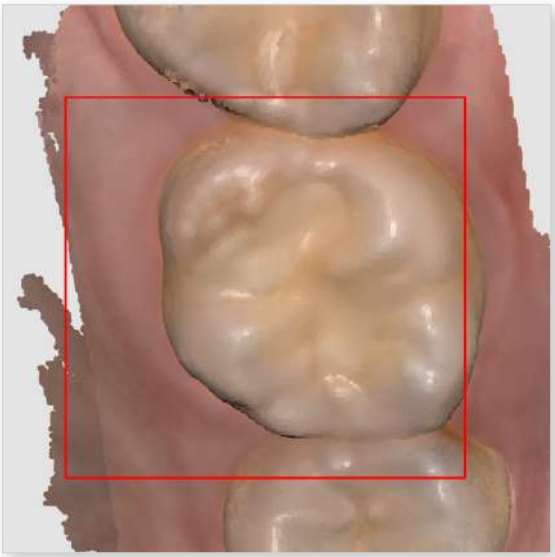
Show Unscannable Area	Hide Unscannable Area
	

Model View Screen

Displays the captured 3D scan data and various other tools, such as Scan Stage, Live View window, Function Option, Sub Toolbar, and Guide Message.

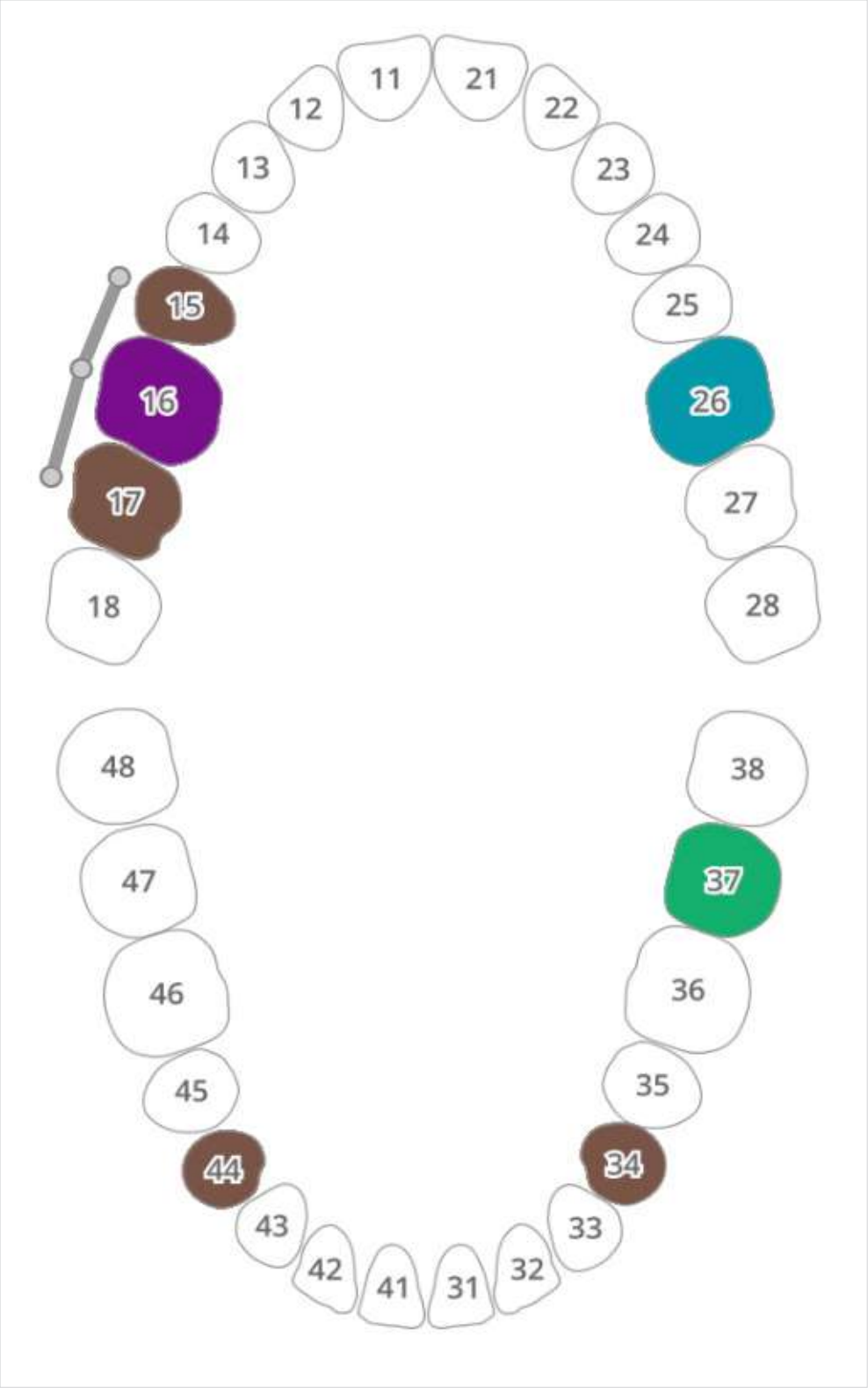
Indication During Scanning

The color of the rectangular box which appears during scanning indicates the scan status.

Green Rectangle	Red Rectangle
	
Scanning and alignment is optimal.	Alignment is lost. Reposition the scanner tip in the area being scanned in order to continue scanning.

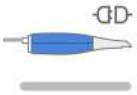
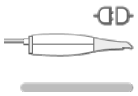
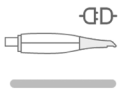
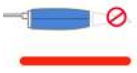
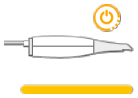
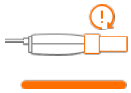
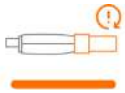
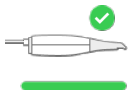
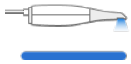
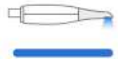
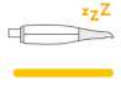
Form Overview

Shows the information of teeth needing treatment.



Scanner Status

The following are indications of the scanner status:

Not Connected		The scanner is not connected.	
			
Hub Connected	The hub is connected.		
-	-	-	
Scanner Disconnected	The hub is disconnected from a scanner.		
-	-	-	
No Tip		The tip is not mounted.	
-			
Connecting		The scanner is trying to connect.	
			
Rebooting		The scanner is rebooting.	
			
Calibration Required		The scanner needs to be calibrated.	
			
Ready		The scanner is ready for use.	
			
Scanning		The scanner is currently in the process of scanning.	
			
Sleep		The scanner is in sleep mode.	
	-	-	
Overheating		The scanner is overheated.	
			

Major Tools and Functions

The following functions accompany the scan stages. They are located at the bottom of the window.

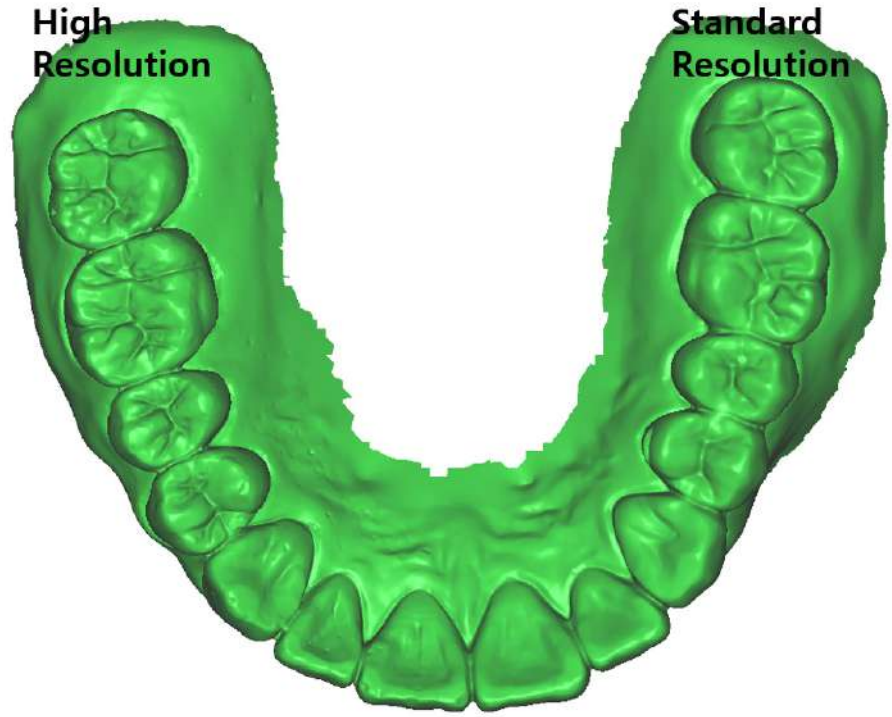
Scan Control		
	Start	Starts the scan. The user can also start the scan by using the blue button on the scanner.
	Stop	Stops the scan. The user can also stop the scan by using the blue button on the scanner.
	Optimize	Aligns 3D images for a more accurate scan. All the noise will be removed after optimization.
	High Resolution Scan	Acquires high resolution data for the entire scan or an single area. The combined result of utilizing both high and standard resolution scanning is merged smoothly during post-processing. *Unavailable with i600
	Metal Scan	When on, allows user to automatically detect and apply parameters for metal surfaces. Turn off the option when scanning a gypsum dentiform model without any metal surface.
	Import Scan Data	Imports 3D data from Medit Link. Make sure to attach the files to a case in Medit Link before proceeding. If importing data from a third-party scanner, the user will still be able to rescan the erased sections, or perform additional scanning.
	Delete	Deletes all 3D images. It also deletes the current stage data.
	Undo	Undoes the previous scan.
	Redo	Redoes the previous scan.

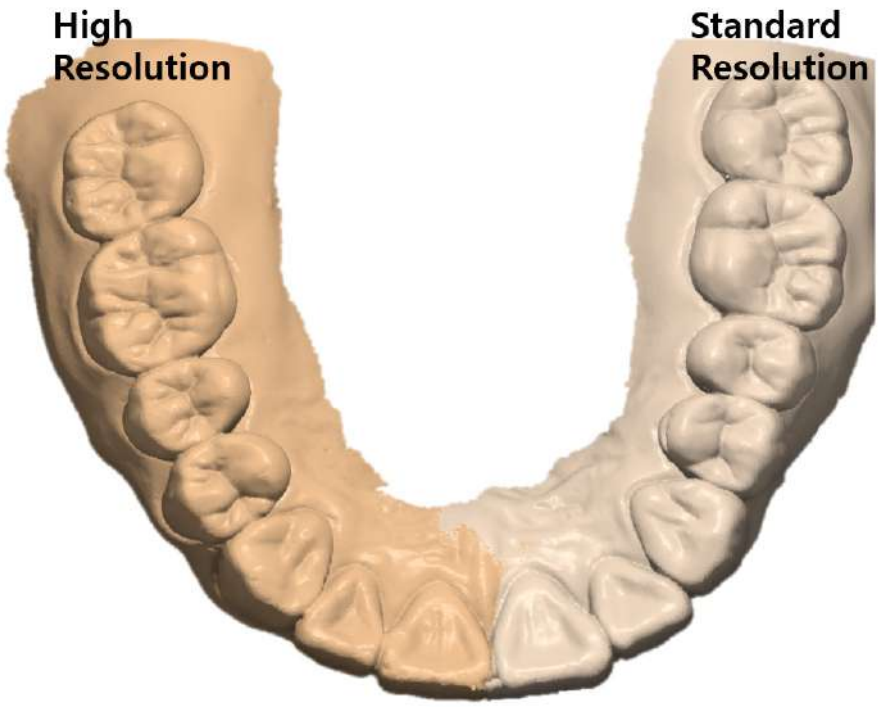
Filtering Options			
	Smart Scan Filtering	This feature removes unnecessary soft tissue data, which can be the biggest challenge while scanning. Three filters are available for your convenience.	
		No Filtering	Does not filter the soft tissue. Useful for edentulous arch or plaster model cases.
		Teeth + Gingiva	Removes soft tissue interfering with the scan, leaving only the necessary teeth and gingiva.
		Intense Teeth + Gingiva	Removes soft tissues interfering with the scan in real-time, leaving only the necessary teeth and gingiva.
		Teeth	Removes all soft tissues and gingiva, leaving teeth only. Effective when scanning only the teeth as an additional scan, after using the Teeth + Gingiva filter for initial scanning.
	Smart Color Filtering	Helps filter out data by defining its color. Manages scan filtering options for up to three colors.	
	Smart Stitching	Regardless of your scanning strategy, freely acquire the data and align the parts together. The data will be aligned automatically during scanning. You can do it manually after scanning as well.	

High Resolution Scan

*Unavailable with i600

	Acquires high resolution data for the entire scan or a single area. The combined result of utilizing both high and standard resolution scanning is merged smoothly during post-processing.

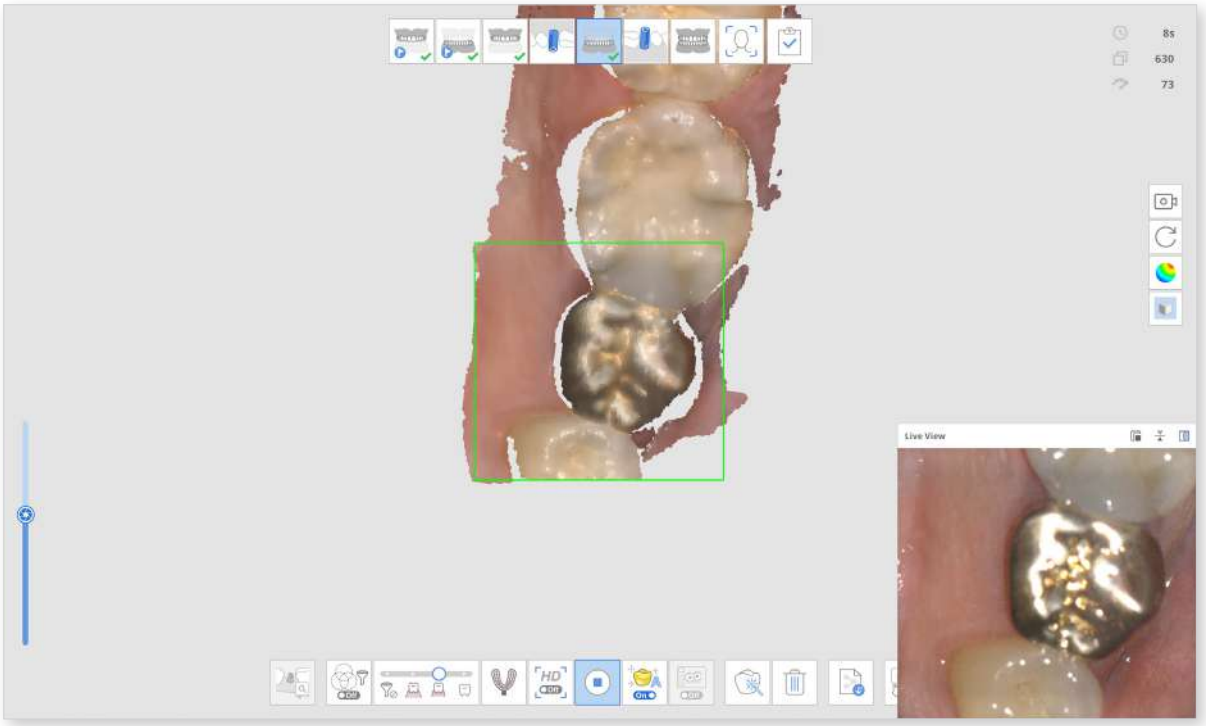




Metal Scan

	Metal Scan	When on, allows user to automatically detect and scan metal surfaces.

Partially scanning metal surfaces is possible when using the “Metal Scan” tool. The corresponding button appears at the bottom of the screen during all scanning stages.

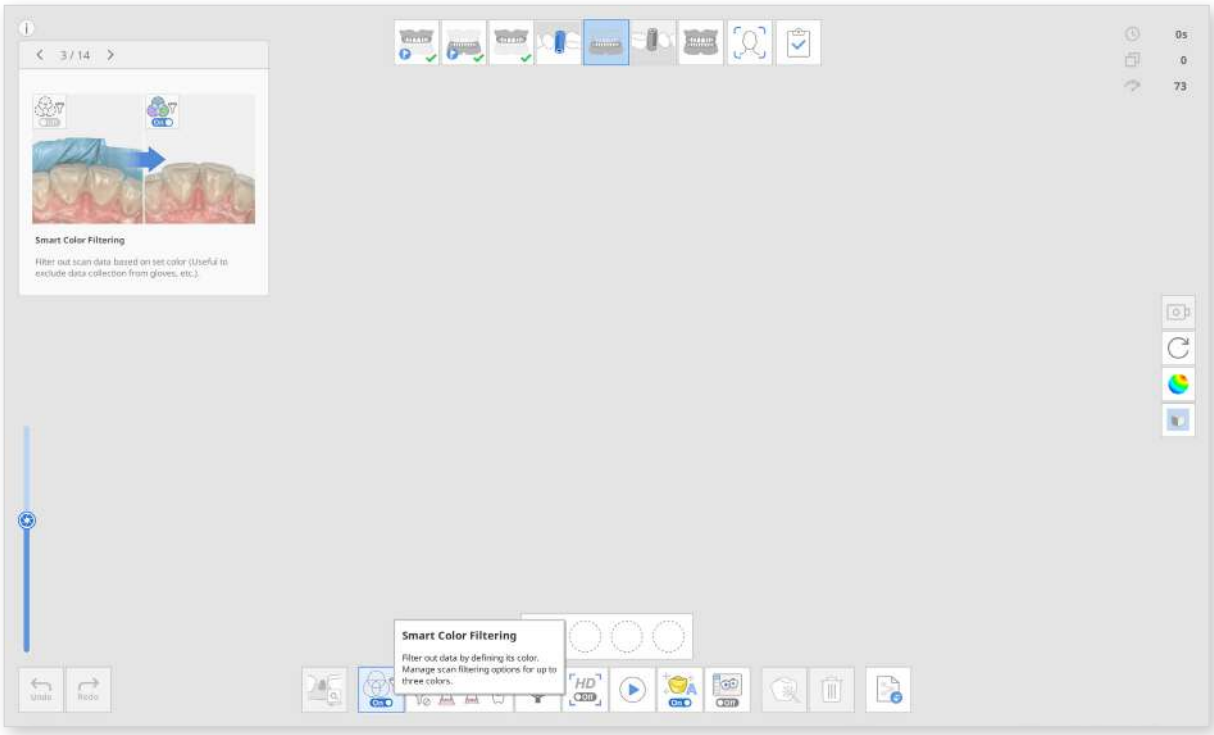


Turn on the “Metal Scan”  tool either before starting the scan, or during the scanning process.

Smart Color Filtering

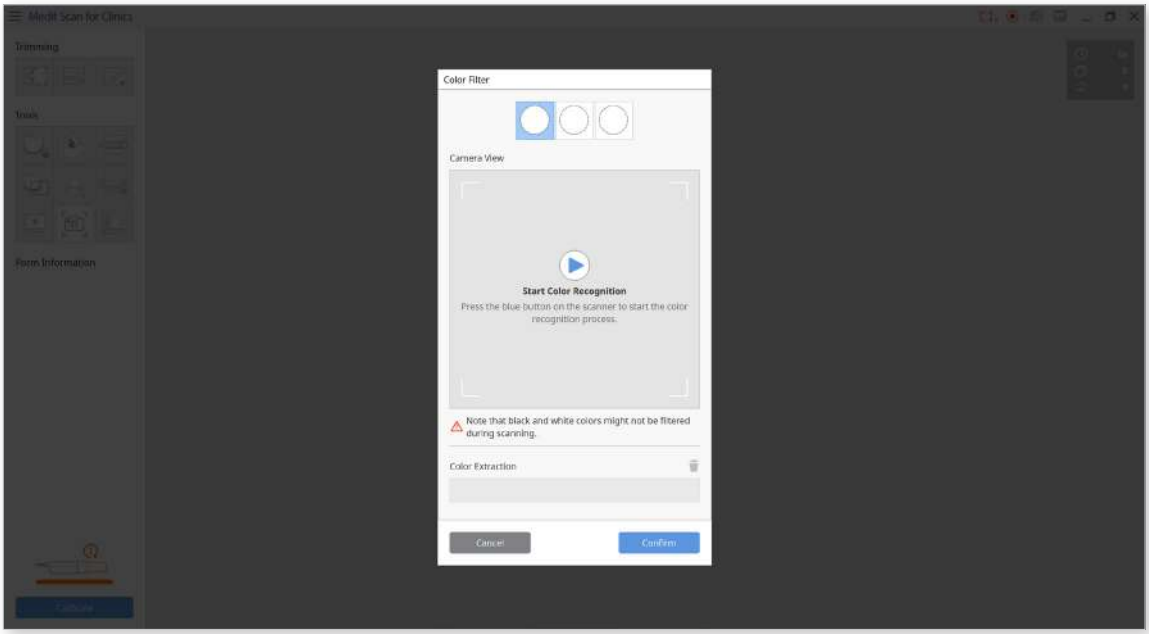
	Smart Color Filtering	Helps filter out data by defining its color. Manages scan filtering options for up to three colors.

The “Smart Color Filtering” option prevents scanning of alien materials (e.g. gloves, etc.) in the intraoral environment by registering their colors. Once the colors are registered and the option is turned on, the colors will automatically be filtered out during the scanning process.

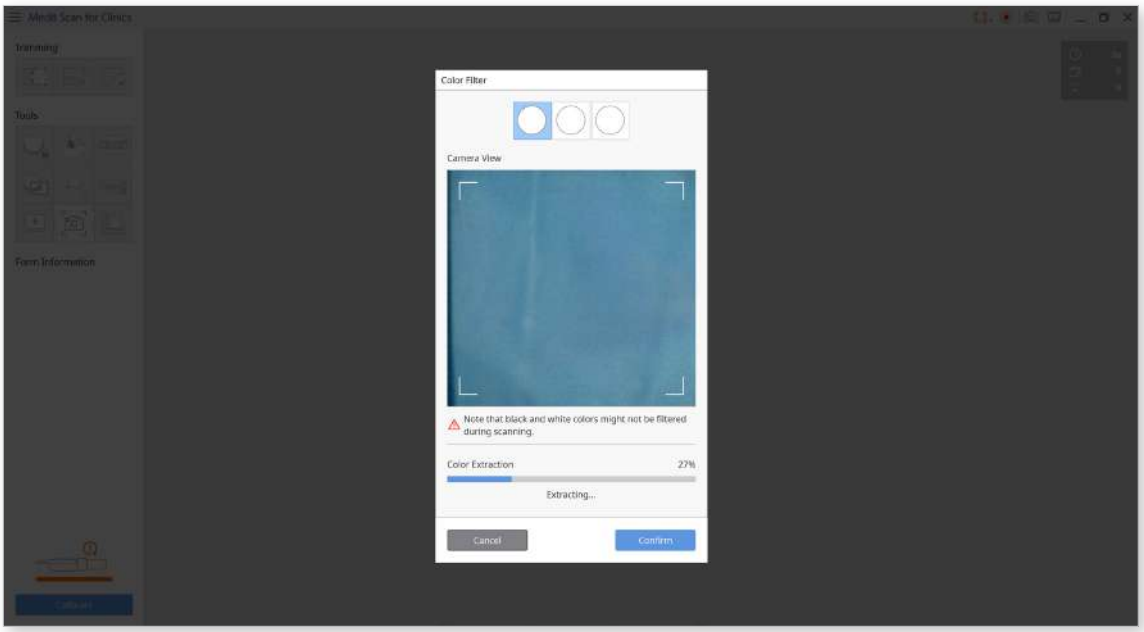


① Turn on filtering by clicking “Smart Color Filtering”  located at the bottom of the window.

② To register a new color, click “Add a Color” .



③ Prepare the material to be filtered out. Then, press the blue button on the scanner to start the color recognition process.



– Either delete the registered color or rescan it.

④ Click “Confirm” to register the color and complete the color registration.

⑤ Turn the function off by clicking the icon again.

The registered colors will be saved for all next sessions unless the user decides to change them.

The registered colors will be displayed on the icon:  .

Smart Stitching

For 3D scanning of video recording, it is important to perform a seamless scanning without losing any focus of the camera during acquisition of scan data. This process is highly influenced by proficiency of users and the intraoral condition of patient. However, this is no longer a problem with “Smart Stitching.”

“Smart Stitching” can be applied while scanning in the following stages:

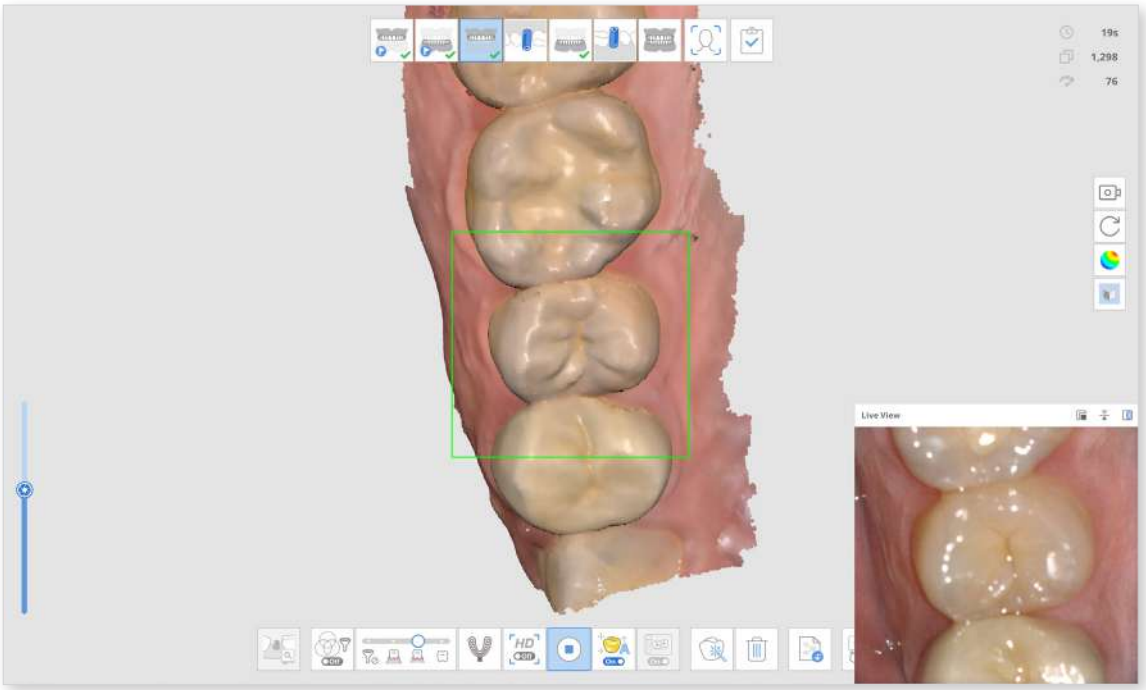
- Pre-Op for Maxilla
- Pre-Op for Mandible
- Maxilla
- Mandible

Note: This function is excluded in some functions such as “A.I. Abutment Matching” ,”Impression Scan”, and “Relined Denture Scan.”

Smart Stitching – How-To Guide

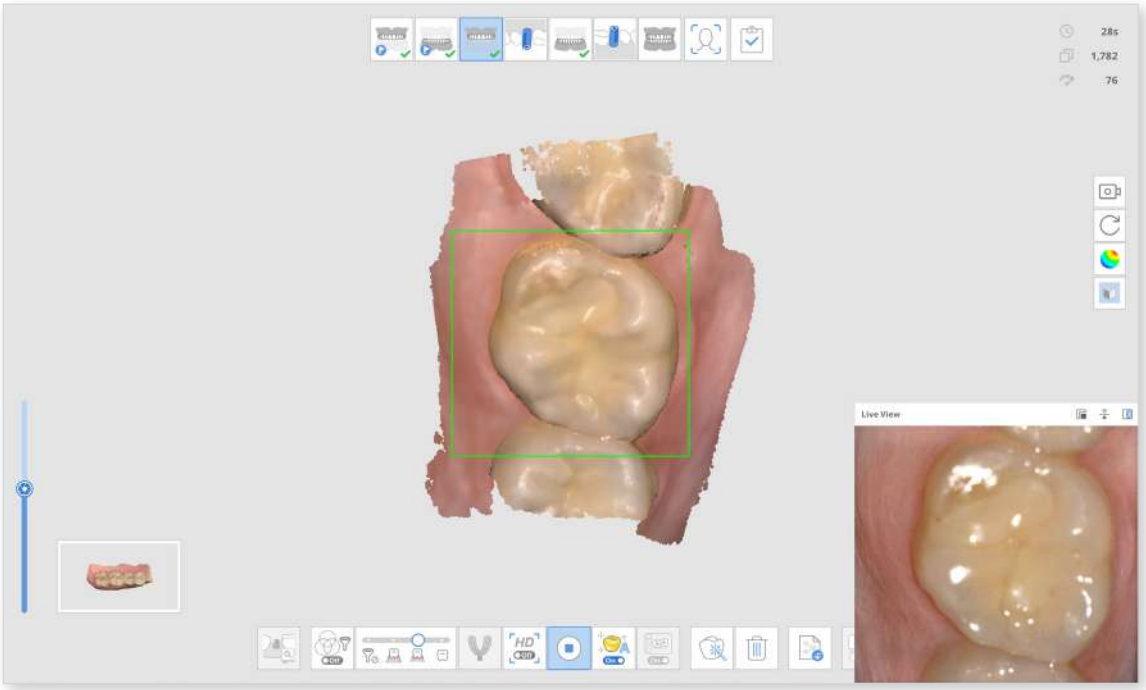
① “Smart Stitching” can be turned on/off at the bottom of the screen.

② Start scanning process in the stage described above.

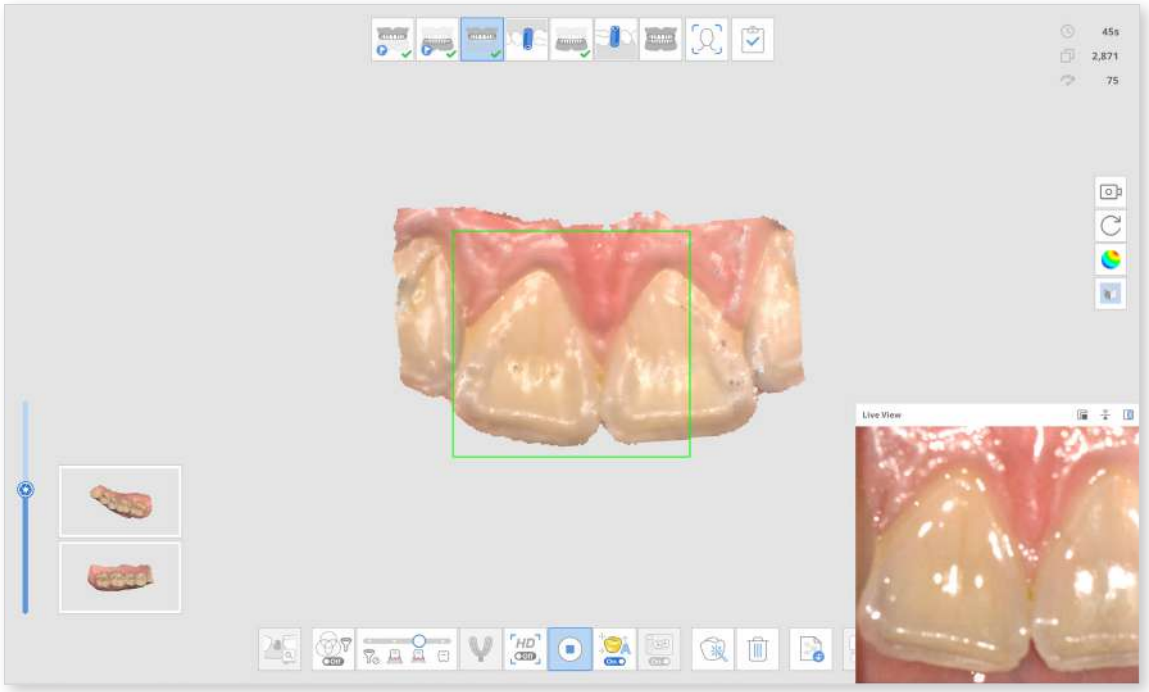


③ If the scanner is placed in a non-contiguous area with the acquiring scan data, new scan data will be acquired.

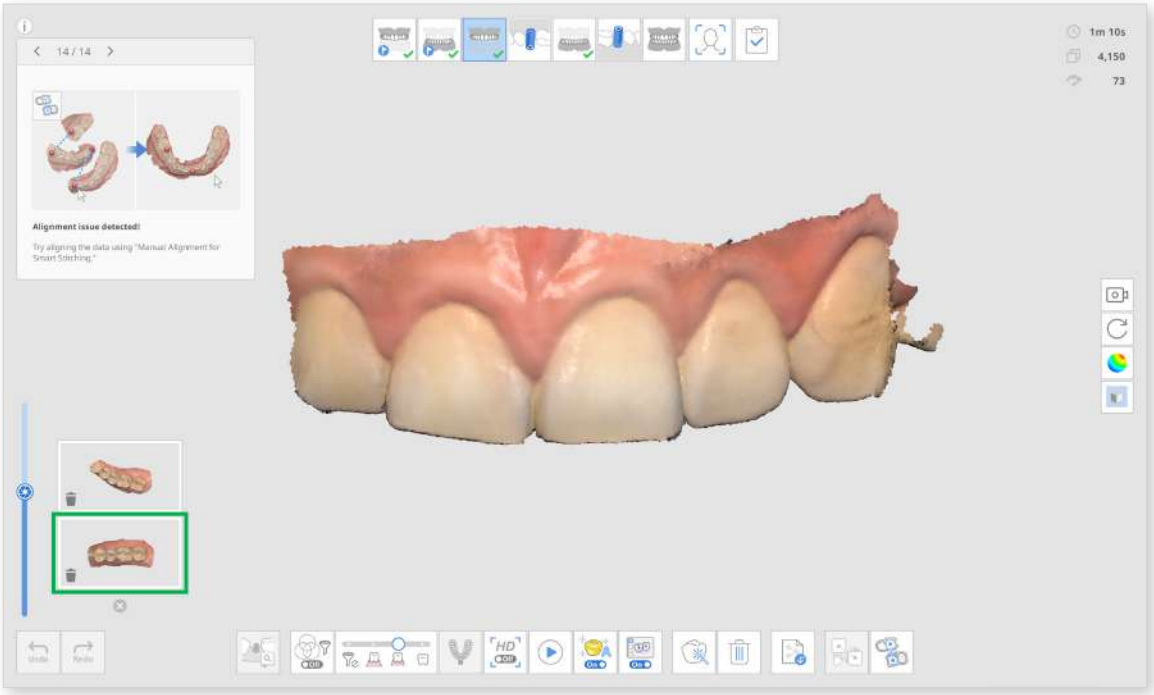
④ Any scan data acquired first is provided in the form of thumbnails. You can have up to five on the left side of the screen.

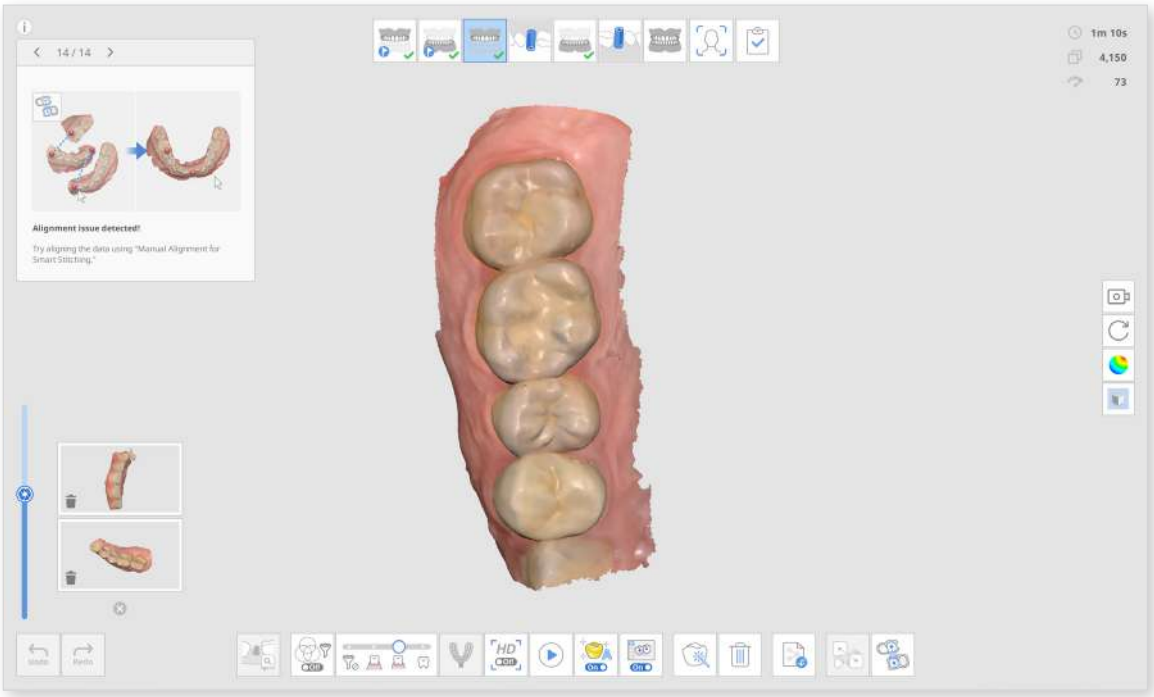


⑤ If the new area is different from the acquired scan data, new scan data is acquired and the thumbnails of the acquired scan data will be aligned vertically.

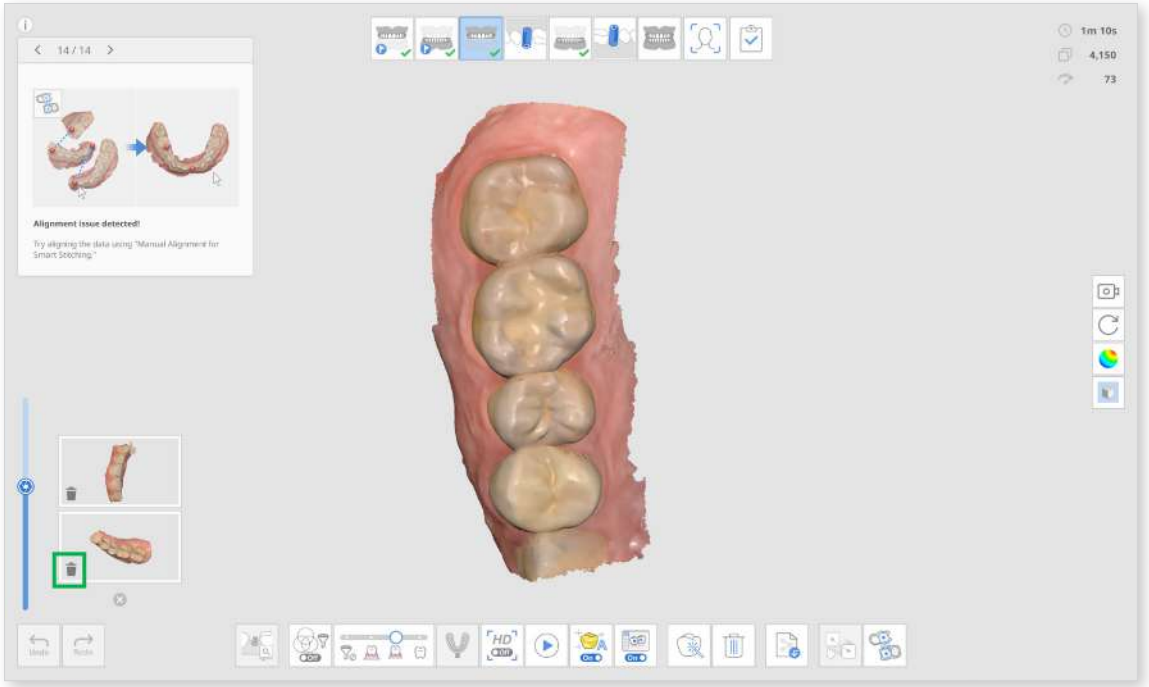


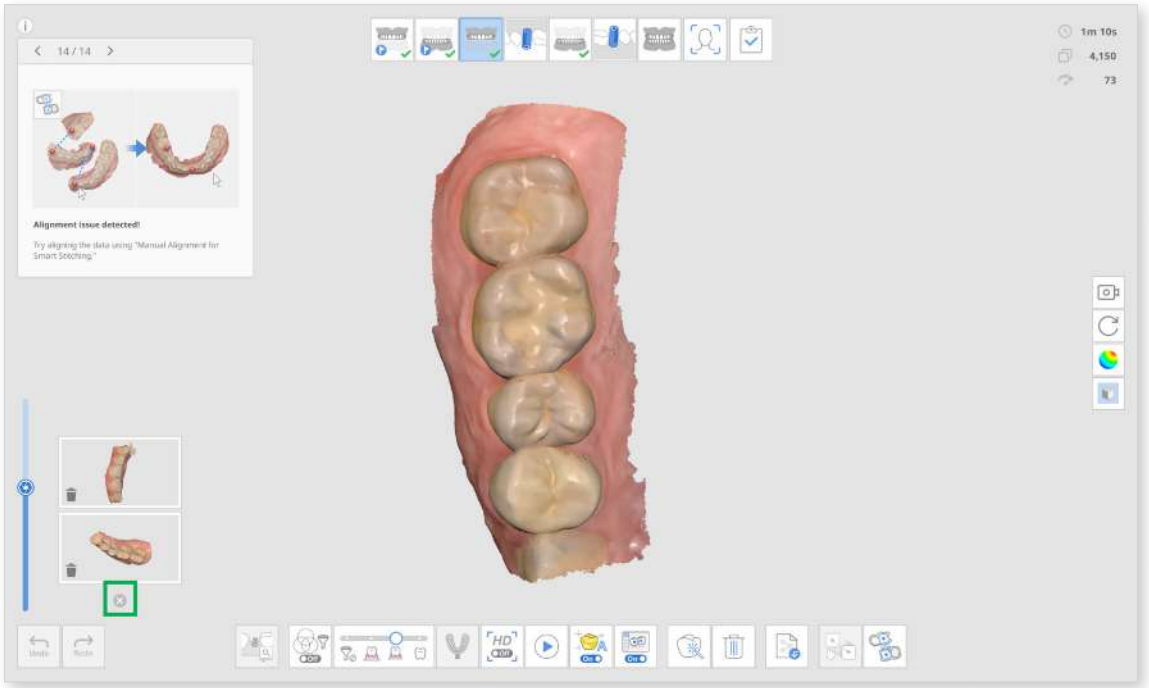
⑥ Stop the scanning process and click the thumbnail to change scan data in the data display area. Thumbnails of scan data which were previously displayed are created and added.



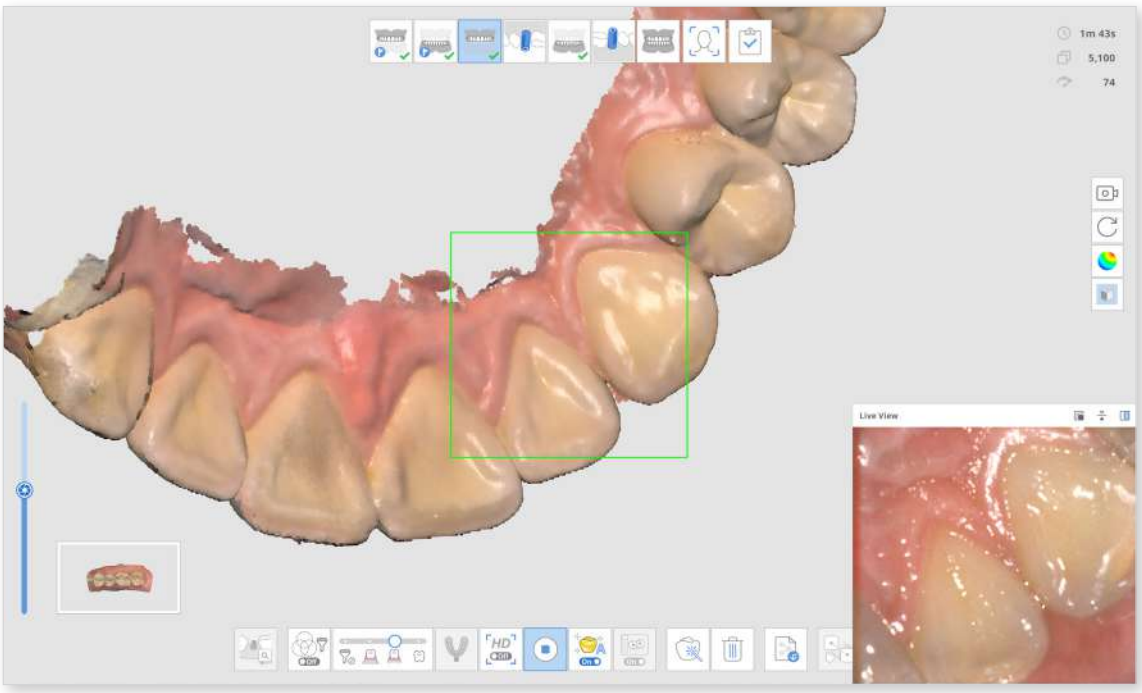


⑦ Non-aligned data can be deleted individually by clicking on the “Delete” button on the thumbnail. Or, it can be deleted all together by clicking on the “Delete All” button on the bottom of the screen.

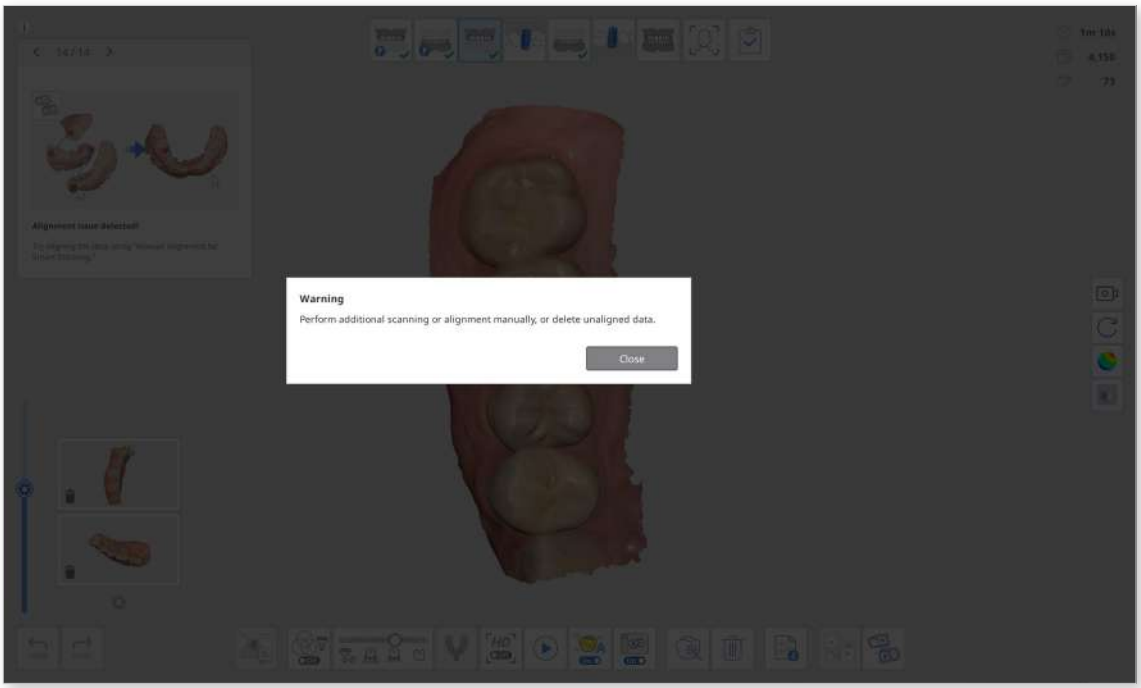




⑧ When the scanner acquires new data in a non-aligned scan data area during scanning, it will automatically attempt to align, and any thumbnails of aligned data will disappear.

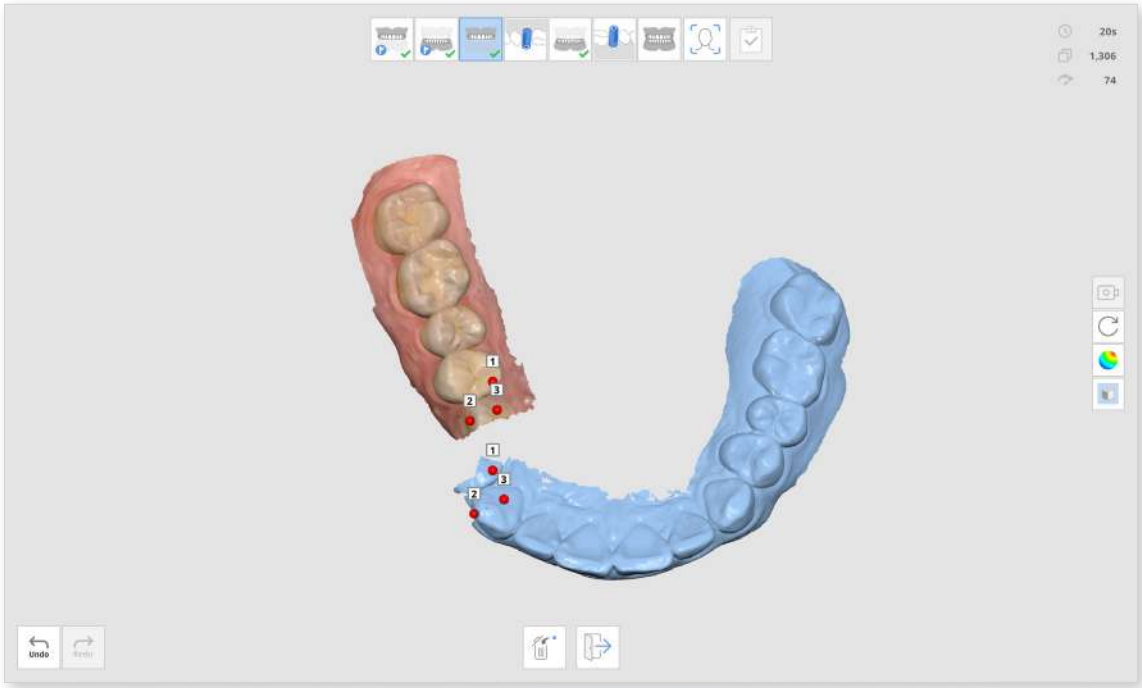


⑨ When there is non-aligned scan data still present, exiting is restricted from some scan stages. The following message may appear:

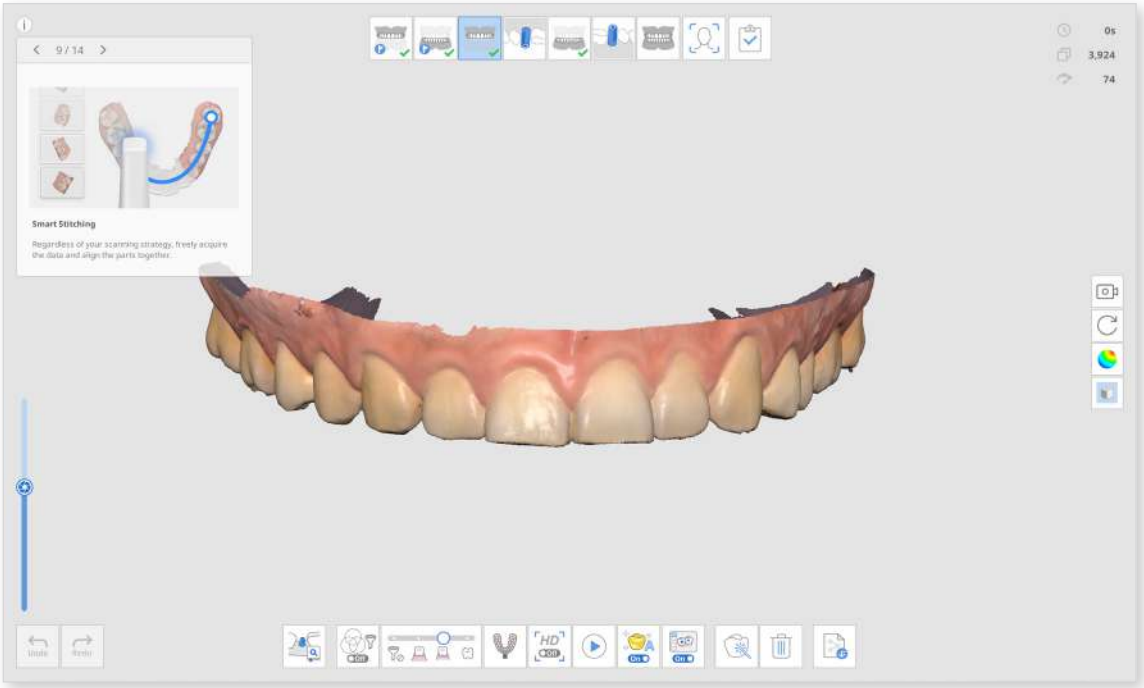


⑩ Do one of the following to align all scan data:

- Align data with an additional scan.
- Align data with the “Manual Alignment” function.
- Delete all or part of the non-aligned scan data.



⑪ When all non-aligned scan data becomes aligned, data acquisition is completed as shown below.



Smart Stitching does not work after using the following functions:

- A.I. Abutment Matching
- A.I. Scan Body Matching
- Occlusion Alignment

Smart Arrows

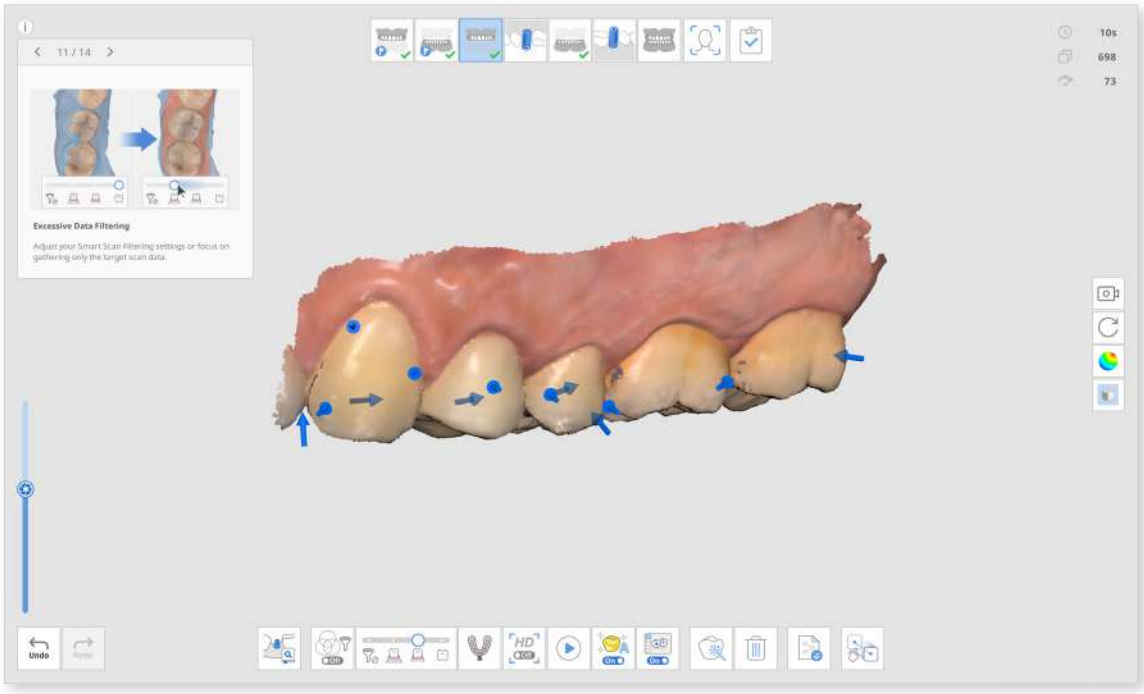
This feature uses indicators to demonstrate areas with low reliability based on the scan data obtained. When the scan stops, blue arrows appear to highlight areas of insufficient data reliability. Scanning additional data that improves data reliability will make the arrows disappear.

This function is only supported in the scan stages below.

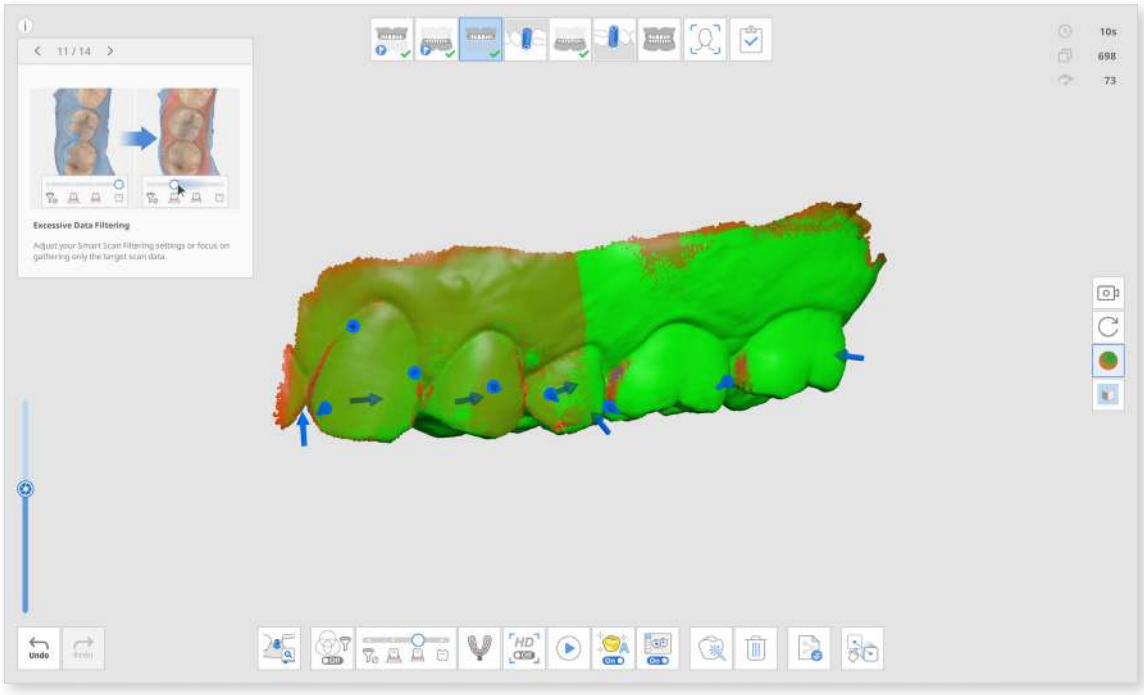
- Maxilla Diagnostic Model
- Mandible Diagnostic Model
- Maxilla
- Mandible

How to Use Medit Smart Arrows

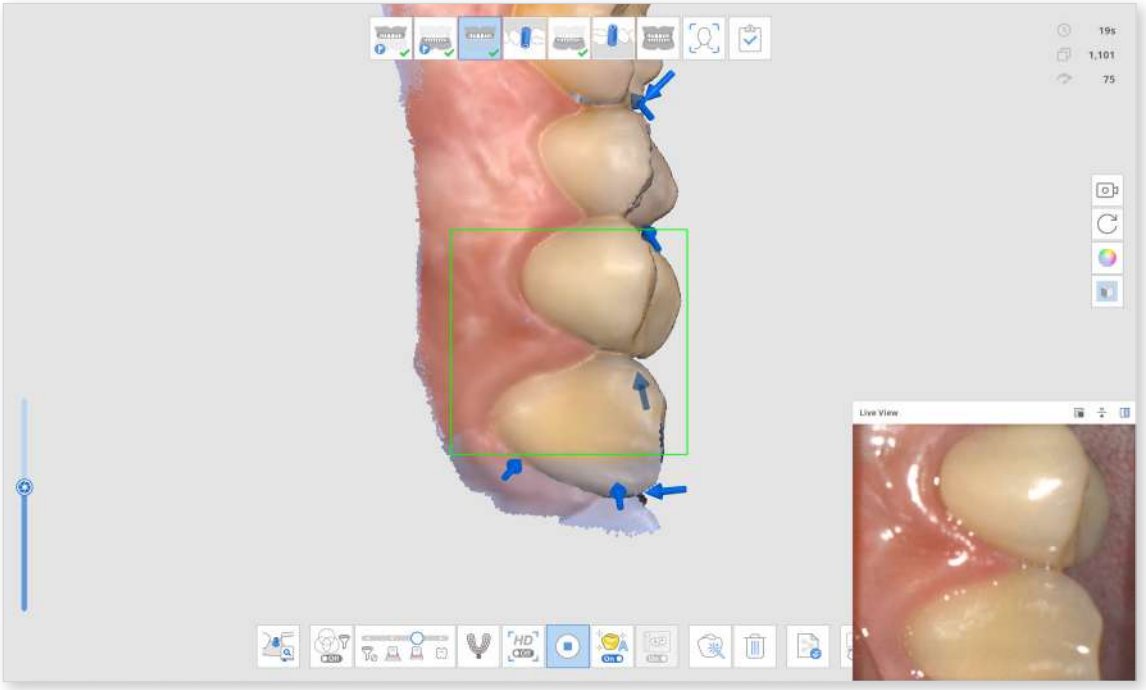
① Scan and acquire data from one of the scan stages listed above. Once scanning stops, blue arrows will appear to indicate areas with low data reliability.



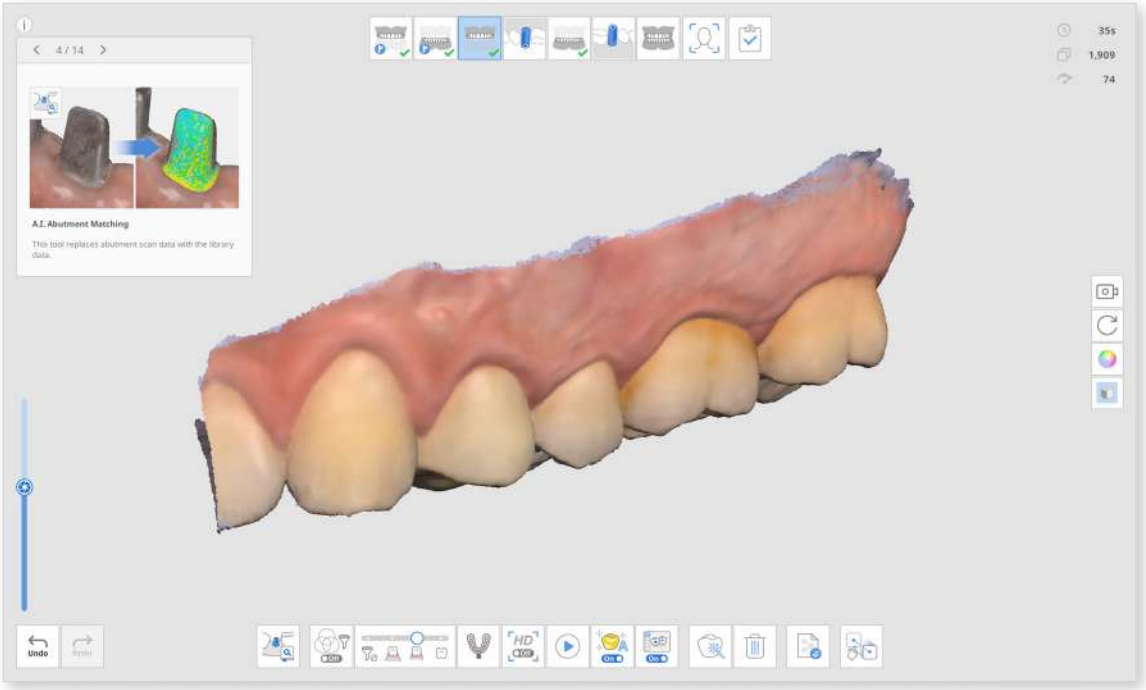
② Check the scan data by reviewing the marked areas. You can inspect the area in closer detail by changing Model Display Mode, selecting Reliability Map, and Texture On + Reliability Map.



③ Scan additional data to fulfill the lacking areas. When there is enough reliable data, the arrows will disappear in real-time. When acquiring scan data, move the scanner in multiple directions and scan it from various angles to improve data reliability.



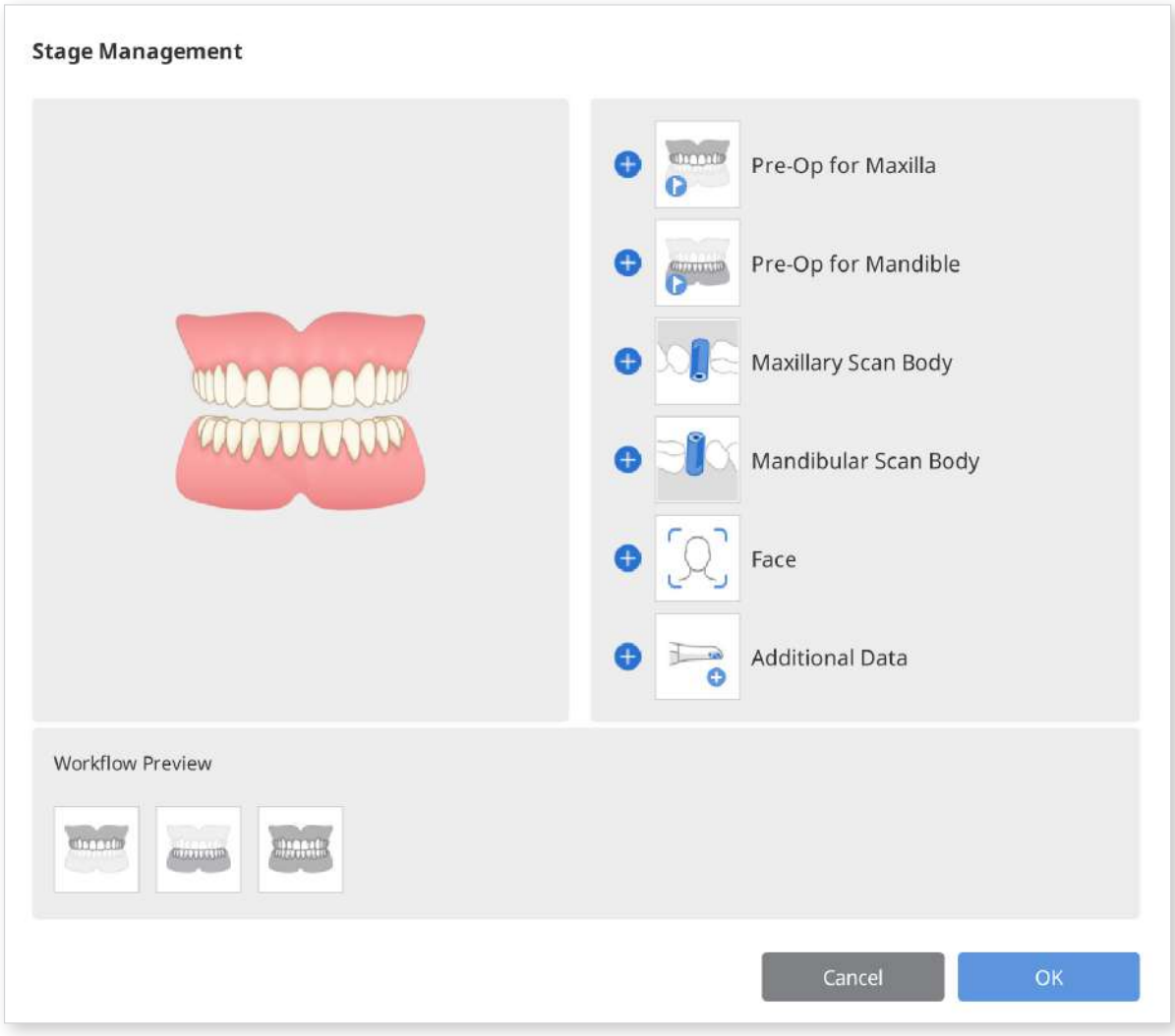
④ According to how you plan to use the data, scan thoroughly to remove all arrows around your areas of interest (for example, if creating a restoration, focusing on margins and adjacent teeth) and move on to the next scan step.



Scan Stages

	Stage Management	Turn on/off diagnosis models, scan body, face, and additional scan stages. When the treatment or device manufacturing plan changes, you can flexibly manage the scanning stages.

You can add or delete stages to the workflow or change the order of the stages in the preview. However, you cannot change the order of the Face and Additional Data stage.

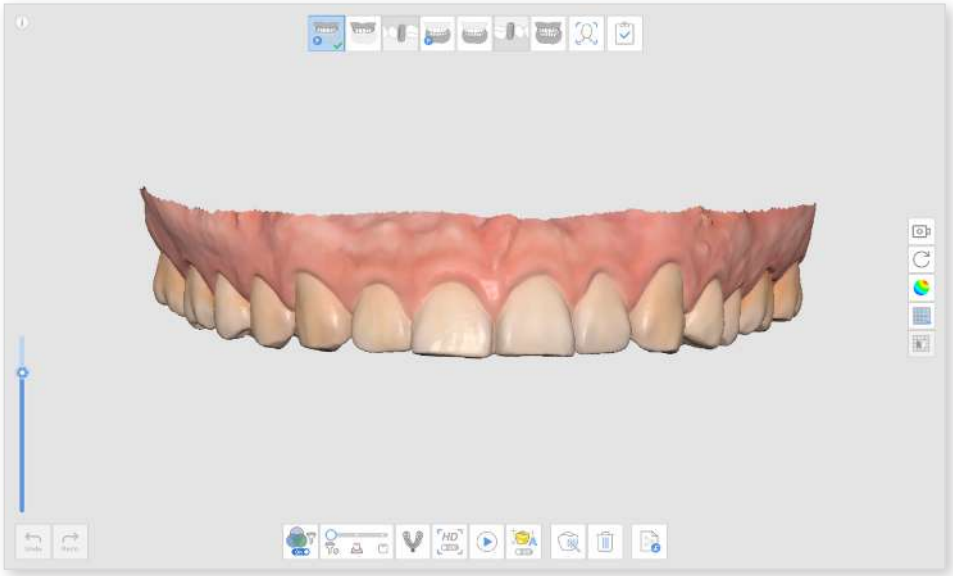


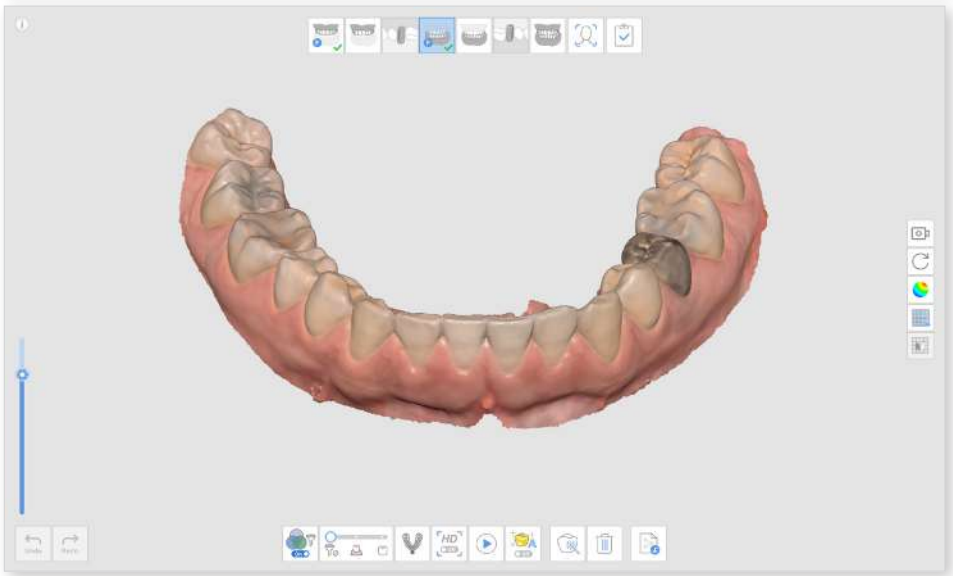
Scan Stage indicates the current section needing to be scanned.

	Pre-Op for Maxilla	Acquires a 3D image of the pre-op for maxilla.
	Pre-Op for Mandible	Acquires a 3D image of the pre-op for mandible.
	Maxilla	Acquires a 3D image of the maxilla.
	Maxillary Scan Body	Acquires a 3D image of the scan body of the maxilla.
	Mandible	Acquires a 3D image of the mandible.
	Mandibular Scan Body	Acquires a 3D image of the scan body of the mandible.
	Edentulous Maxilla	Acquires a 3D image of the edentulous maxilla.
	Maxillary Denture	Acquires a 3D image of the maxillary denture.
	Edentulous Mandible	Acquires a 3D image of the edentulous mandible.
	Mandibular Denture	Acquires a 3D image of the mandibular denture.
	Occlusion	Acquires a 3D image of the occlusion alignment.
	Face	Acquires 3D data of the teeth, mouth, nose, etc.
	Additional Data	Acquire additional data for the scanning process. You can scan patients' existing restorations, temporary restorations, etc.
	Complete	Completes the scan and generates the result data.

Pre-Op for Maxilla and Mandible

	Acquires a 3D image of the pre-op for maxilla.
	Acquires a 3D image of the pre-op for mandible.



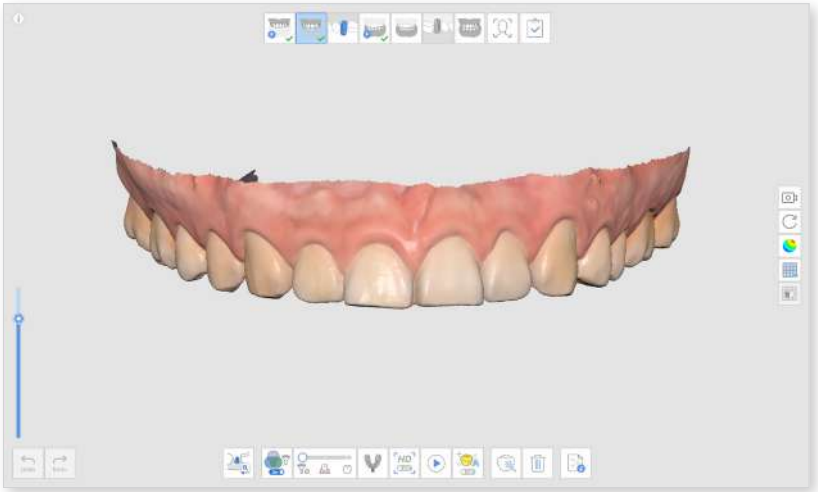


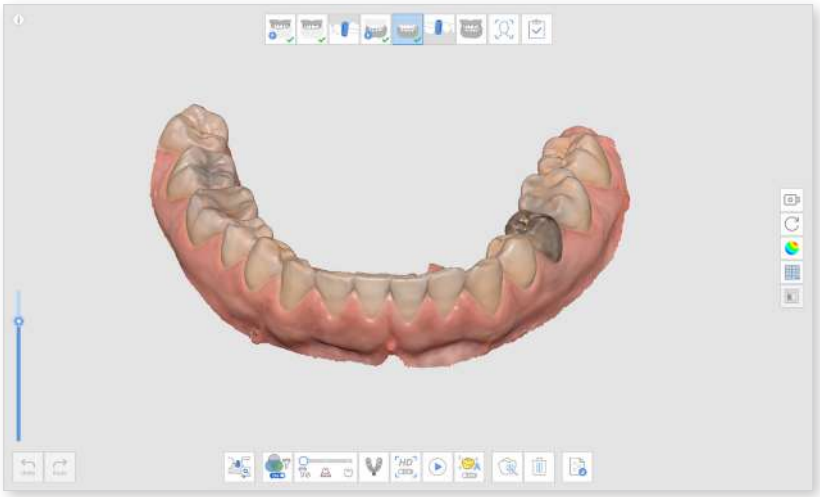
Toolbox

	Impression Scan	Acquires impression data and aligns it with intraoral data in real-time.

Maxilla and Mandible

	Acquires a 3D image of the maxilla.
	Acquires a 3D image of the mandible.





Toolbox

	Impression Scan	Acquires the data of impression model. Impression data is aligned with intraoral data in real-time.
	A.I. Abutment Matching	Manages custom abutment libraries. This library data is aligned automatically with the scan data, minimizing the need to scan difficult-to-reach areas. The library data can be shared for further processes, such as design.

Scan Body

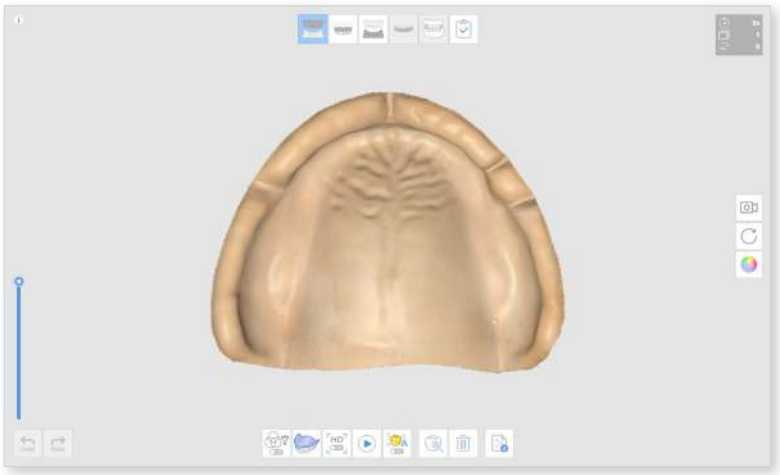
	Acquires a 3D image of the scan body of the maxilla.
	Acquires a 3D image of the scan body of the mandible.

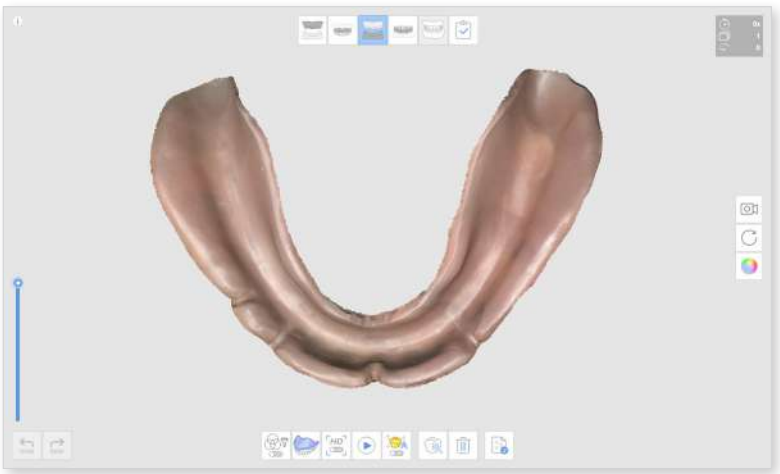
Toolbox

	A.I. Scan Body Matching	Manages pre-set and custom scan body libraries. This library data is aligned automatically with the scan data, minimizing the need to scan difficult-to-reach areas. The library data can be shared for further processes, such as design.
	Replicate Existing Data	Replicates existing maxilla/mandible data.

Edentulous Maxilla and Mandible

	Acquires a 3D image of the edentulous maxilla. Appears when the denture is set in the dental form in Medit Link.
	Acquires a 3D image of the edentulous mandible.





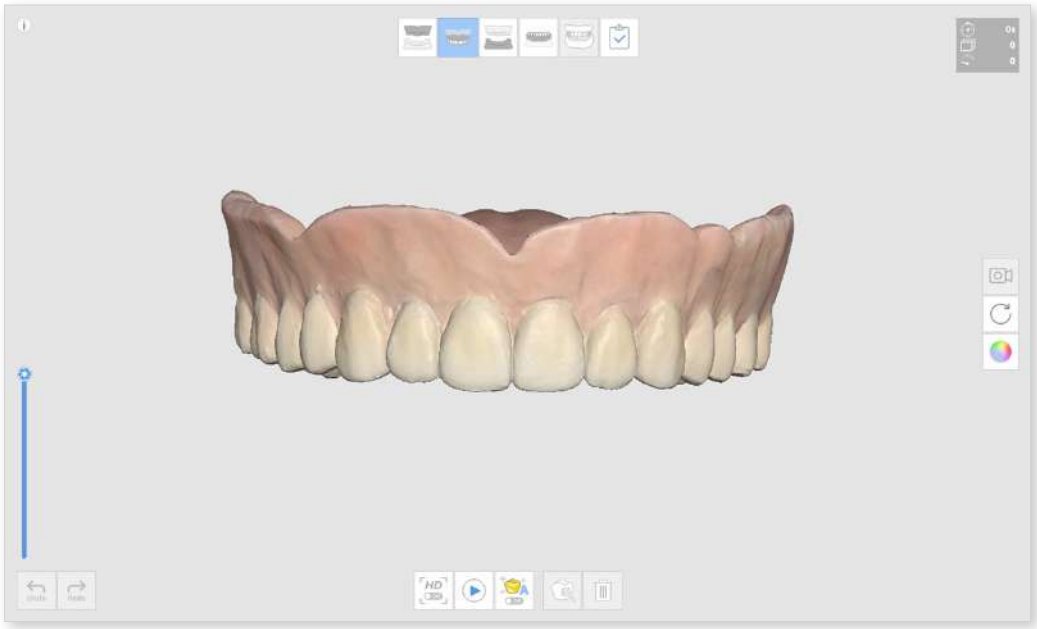
Toolbox

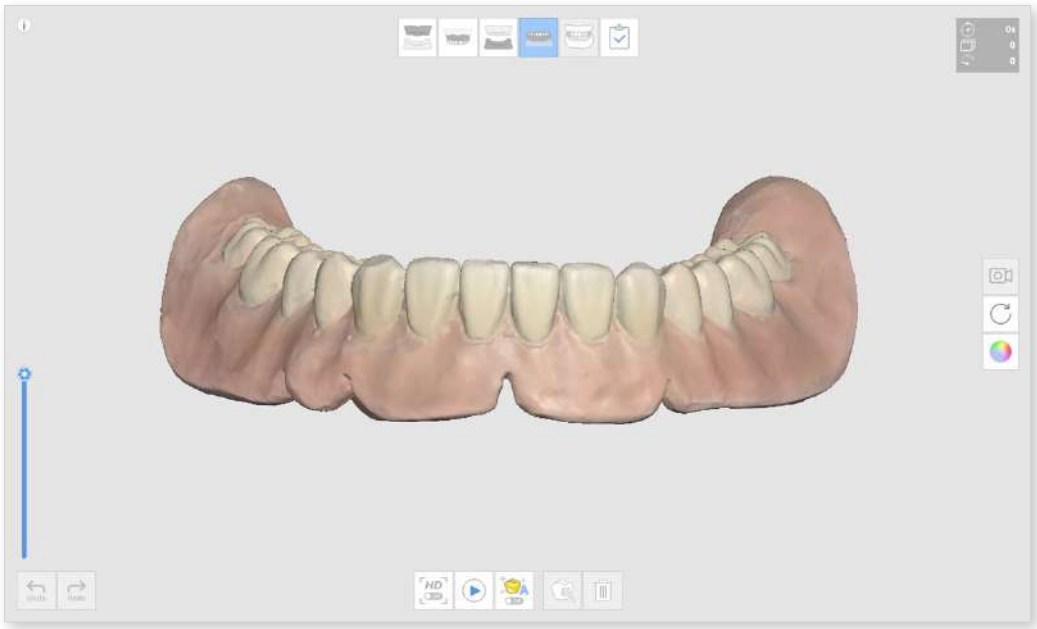
	Relined Denture Scan	Scans the fitting surface of the relined denture, which will be utilized as edentulous scan. This helps reproduce the edentulous environment for optimal denture manufacturing process.

See **Edentulous Scan Process** for more details on how to handle denture cases.

Maxillary and Mandibular Denture

	Acquires a 3D image of the maxillary denture.
	Acquires a 3D image of the mandibular denture.

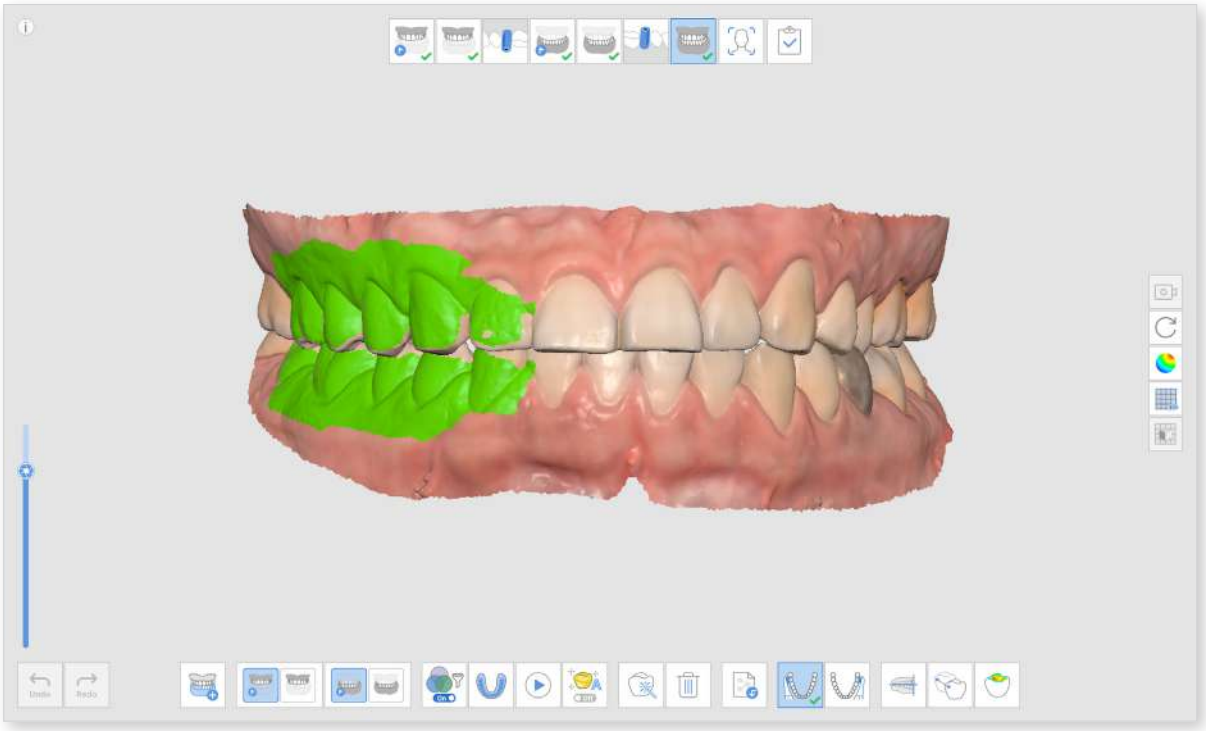




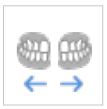
See **Edentulous Scan Process** for more details on how to handle denture cases.

Occlusion Scan

	Acquires the 3D image of the occlusion.



Toolbox

	Multi Occlusion	Reproduce various types of occlusion scan data and alignment. Only available on Occlusion scan stage.
	Impression Scan	Acquire the data of an impression model. Impression data is aligned with intraoral data in real-time.
	Occlusion Target for Maxilla	Choose pre-operation maxilla or maxilla data for occlusion alignment.
	Occlusion Target for Mandible	Choose pre-operation mandible or mandible data for occlusion alignment.
	First Occlusion	Acquire the 3D model for an occlusion alignment.
	Second Occlusion	Acquire the 3D model for an occlusion alignment of the opposite side of the first occlusion.
	Align with Occlusal Plane	Adjust the position of data on the occlusal plane in exocad.
	Manual Alignment	Align the scan data manually using user-defined points.
	Detach Maxilla	Detach the maxilla and move it back to the pre-alignment position.
	Detach Mandible	Detach the mandible and move it back to the pre-alignment position.
	Detach Occlusion Data	Detach first and second occlusion data and move them back to the pre-alignment position.
	Detach All	Detach all data and move it back to the pre-alignment position.
	Mandibular Movement	Record and simulate patients' actual mandibular movement when occlusion is aligned.

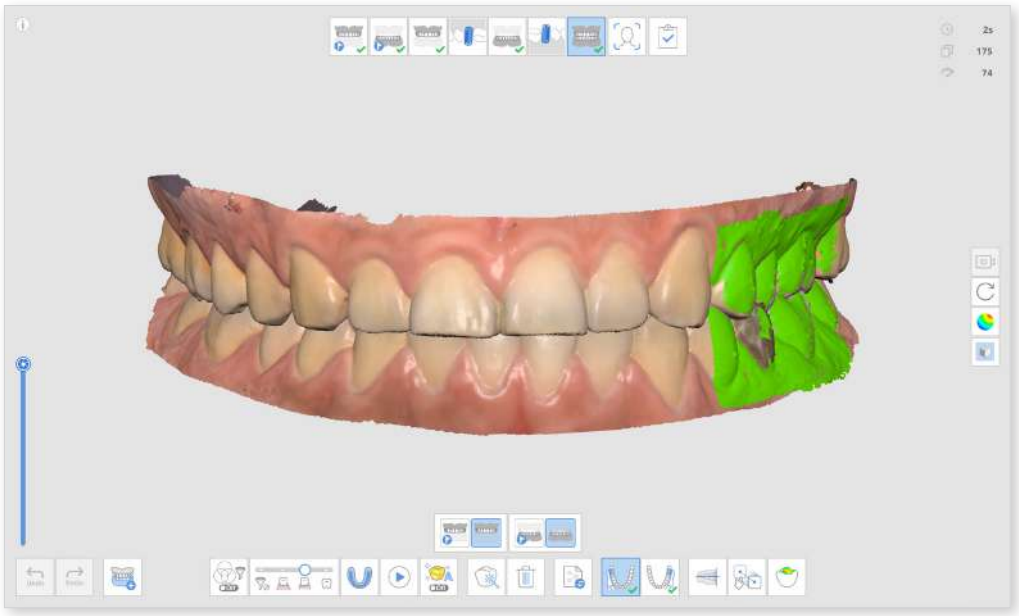
Learn more about how to acquire or align scan data for various occlusion groups by using the "Multi Occlusion" section.

Occlusion Alignment Data

Use pre-operation maxilla and pre-operation mandible data for alignment in the Occlusion scan stage.

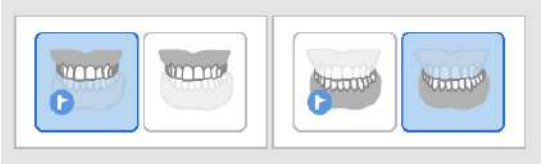
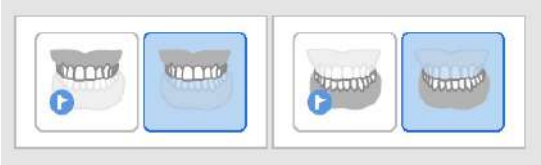
How to Use

① Scan the maxilla, pre-operation maxilla, mandible, and pre-operation mandible. Then, go to the Occlusion scan stage where the user will see four icons on the bottom left.



② Click these buttons to change the data as pre-operation data to use it for occlusion alignment.

Choose one of four pairs for alignment.

Pre-Op for Maxilla / Pre-Op for Mandible	Pre-Op for Maxilla / Mandible
	
Maxilla / Pre-Op for Mandible	**Maxilla / Mandible**
	

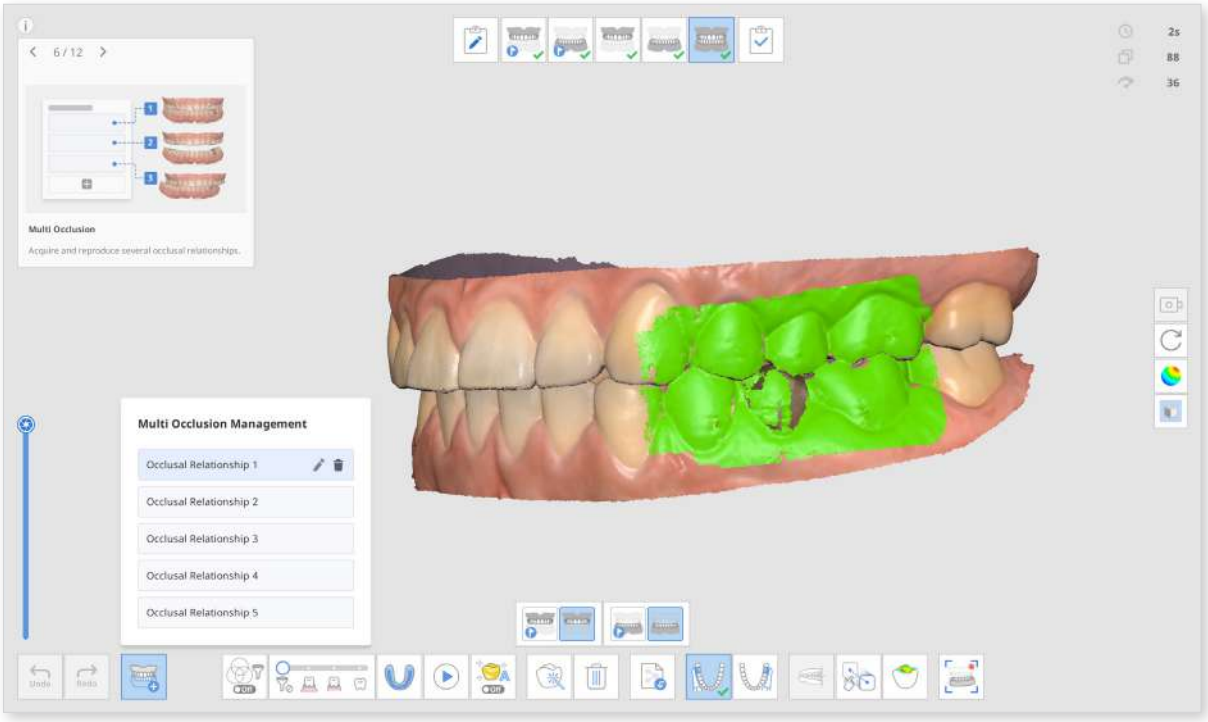
Multi Occlusion

	Reproduce various types of occlusion scan data and alignment. Only available on Occlusion scan stage.

”Multi Occlusion Management” dialog enables you to conduct the following functions:

- Add Occlusion Group
- Delete Occlusion Group
- Change Name

You can create up to 5 occlusion groups, and the scan data for the selected occlusion group displays on the screen. You can freely select the target for occlusion in each group.



See **Multi Occlusion** for more details on how to utilize the feature.

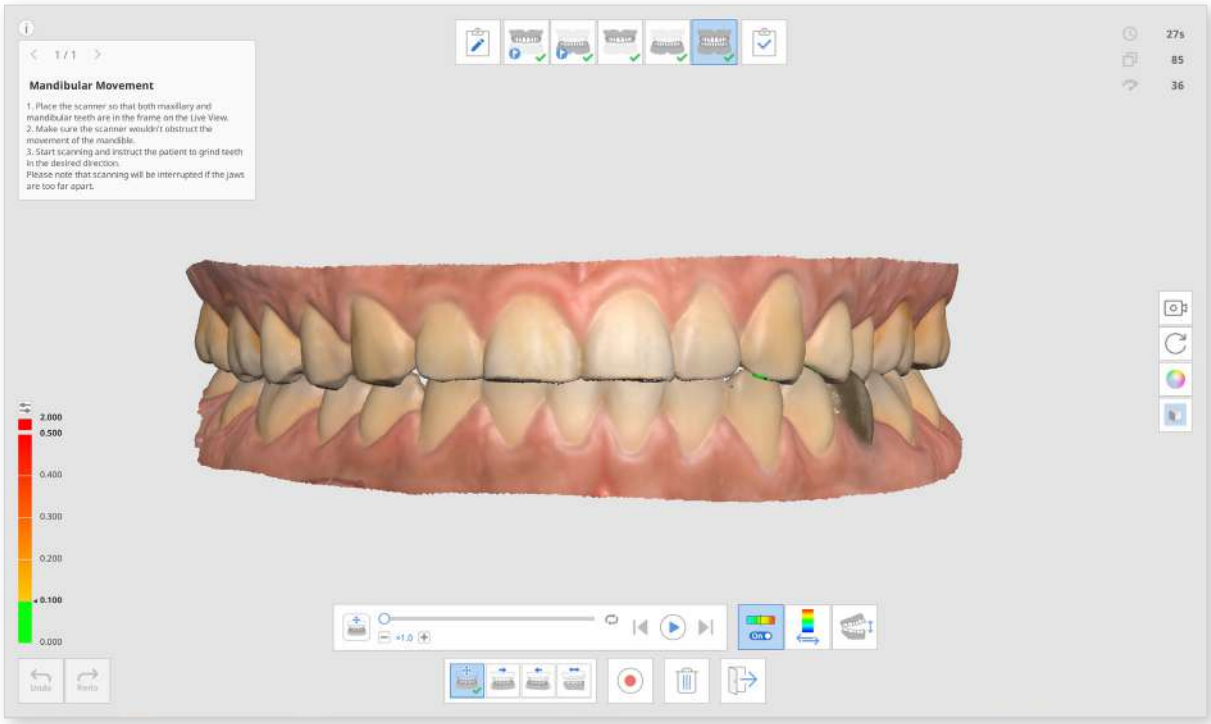
Mandibular Movement

	Record and simulate patients' actual mandibular movement when occlusion is aligned.

You can make a record of the following movements:

- Free Movement
- Left Lateral Movement
- Right Lateral Movement
- Left Lateral Movement

After recording each movement, the mandibular movement can be reproduced by simulation. The color map makes it easy to recognize the interference area of the mandible and maxilla.



 See **Mandibular Movement** for more details on how to utilize the feature.

Face Scan

	Acquires the scan data of teeth, mouth, nose, etc.

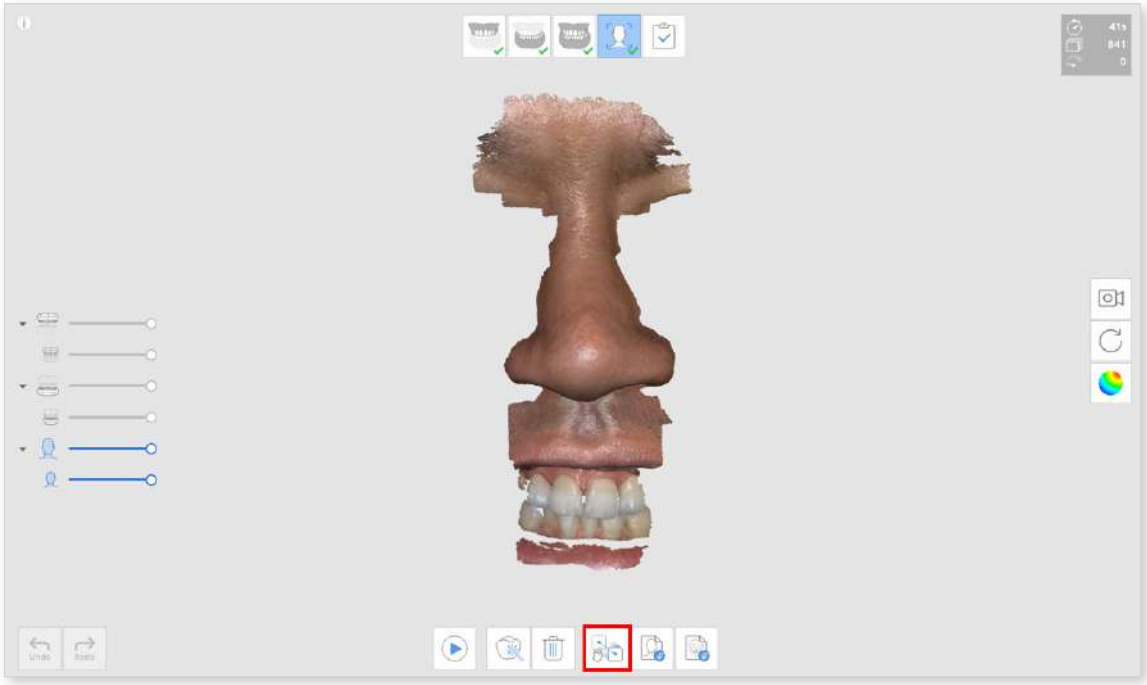
Toolbox

	Align Face Data	Selects data and picks points on each of them for alignment.
	Import 3D Face Data	Imports face data from an external source.
	Import 3D Bone Data	Imports 3D face data taken by a CT scan. Cannot use the DICOM file.

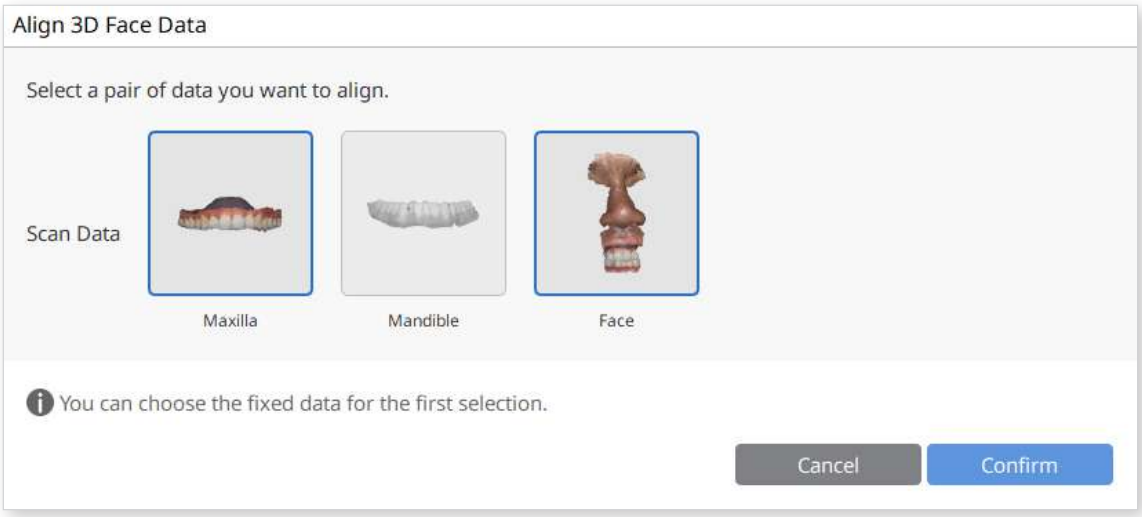
How to Use

① Teeth, nose, and the area around the mouth are scanned during the Face scan stage. Be careful not to point the scanner light into the patient's eyes.

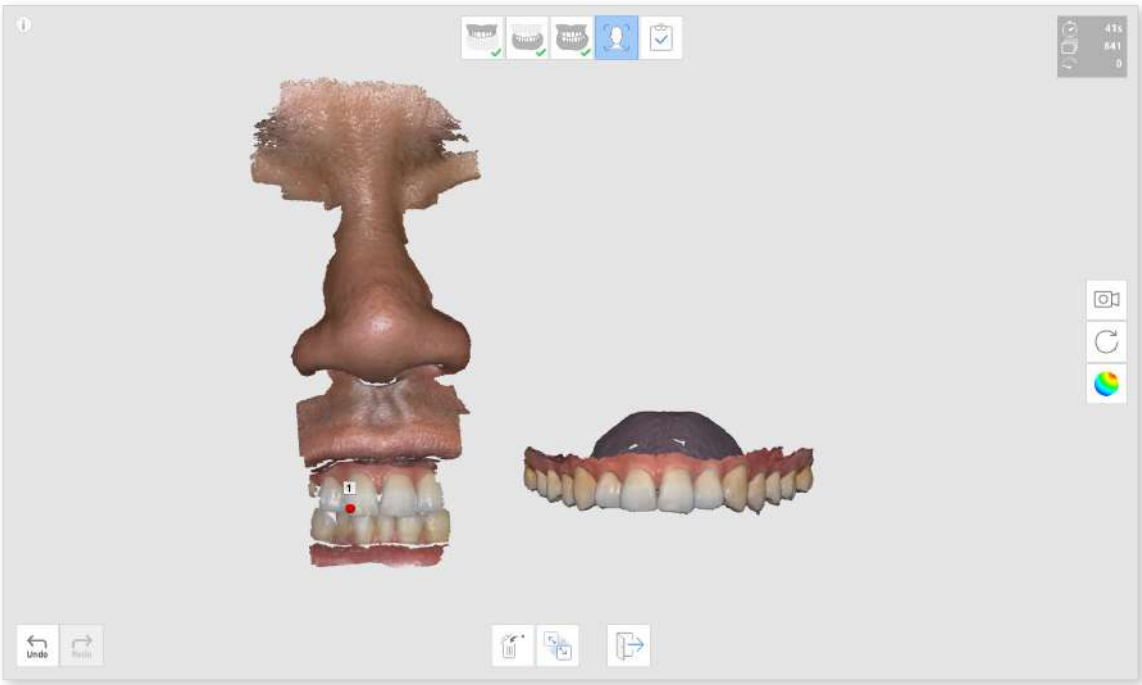
② Click the alignment icon to align scanned face data and teeth data.



③ Select the arch data you want to align with face scan data. We recommend aligning maxilla scan data with face data.

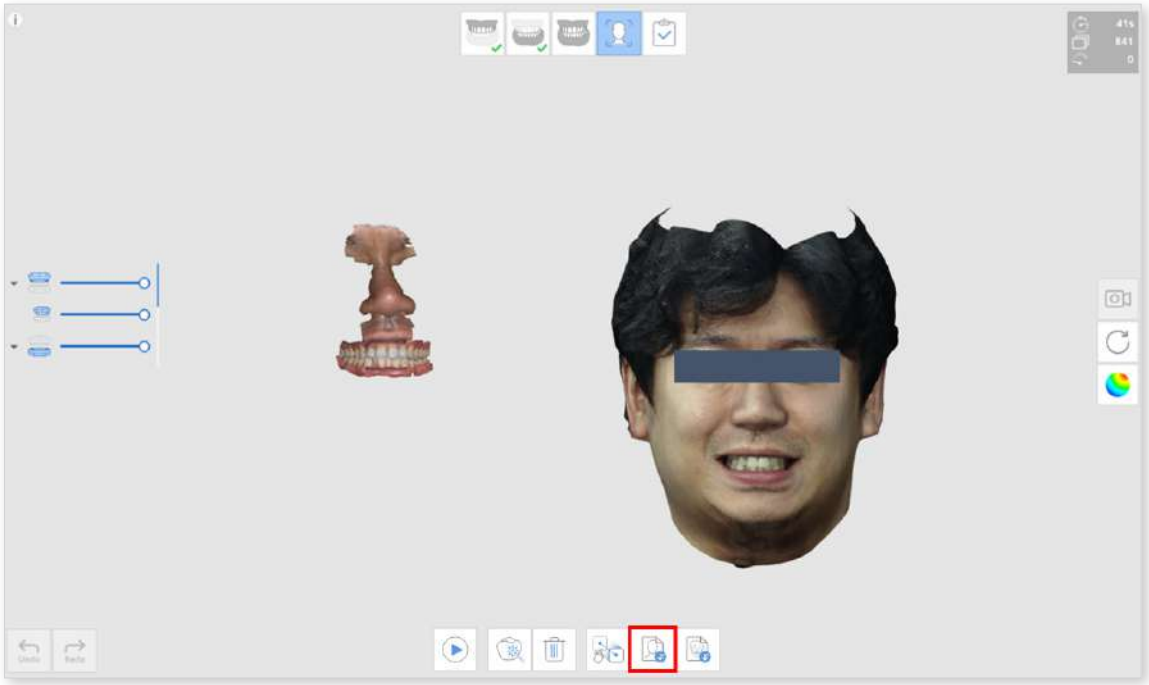


④ Select corresponding points on both scanned face data and teeth data to align them. Use as many points as are needed. The minimum number of points is one.



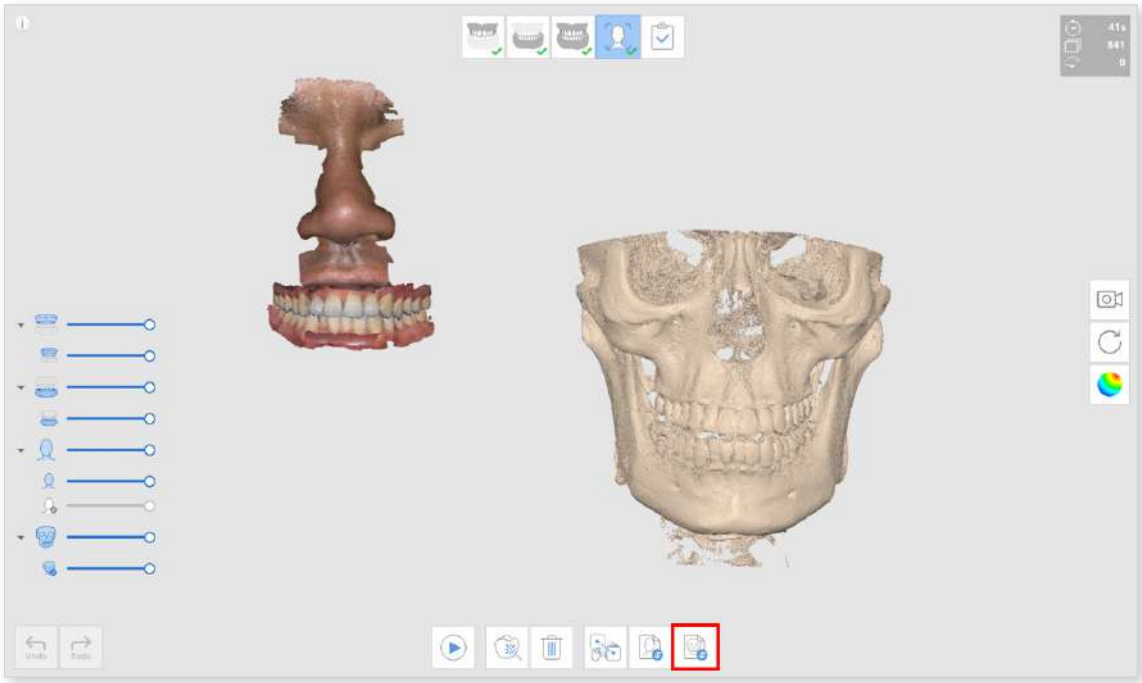
⑤ Click Return to Previous after the alignment is complete.

⑥ Click “Import 3D Face Data” to import the 3D face data scanned by the scanner. (Supported file formats: .obj, .ply, .stl)



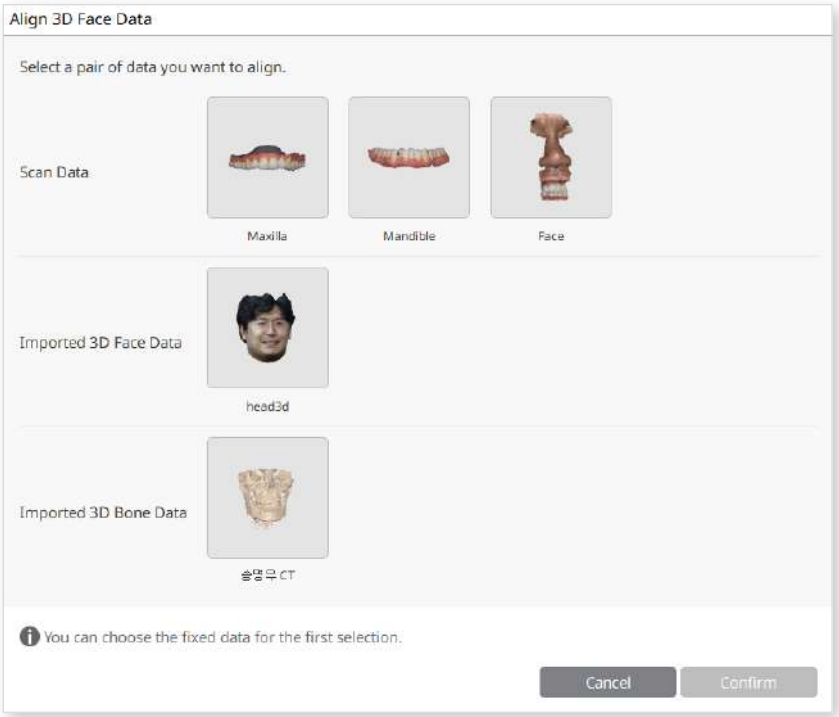
⑦ Click the edit button to remove teeth from the imported data.

⑧ Click “Import Bone Data” to import bone data.
(The user cannot use a DICOM file. Supported file formats: .obj, .ply, .stl)

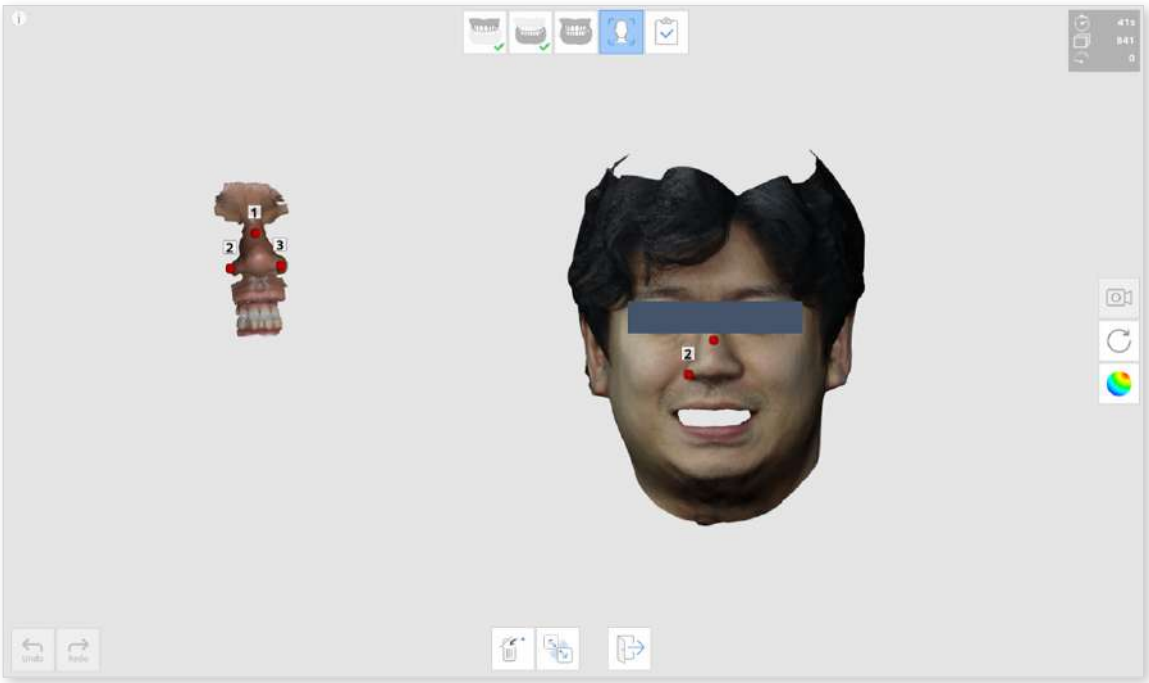


⑨ Click the alignment button to align the respective data. The user can align the following data pairs:

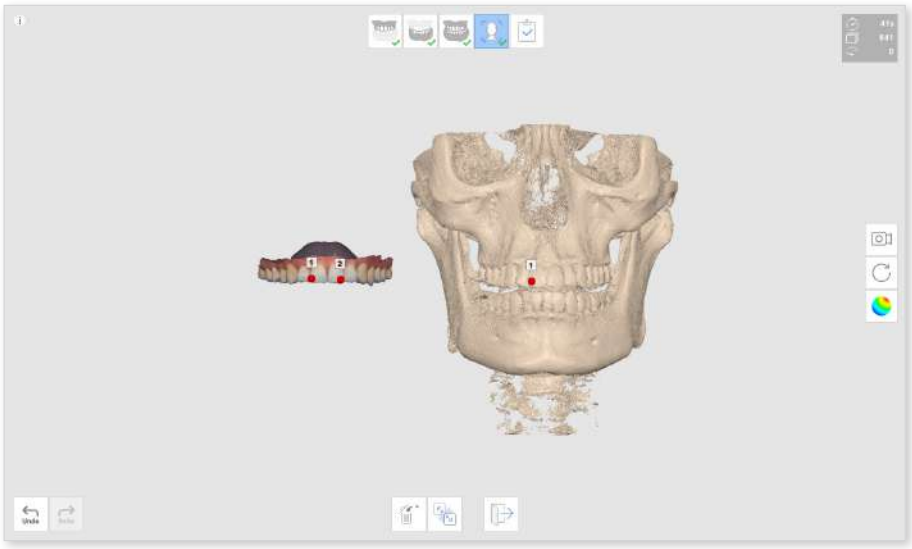
– Face Scan – Teeth Scan
– Face Scan – Imported 3D Face
– Teeth scan – Imported 3D Bone



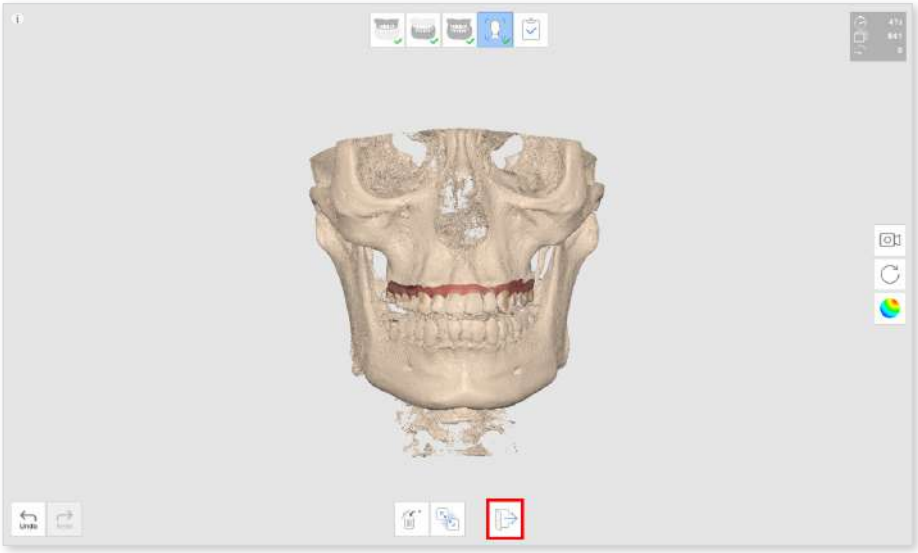
⑩ Face scan data should be aligned with the imported 3D face data.



⑪ The maxilla scan data should be aligned with the imported 3D bone data.



⑫ Click “Return to Previous” after the alignment is complete.

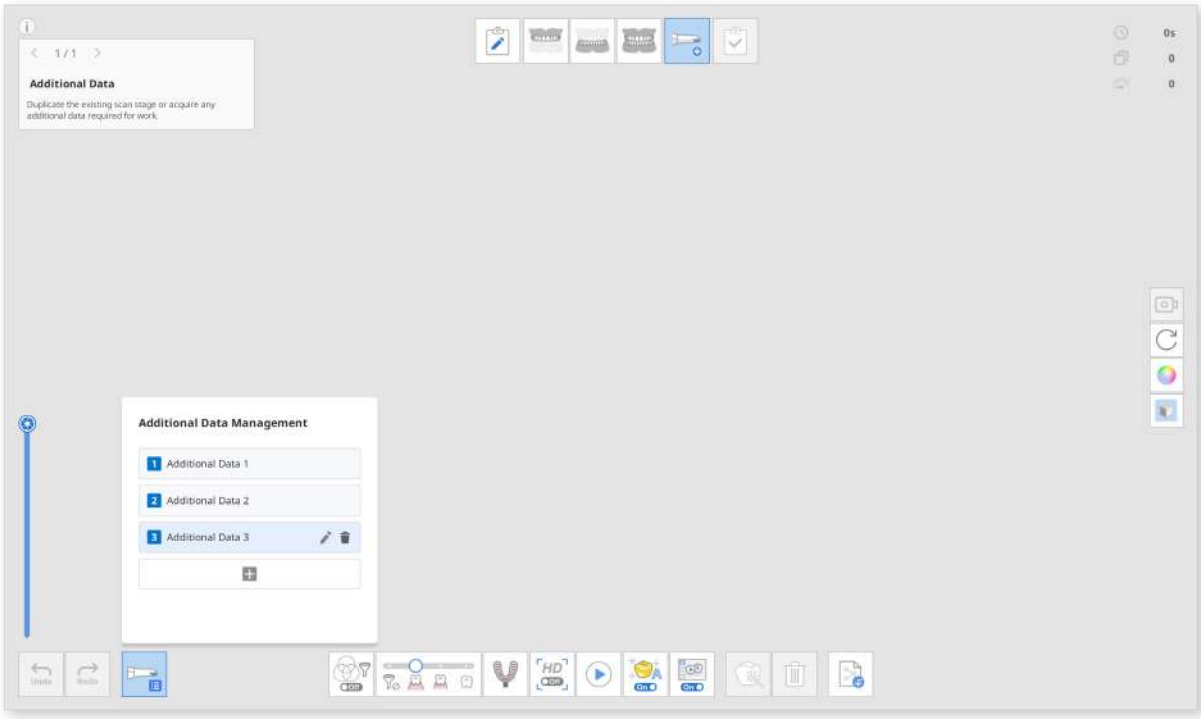


⑬ Face data processed in exocad can be imported automatically.

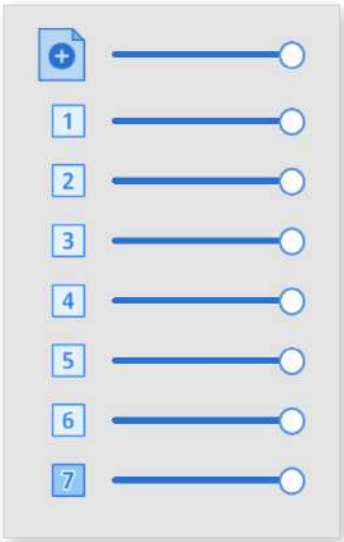
Additional Data

	Acquire any additional data you need for the case. You can scan patients' existing restorations, temporary restorations, etc.

You can scan the outer surface of the patient's existing prosthesis or temporary prosthesis for the case. The Additional Data Management icon at the bottom of the stage allows you to add new additional data or delete or rename the existing ones.



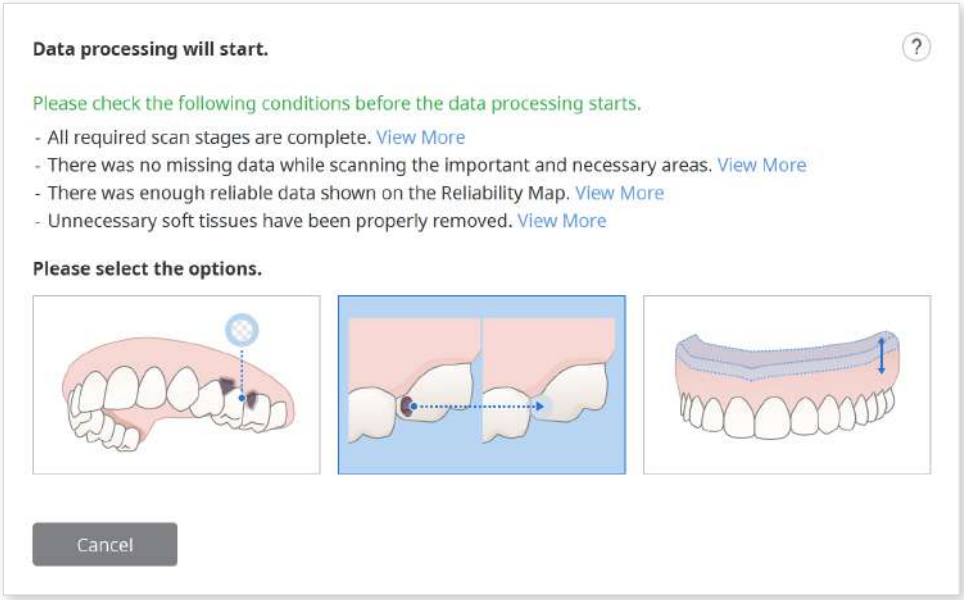
You can add up to seven additional data and check the added ones in the data tree from the Overview.



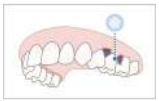
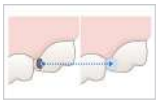
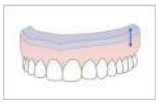
Complete

	Completes the scan and generates the result data.

Check the following four conditions after clicking Complete.

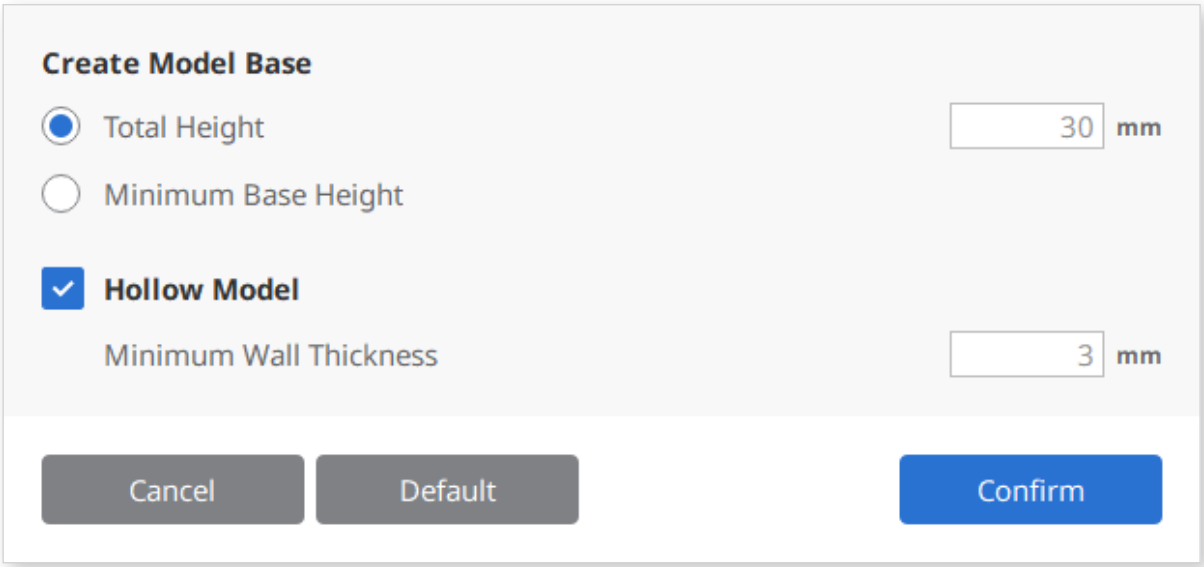


Toolbox

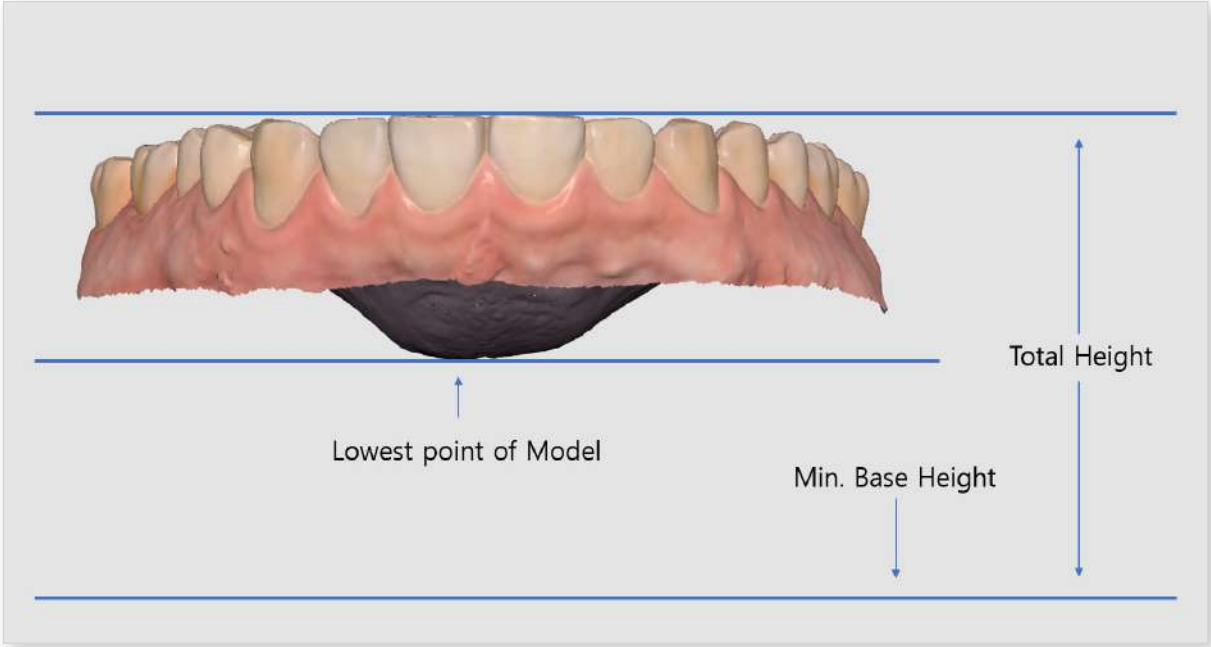
	Process Data (As It Is)	Creates optimized 3D digital model. The noise will be partly removed, and the areas with insufficient data will remain as empty spaces. If necessary, adjust file size and surface roughness options in the Settings.
	Fill Major Holes	Use this option to fill all the major holes in the scan data. Based on the “Reliability Map”, the reliable areas will be expended to cover the areas where data was not acquired.
	Create 3D Printable Model	Expands the largest boundary to make it thicker and produces a suitable result for 3D printing. If necessary, adjust file size and surface roughness options in the Settings.
	Create Replica Denture Model	Creates an optimized 3D replica denture model. The noise will be partly removed, and the areas with insufficient data will remain as empty spaces. If necessary, adjust file size and surface roughness options in the Settings.

Create Model Base

Expands the boundary data to produce results with an even base.



Total Height	Total height of the model.
Minimum Base Height	Height from the base to the lowest point of the model.
Minimum Wall Thickness	Minimum thickness of the model inner wall.



Practice Mode

“Practice Mode” provided by Medit helps the user to experience practical use.

Scan the QR code attached to the practice model in order to download sample data or import stored sample data when it is already downloaded.

When the mode starts, user can select a difficulty level and start the scan.

The difficulty levels are divided as shown below. Each level has a different score criteria.

- For Beginners
- For Experts
- For Masters

*Unavailable with i500

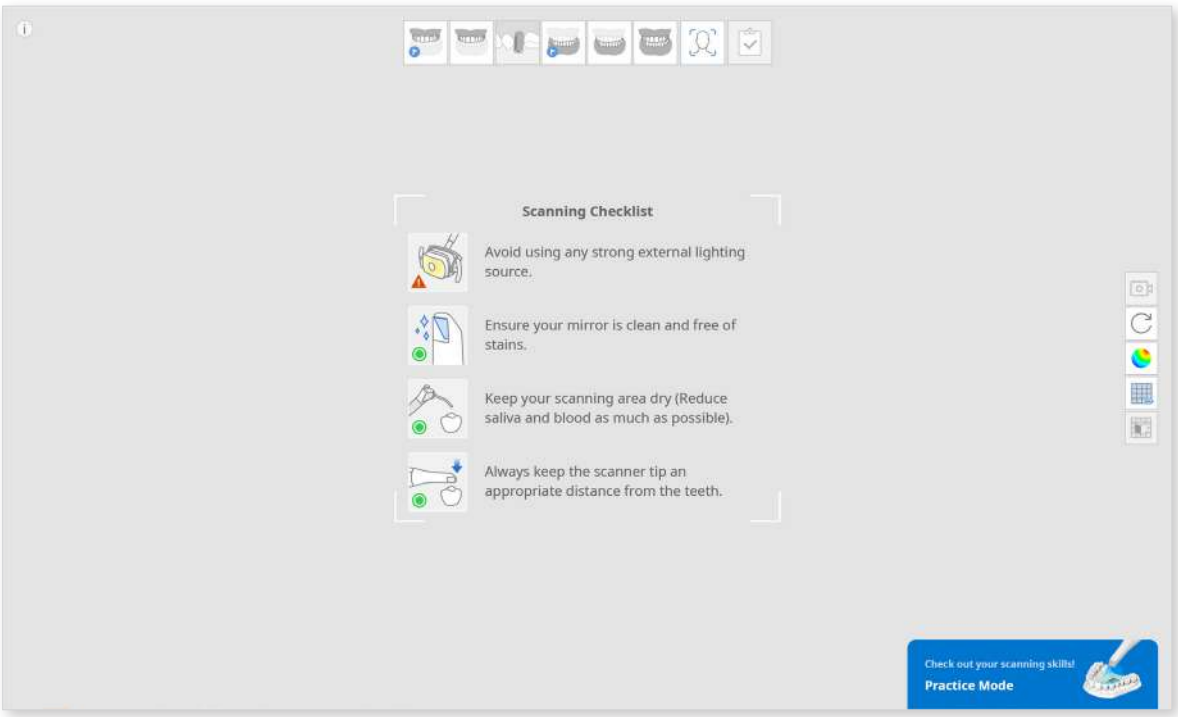
“Practice Mode” is intended to guide the user to perform the correct scanning by using a practice model. Data acquired from “Practice Mode” is not stored when the mode is closed.

Practice Mode – How-To Guide

Run Scan for Clinics and click the “Practice Scanning” button on the bottom right side of the screen.

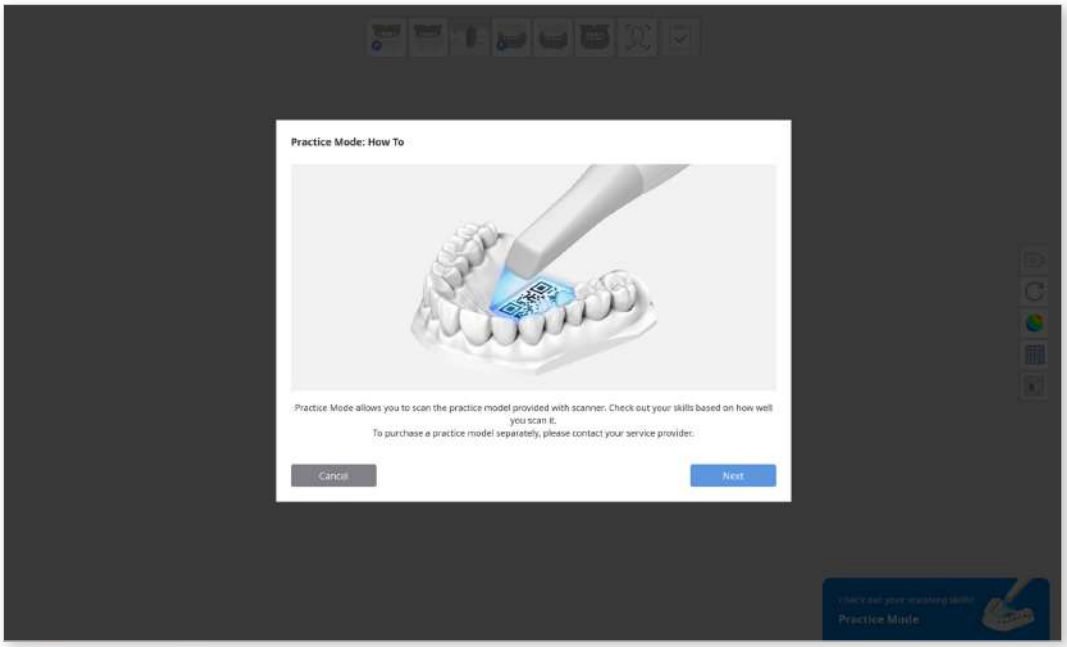
The “Practice Mode” banner is displayed on full screen only when there is any scan data acquired.

“Practice Mode” can be turned on/off by going to “Settings” dialog.



Tips for “Practice Mode” are presented.

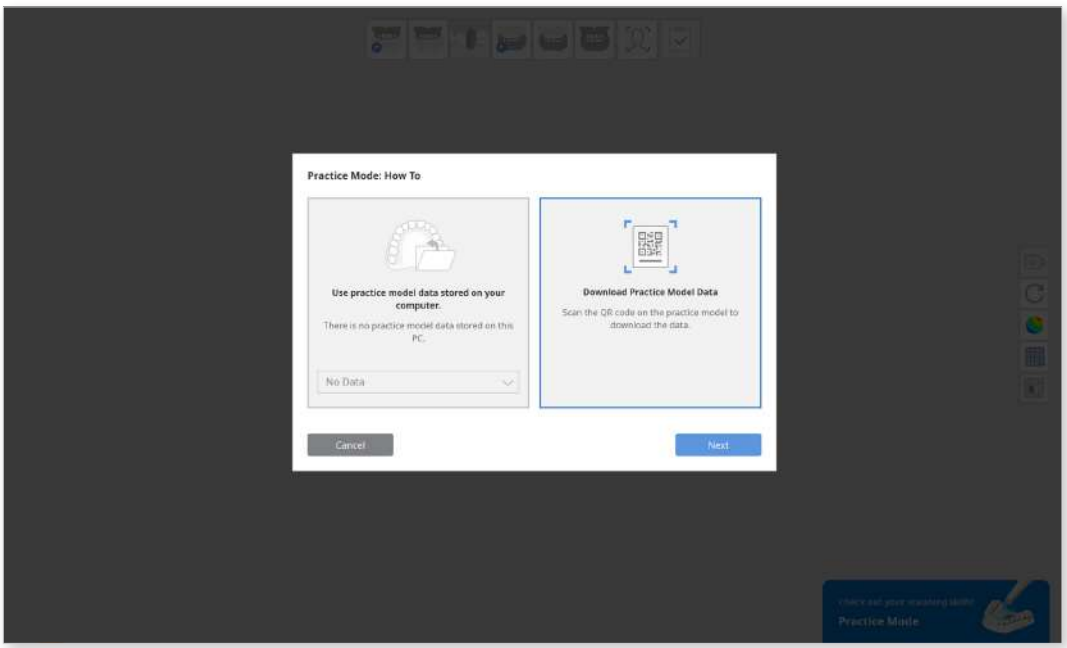
The practice model is included in the scanner package. Please contact a local service provider for additional information.



Select the sample data of a serial number attached on the practice model.

Download the data from a server by scanning the QR code, or import the data when it is already downloaded.

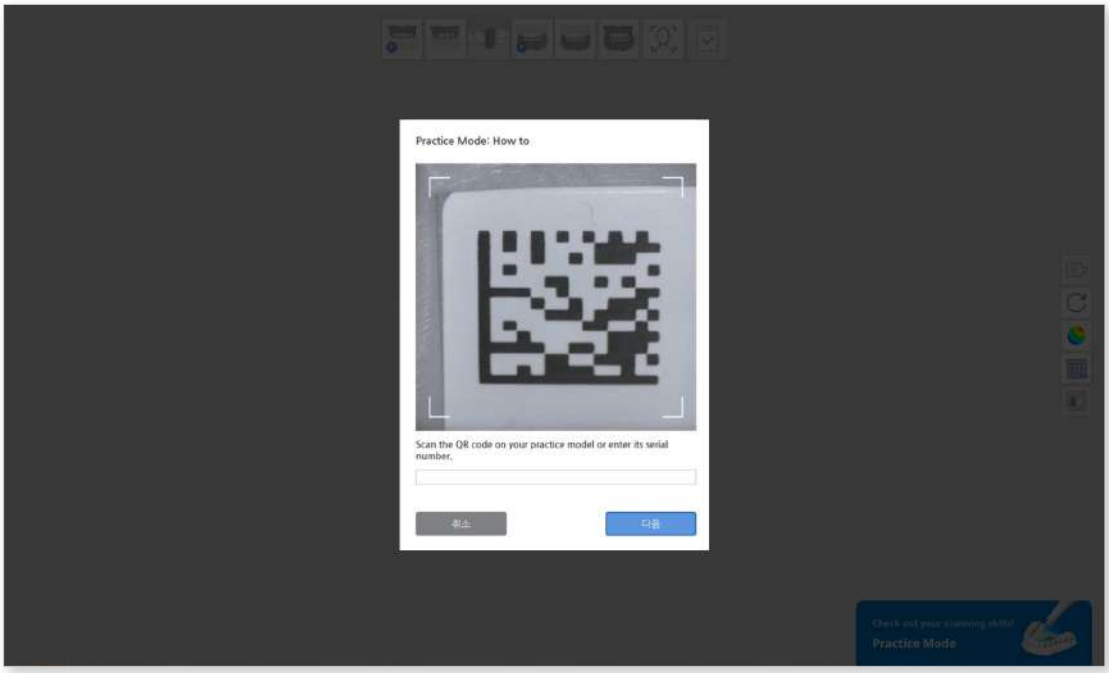
If there are two or more stored sample data, check and select the correct serial number attached to the practice model.



Download the sample data from the server by scanning the QR code.

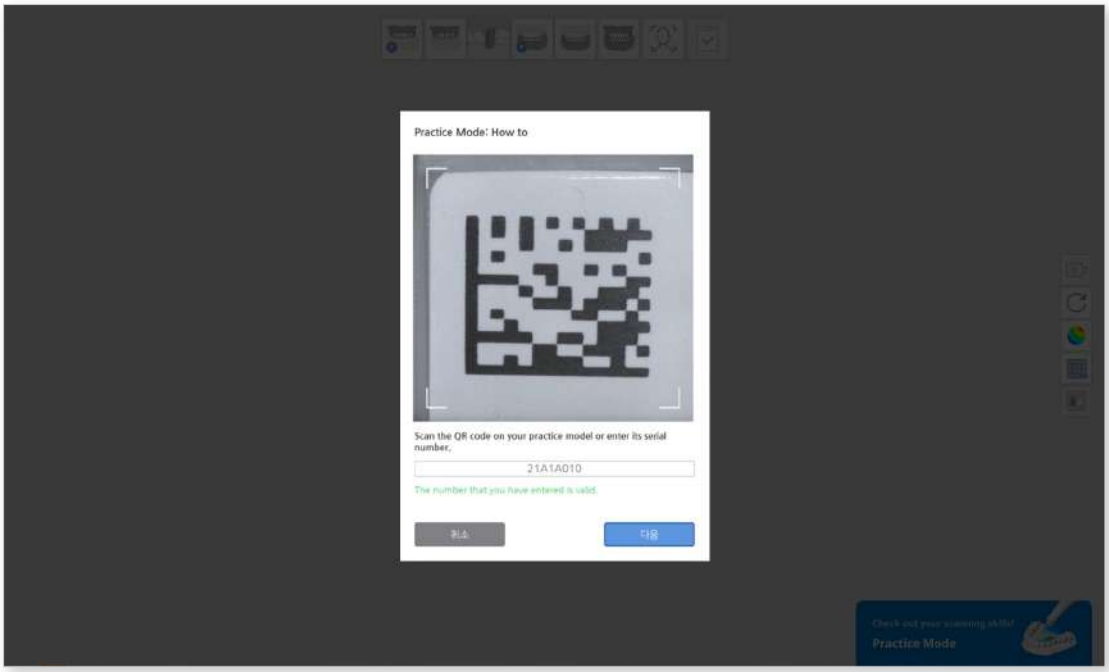
When the camera turns on, the scanner will recognize the QR code attached on the practice model.

If the QR code has been damaged, enter the serial number included on the sticker to download data.

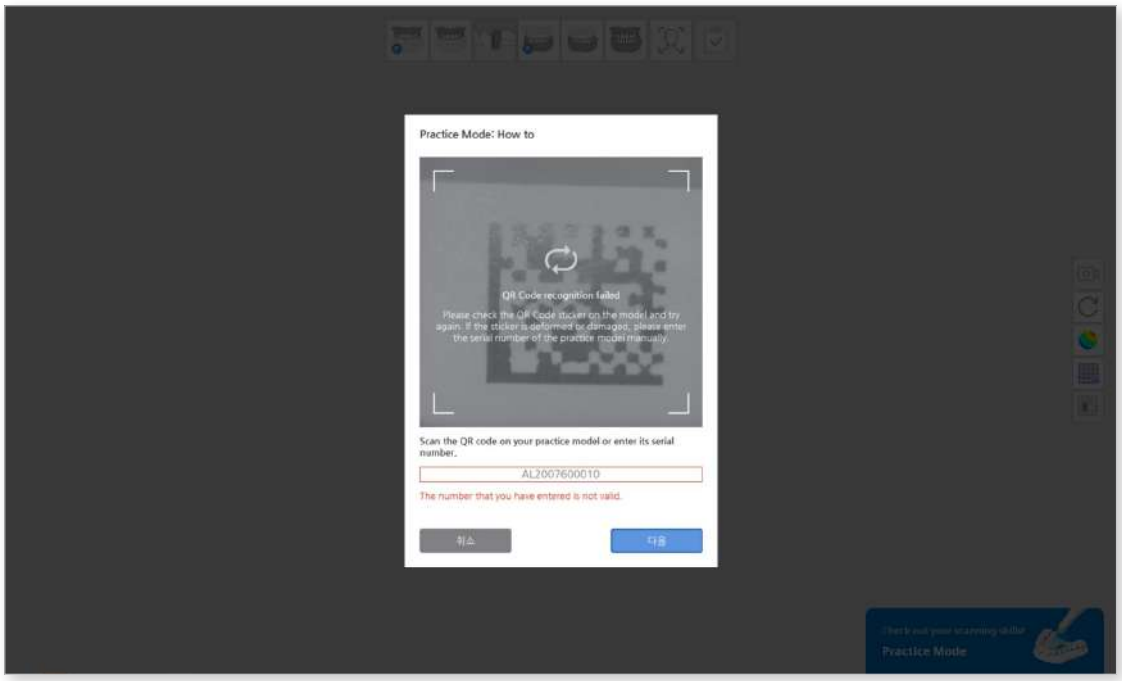


QR code or manual serial number validation will be displayed.

If the serial number is valid, the text will turn green.

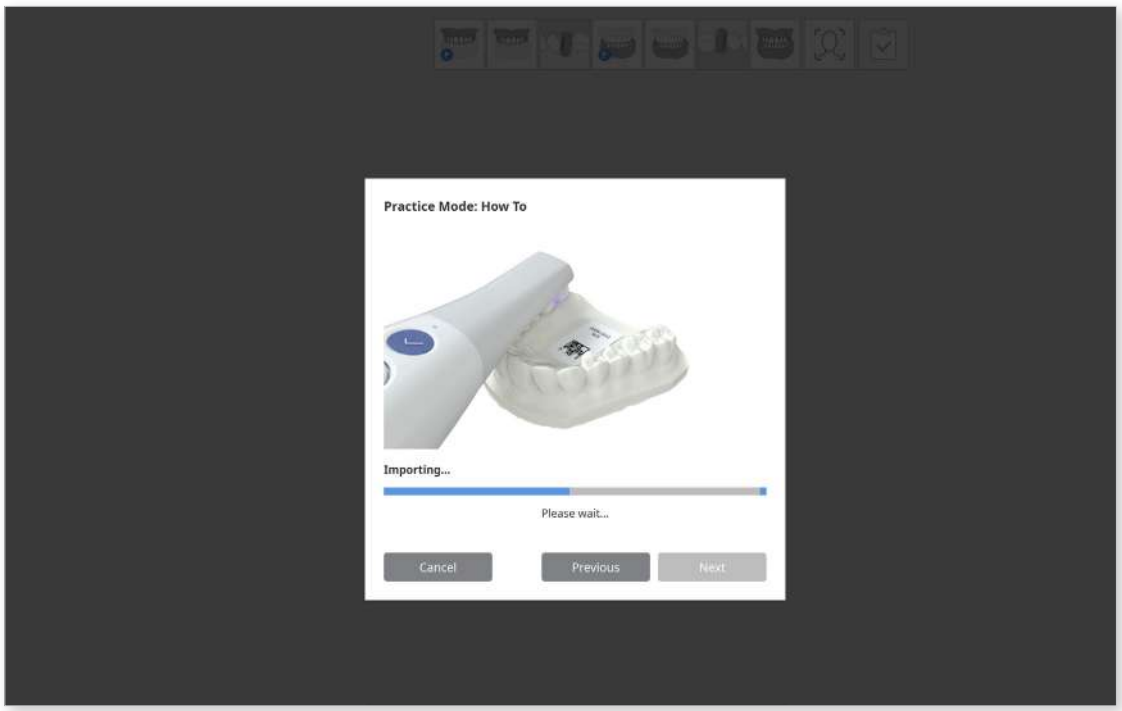


If the serial number is invalid, the text will tun red.



With a valid serial number, click “Next” to download the sample data from the server.

An information video on how to scan the practice model will be displayed during download.

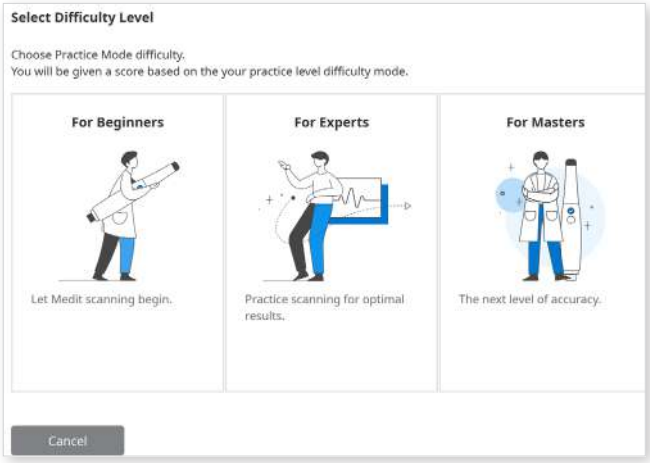


When download is complete, click “Next” to select the l a level of difficulty in the “Practice Mode.”

Select a level of difficulty in the “Practice Mode.”

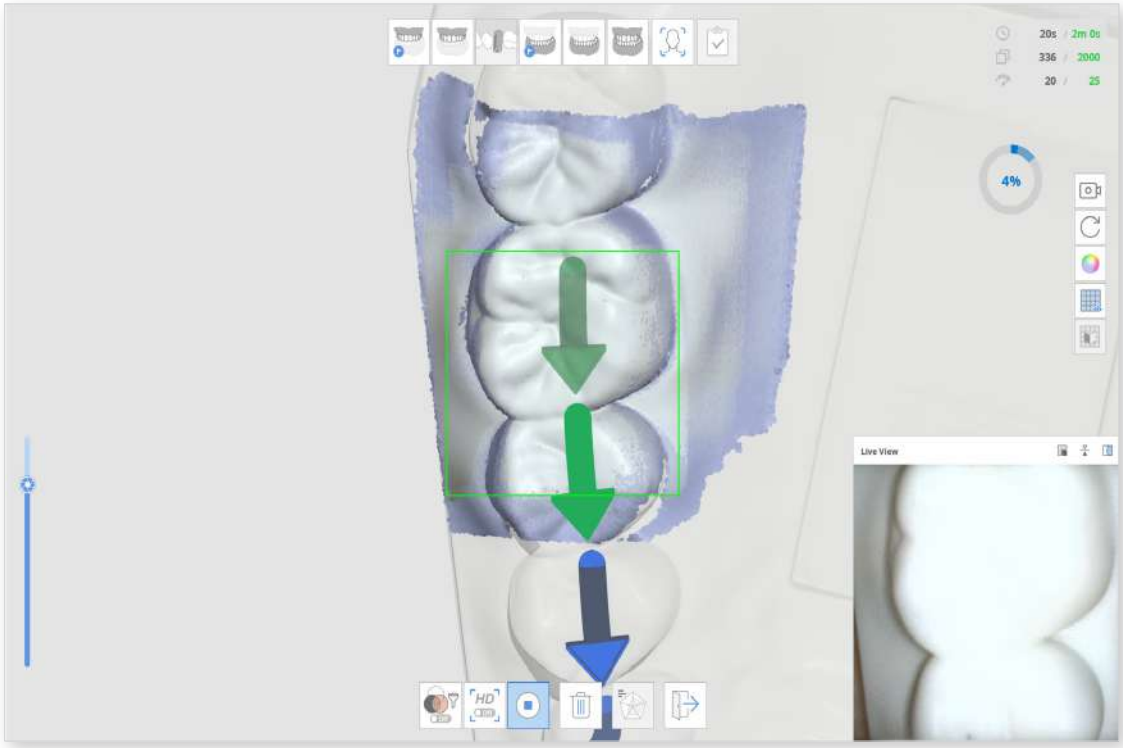
For Beginners	A level for beginners who are not accustomed to using an intraoral scanner.
For Experts	A level for experts who are accustomed to using an intraoral scanner.
For Masters	A level for masters who want to reach the highest level beyond the experts.

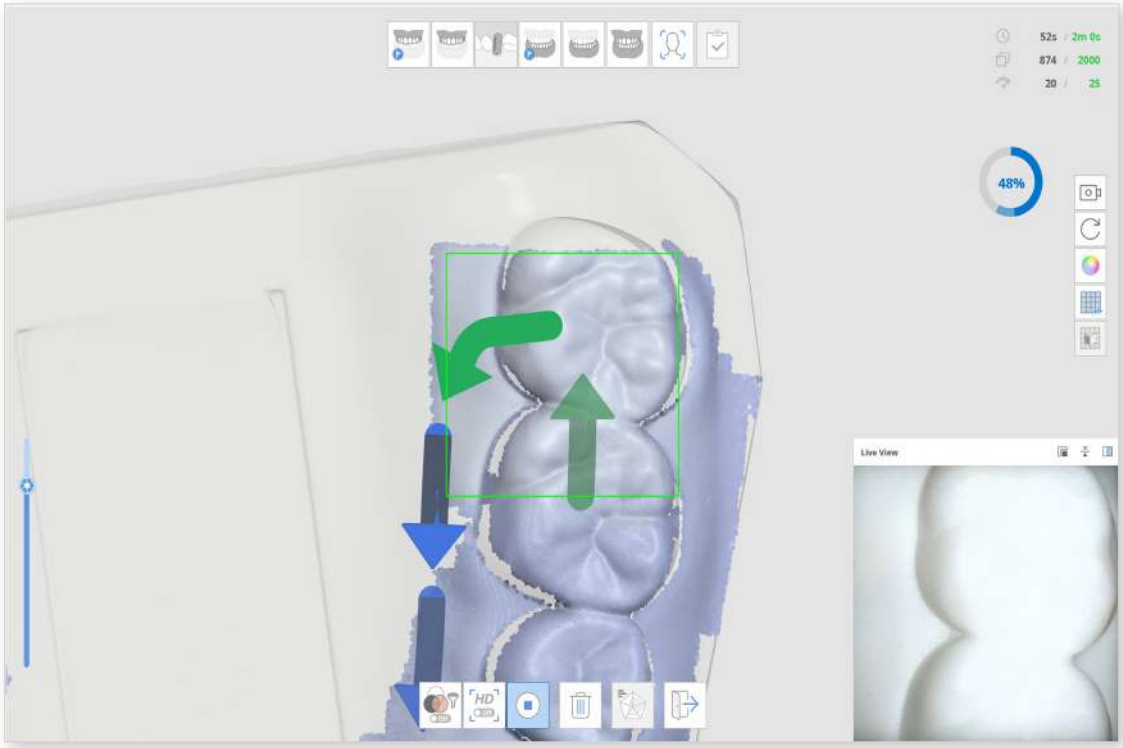
The score criteria is varied based on the difficulty level. The acquired scan data will be deleted if the difficulty level is changed during scanning.



① Click the “Scan” button to start after the downloaded sample data is displayed.

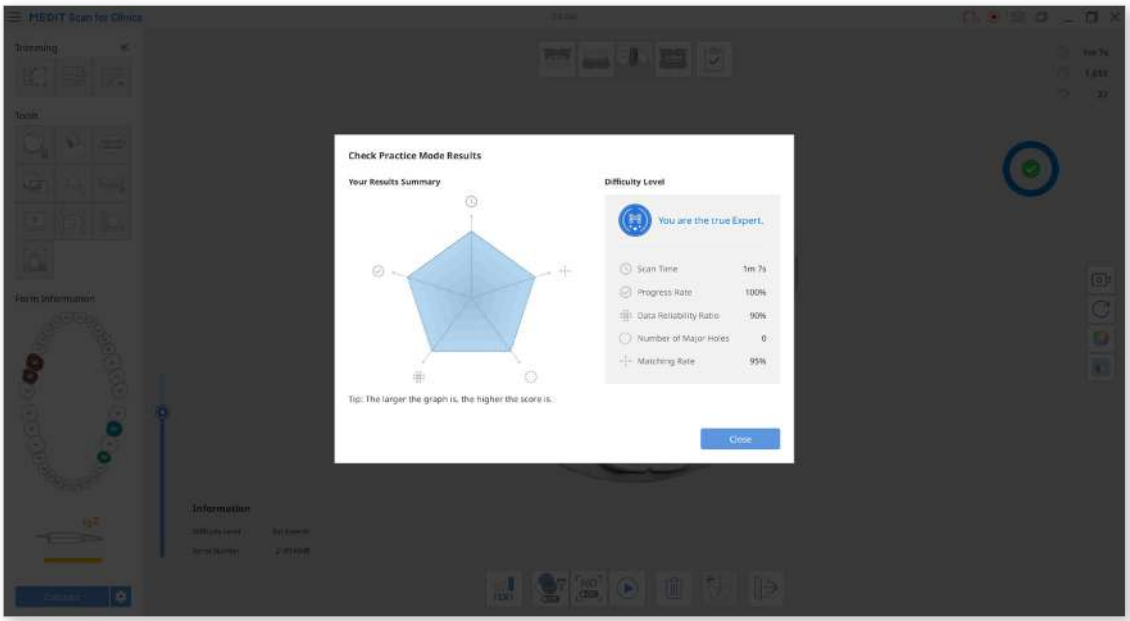
② Check the information and progress while acquiring data for effective scanning practice.



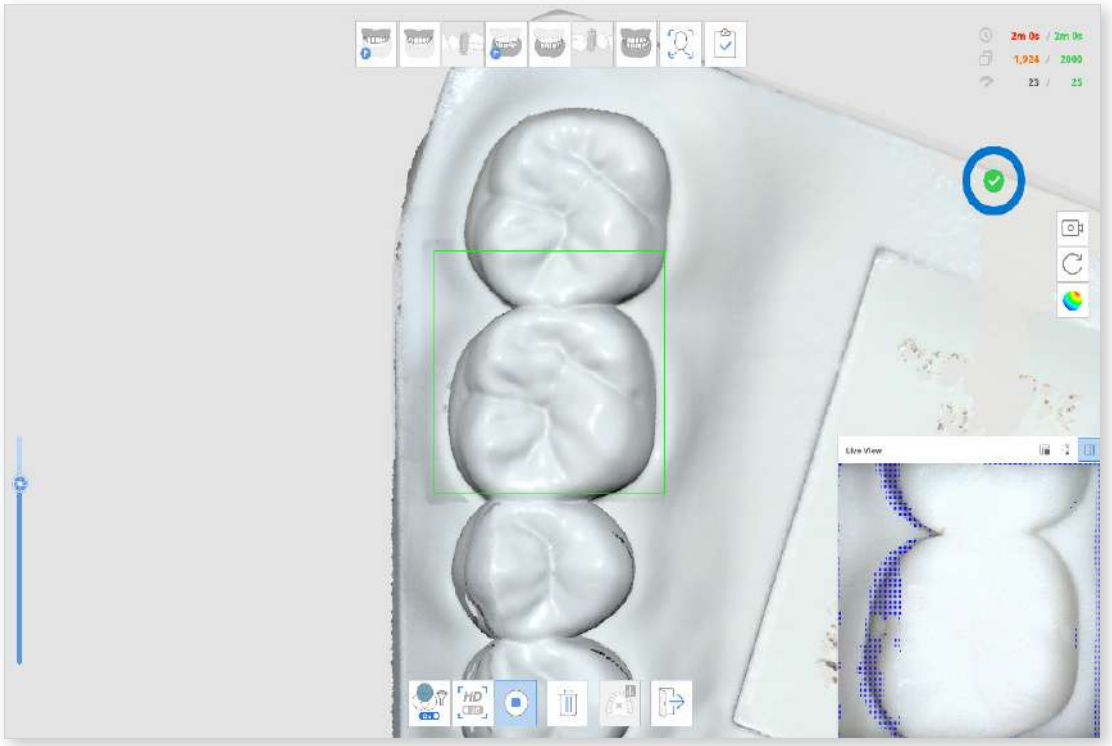


③ When scan data is acquired above a certain standard, a check mark will be displayed in the progress bar and the “View Results” button will be activated.

④ Click “View Results” to check the score. Score will be based on selected difficulty level, scan time, Progress Rate, Data Reliability Ratio, etc.



⑤ Additional scans are available after viewing the results. The “View Results” could be re-run based on data from additional scanning.

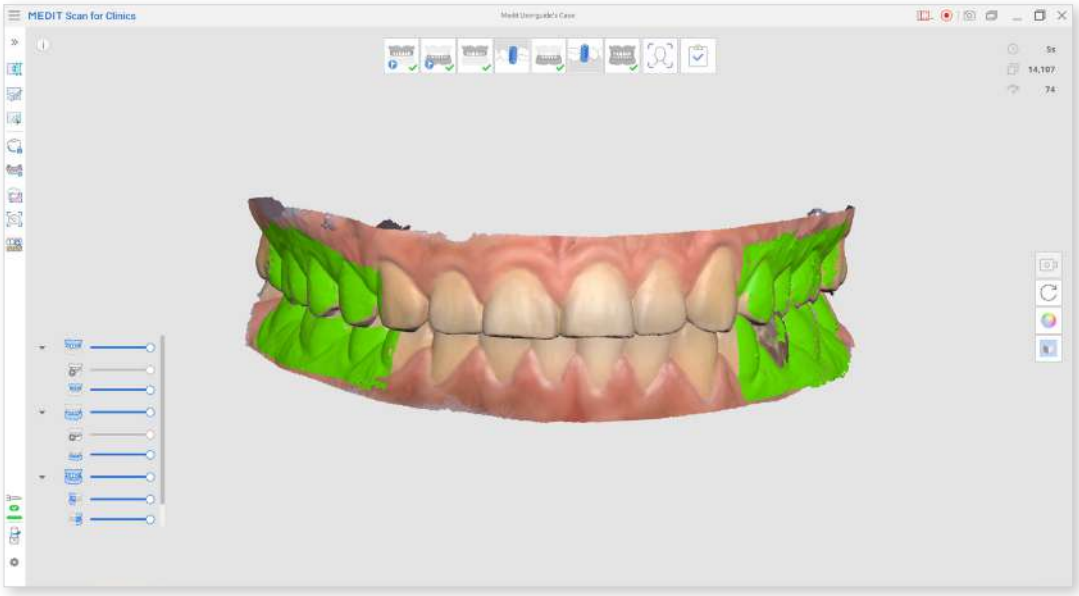


Main Toolbar Functions

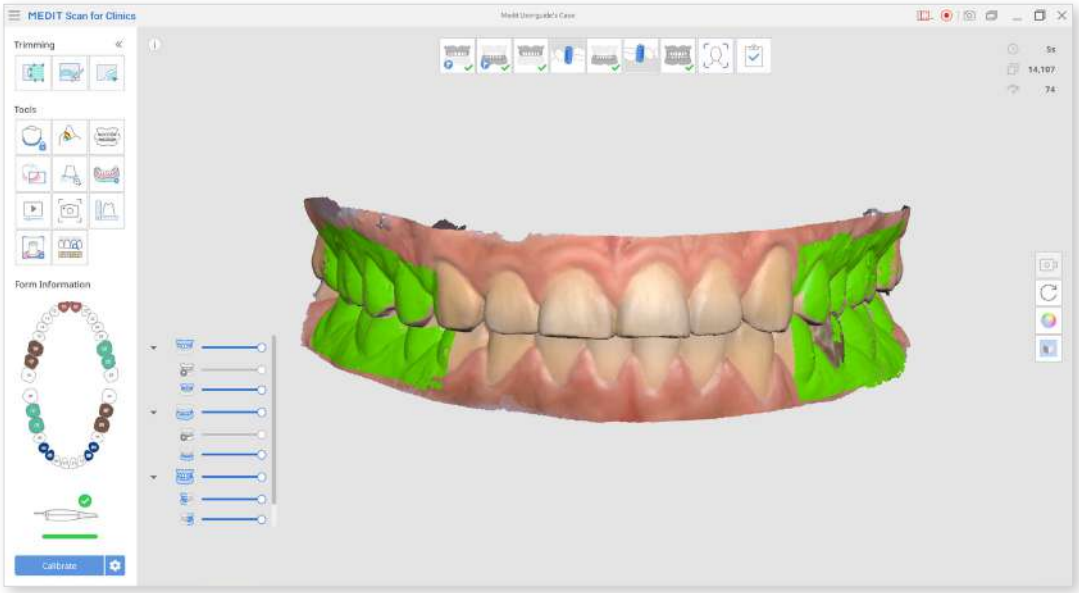
The Main Toolbar contains tools for editing and analyzing the 3D model, as well as the scanner status.

How to Use Side Toolbox Fold/Unfold

You can now “Fold” and “Unfold” the Side Toolbox, which occupies the left side of the screen while using Scan for Clinics. By providing the option to hide the Toolbox, you can focus more on the scan data and hide tools not in use.

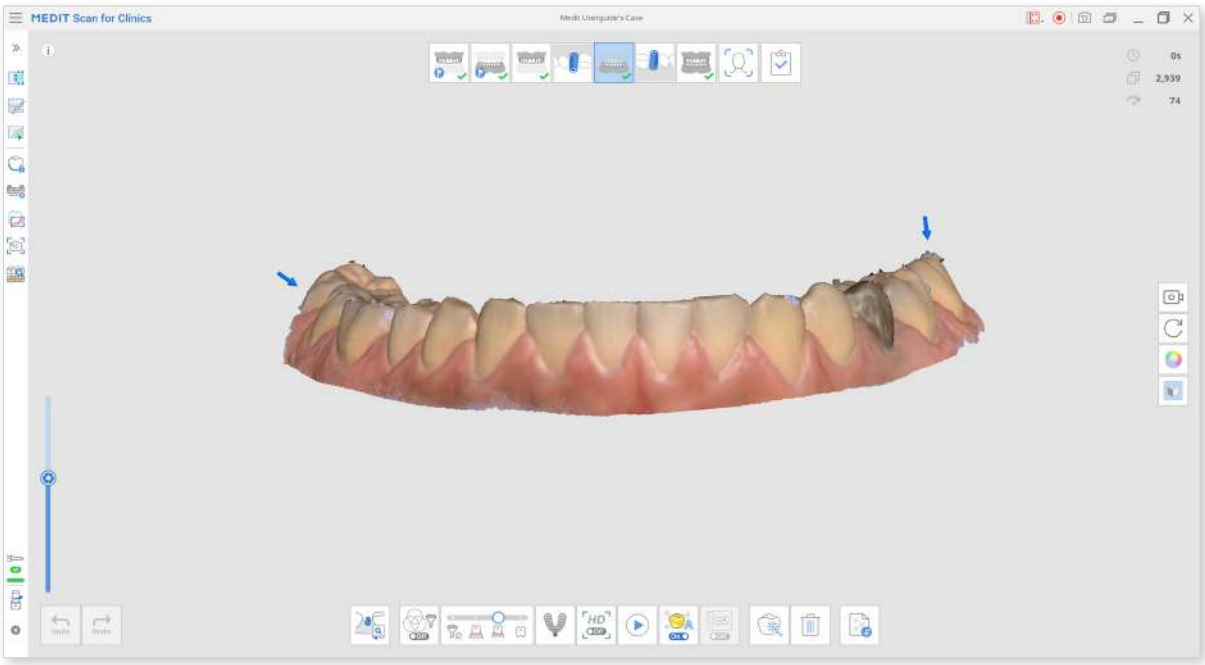


<Fold>



<Unfold>

Even when folded, the frequently used tools used while scanning, such as “Trimming (Polyline, Brush, Quick),” “Lock Area,” “Smart Data Cleaning, Result Preview,” “HD Camera” and “Smart Shade Guide” are still available.

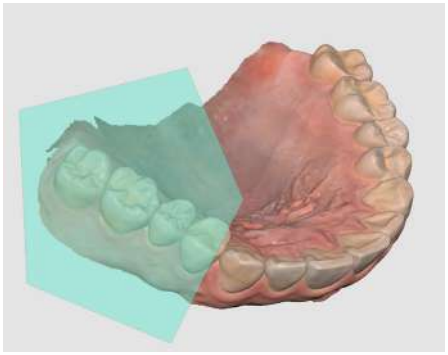
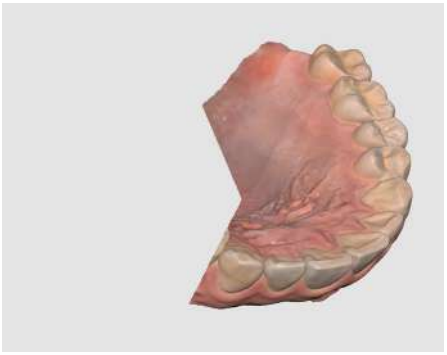


Trimming

Trimming tools help to edit and remove noise from the data.

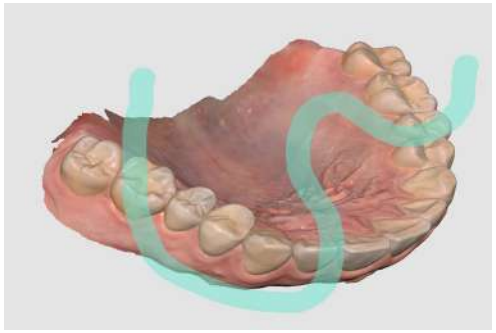
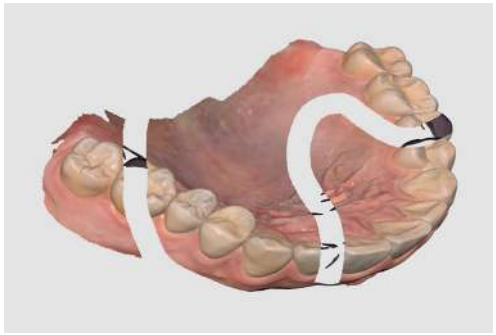
Polyline Trimming

	Removes all entities within a polyline shape drawn on the screen.

Select	Remove
	

Brush Trimming

	Removes all entities on a freehand-drawn path on the screen. This brush comes in three different sizes. Utilize the **Noise Trimming** tool to cut out the noise without affecting the data itself.

Data Selection	Delete Selected Data
	
	

Toolbox: Noise Trimming

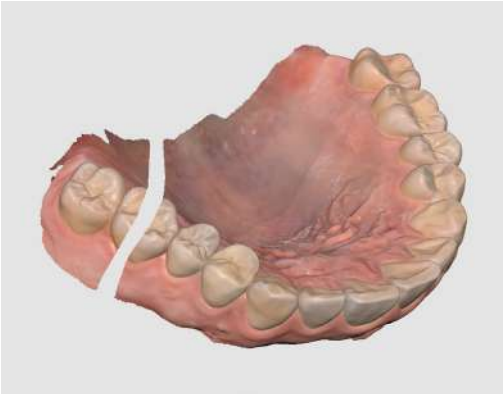
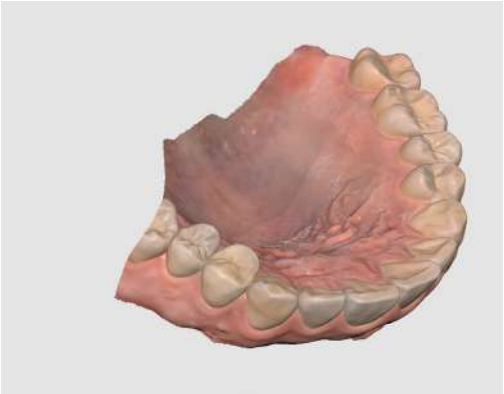
	Brush Size	Trims the noise based on the selected size of the brush. This brush comes in three different sizes.
	Manual Noise Trimming	Allows for the removal of noise on the selected area.
	Automatic Noise Trimming	Automatically trims the noise data.

① Click “Noise Trimming”  located on the bottom of the screen. Choose the size of the brush and select the areas where noise should be trimmed.

② Trim the noise manually using the brush or utilize the “Automatic Noise Trimming” function.

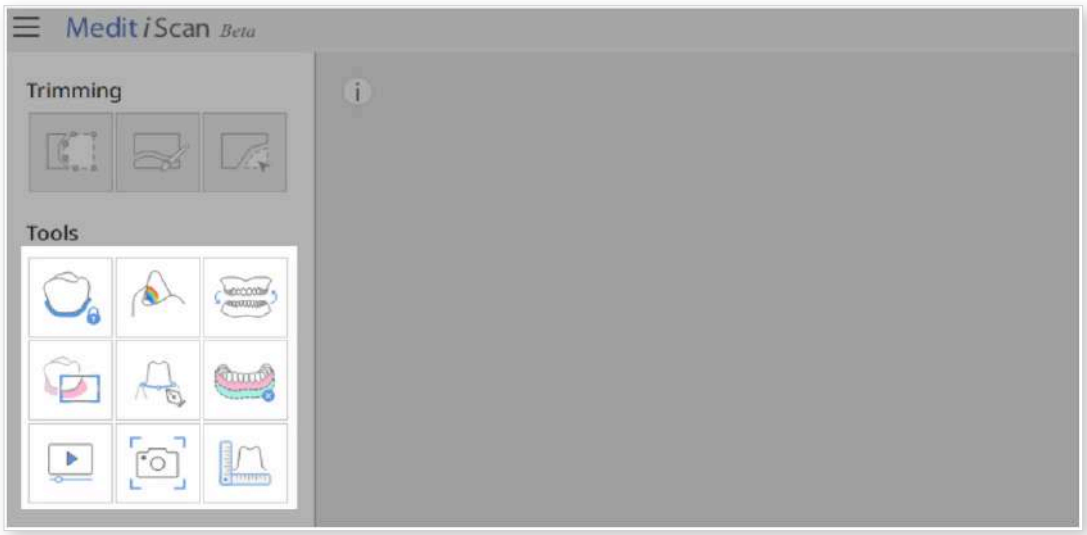
Quick Trimming

	Removes island data such as soft tissue.

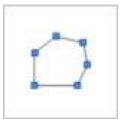
Select the Data	Delete Selected Data
	

Tools

This tool kit is useful for the scanning process, as well as getting maximum information during scanning.



Toolbox

	Polyline Selection	Selects all entities within a polyline shape drawn on the screen.
	Circle Selection	Selects all entities within a circular area.
	Brush Selection	Selects all entities on a freehand-drawn path on the screen. The brush comes in three different sizes.
	Selection	Enables the ability to select the area using different tools.
	Deselection	Deselects the area using different tools.
	Clear All Selection	Clears the entire selection.
	Confirm	Applies the margin line for selected tooth.

Lock Area

	You can lock a specific area using the “Selection” tools. Once the area is locked, further scanning will not affect the shape of this area. It will only affect the color. This feature is useful when preserving the retracted gingiva data scanned after cord removal.

How to Lock the Area

① Click “Lock Area” and choose a selection tool.

② Select the area you want to lock. The selected area is indicated by a different color.

Before Selection	After Selection
	

How to Unlock the Area

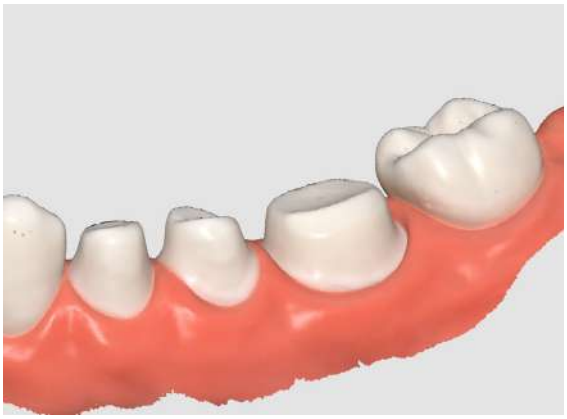
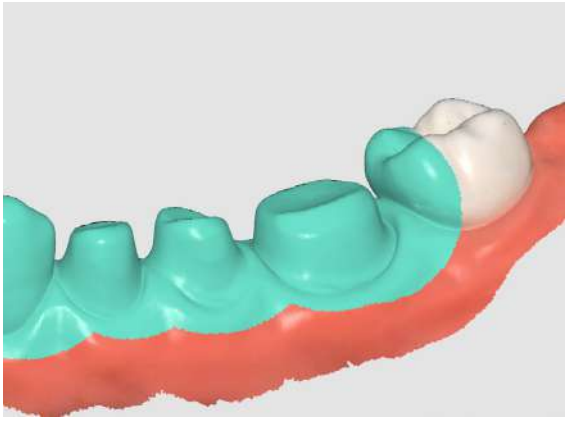
① Click “Deselection.”

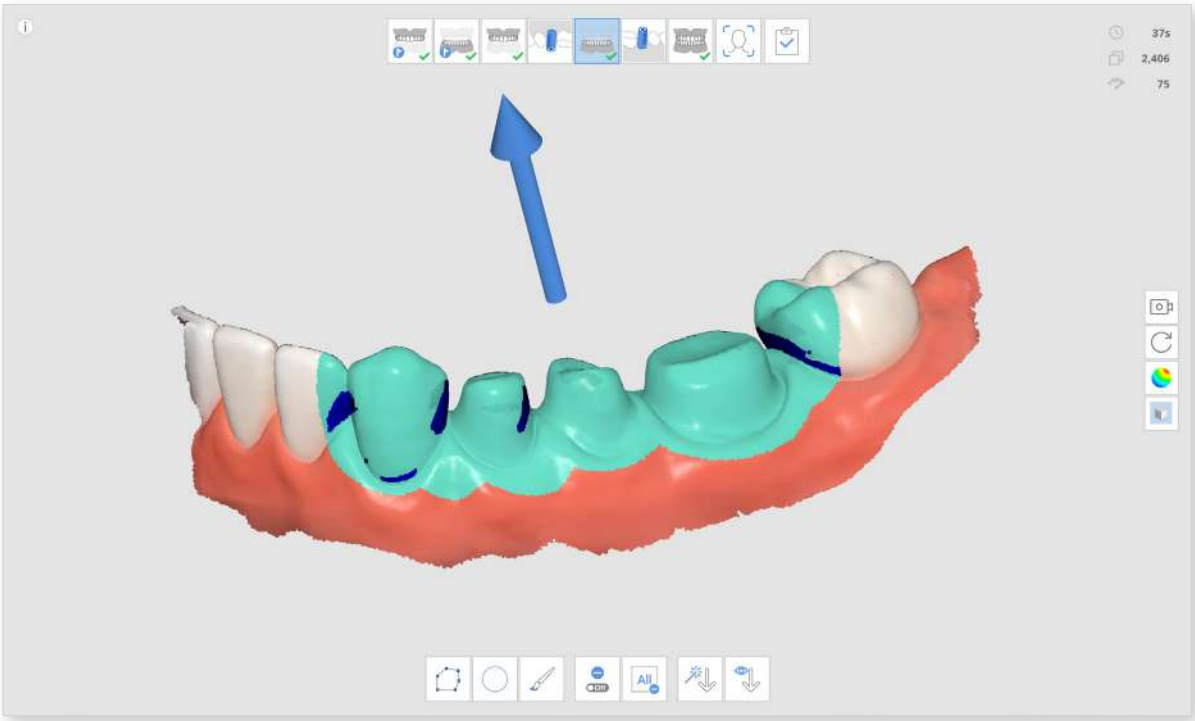
② Select the area to unlock.

③ If the user wants to unlock the entire area, click “Clear All.”

Undercut Analysis

	Analyzes the undercut area based on the direction of insertion. The user can set the direction using two methods.

Before Selection	After Selection
	



Toolbox: Set Insertion Direction

	Auto Direction	System automatically calculates the direction in which the undercut area is minimized. Then, it displays the undercut area on the View Screen.
	Manual Direction	System calculates the undercut area based on the direction specified by user. Then, it displays the undercut area on the View Screen.

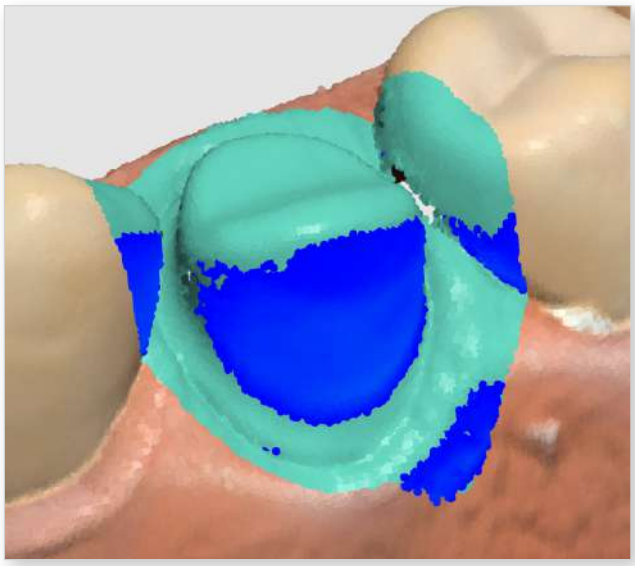
How to Calculate the Undercut Region Using Auto Direction

① Click “Undercut Analysis.”

② Set the region of interest to calculate the undercut area.

> If the user does not set the region of interest, the system will calculate the undercut region using all the 3D models on the View Screen.

③ Click “Auto Direction.”



How to Set the Insertion Direction Manually

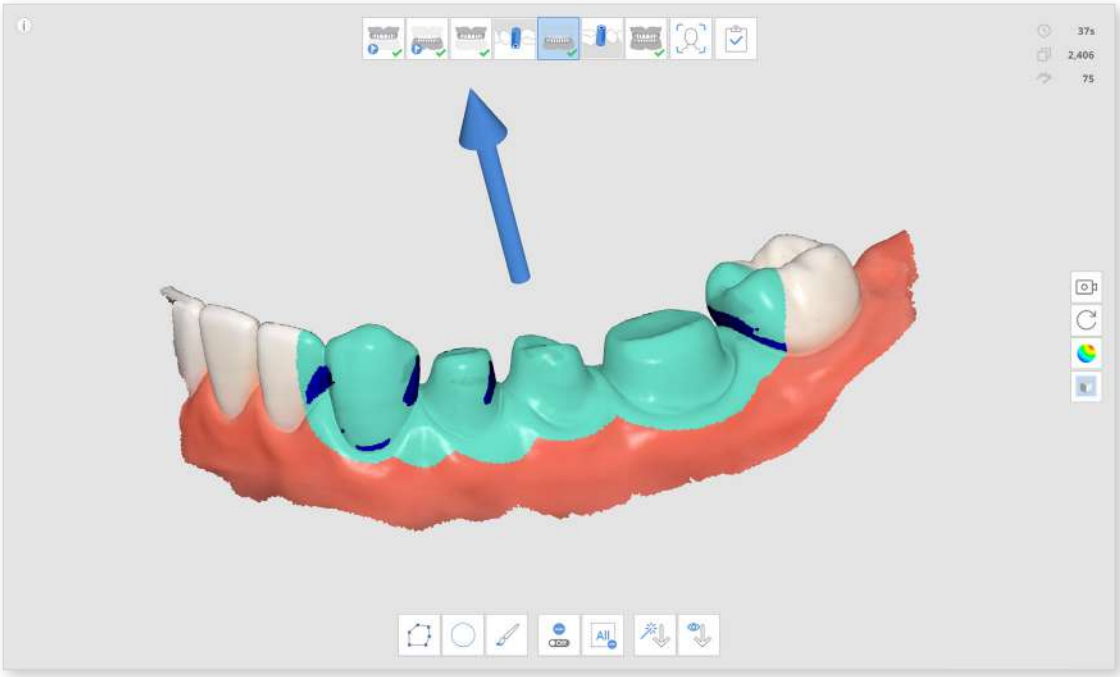
① Click “Undercut Analysis.”

② Adjust the direction of model by using “Move”, “Rotate”, “Zoom In”, and “Zoom Out” tools.

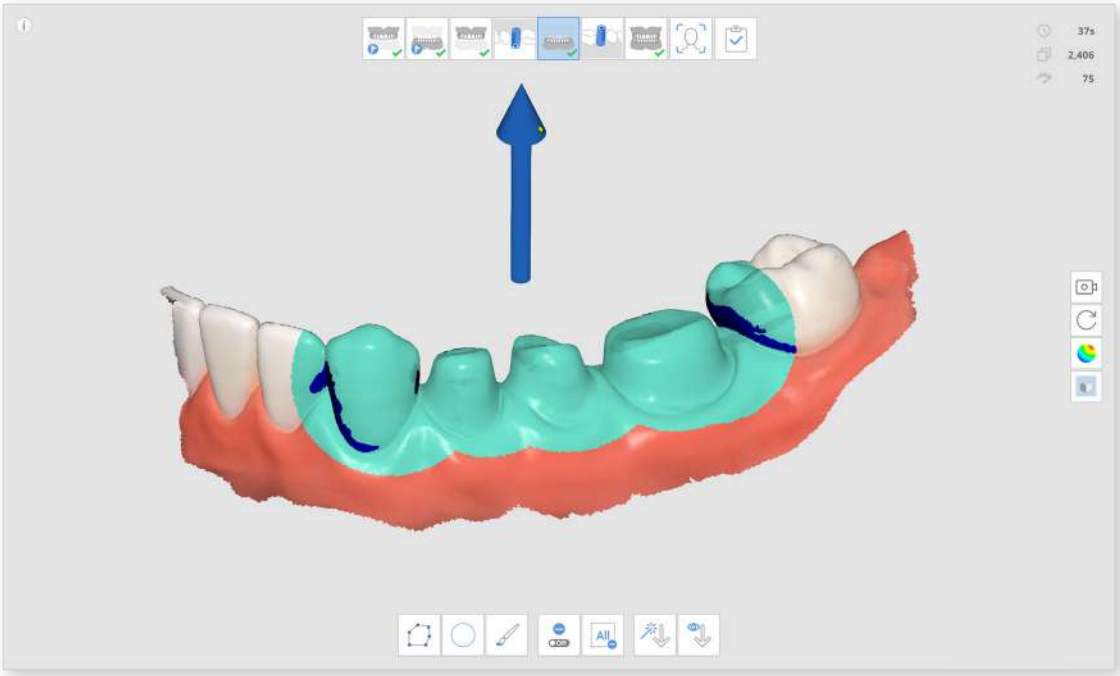
③ Click “Manual Direction.”

How to Calculate Undercut Area Using Insertion Path Arrows

① Use “Auto Direction” or “Manual Direction” to calculate the undercut. An arrow will indicate the insertion direction.



② Left-clicking the arrow and drag to change its direction and angle. You will be able to see the changes in real-time.



Swap Maxilla and Mandible

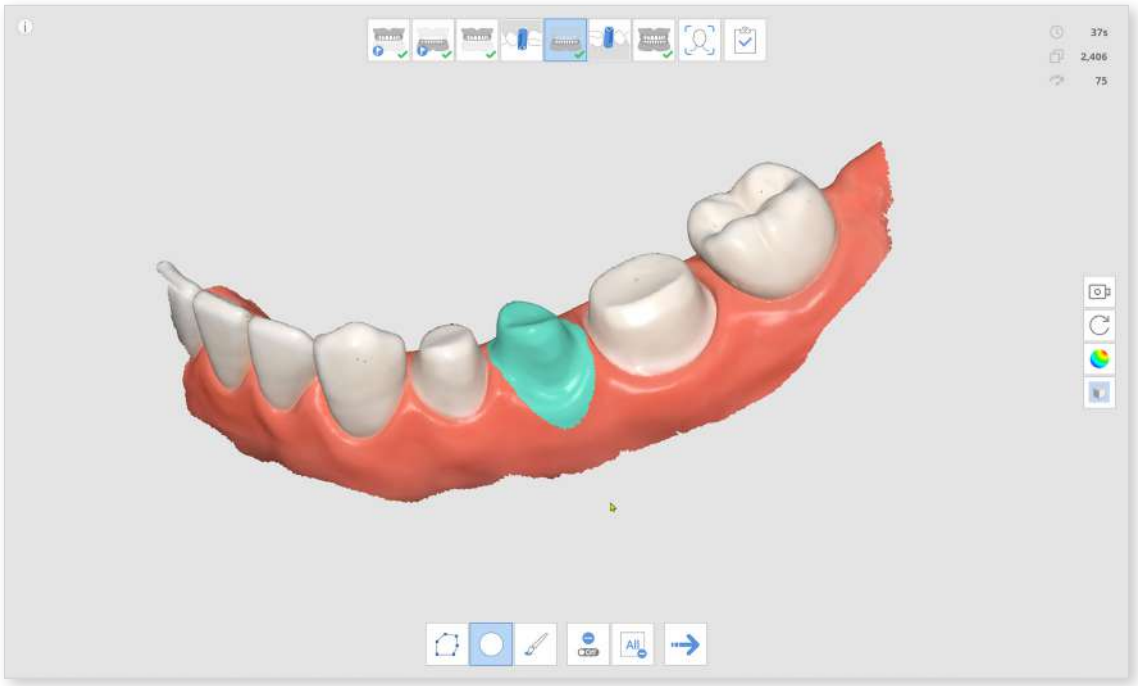
	Swaps maxilla and mandible scans. This is useful if the operator accidentally scans the wrong jaw.

Result Preview

	Shows preview of the selected area to check the quality of data before actual processing.

How to Use

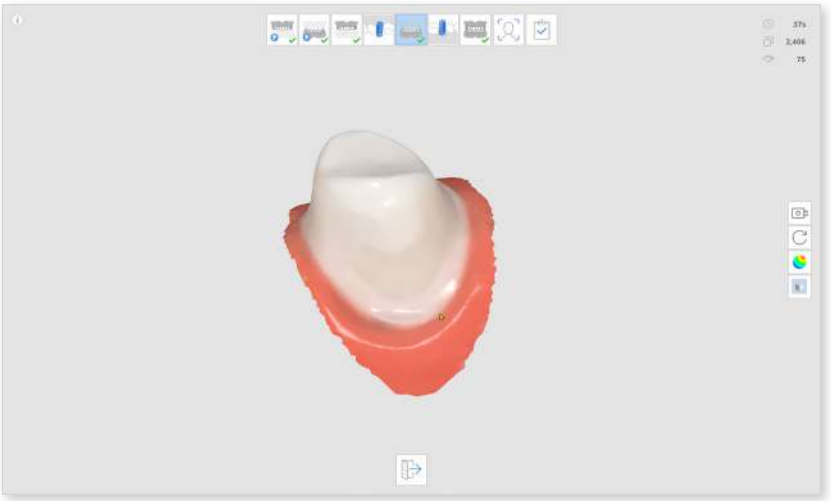
① Click “Result Preview.”



② Select the area you want to preview.

③ Click ✓ .

④ System shows the preview result.



Margin Line

	Creates a margin line using tools such as “Auto Creation”, “Manual Creation”, and “Edit.” The margin line information can also be imported to a design program.

Toolbox

	Auto Creation	Creates a margin line automatically based on the points selected by the user. By selecting multiple points, a closed margin line will be created.
	Manual Creation	Creates a margin line manually according to the points selected by the user.
	Edit	Edits the margin line. User can add, move, and remove the control points of a margin line.
	Delete	Deletes the margin line.
	Curvature Display Mode	Can see curvature of data through the Color Map.
	Section View	Displays the section of the area where the mouse is located.

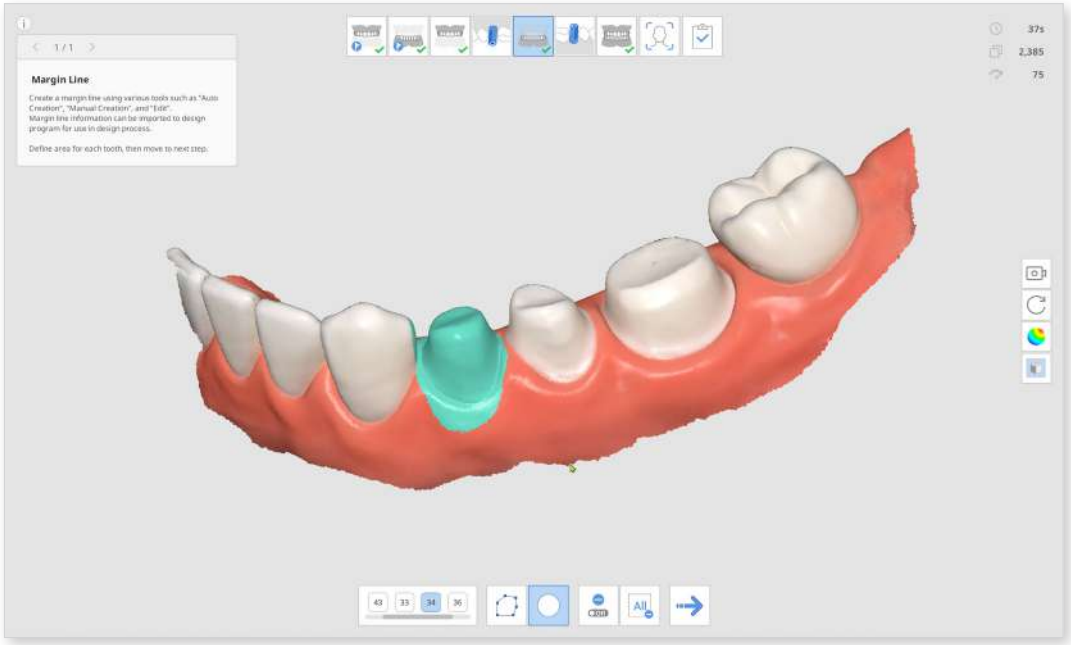
How to Create a Margin Line

① Run Margin Line.

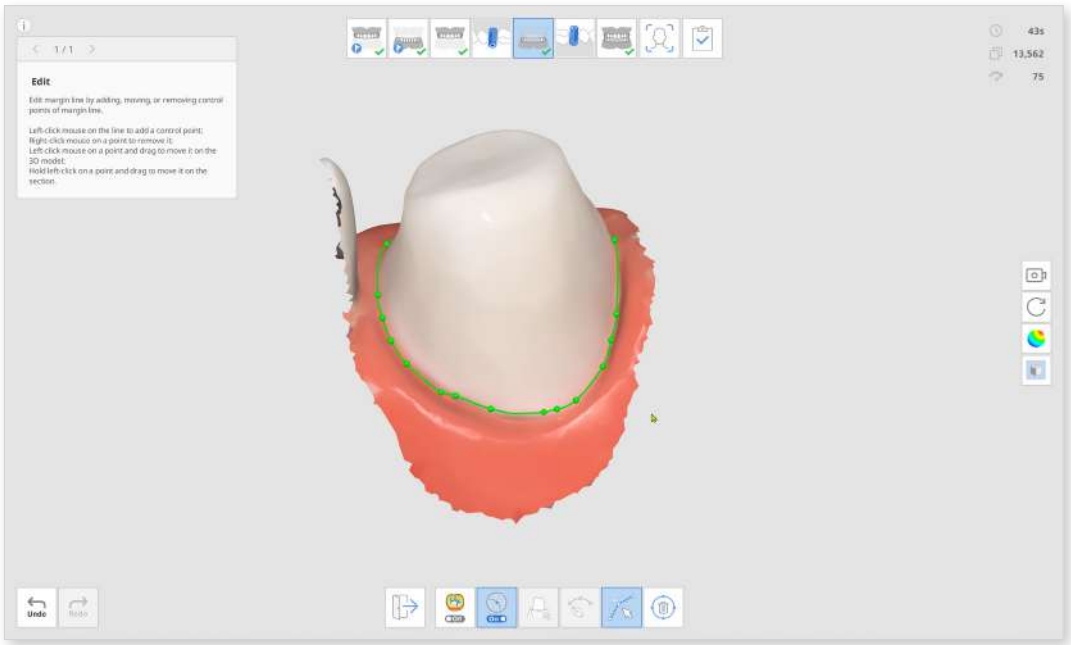
② Select maxilla or mandible.

③ Select the tooth number.

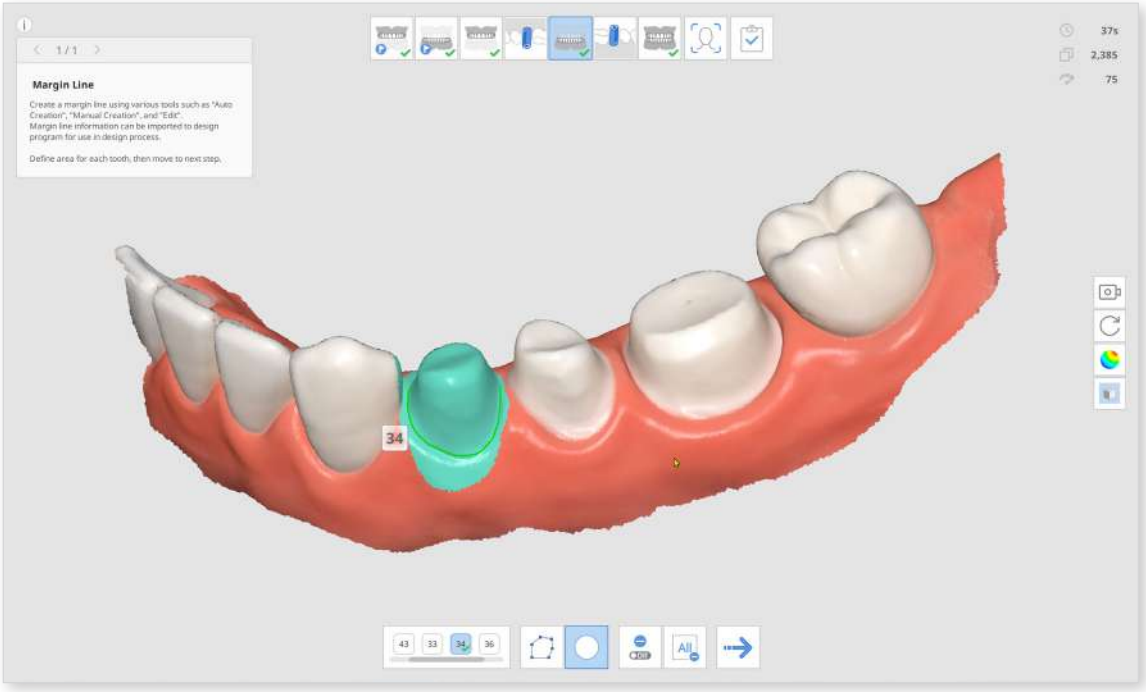
④ Define the region for the selected tooth. Then, click “Confirm.”
System will generate a temporary result using selected area. User can create the margin line on this result.



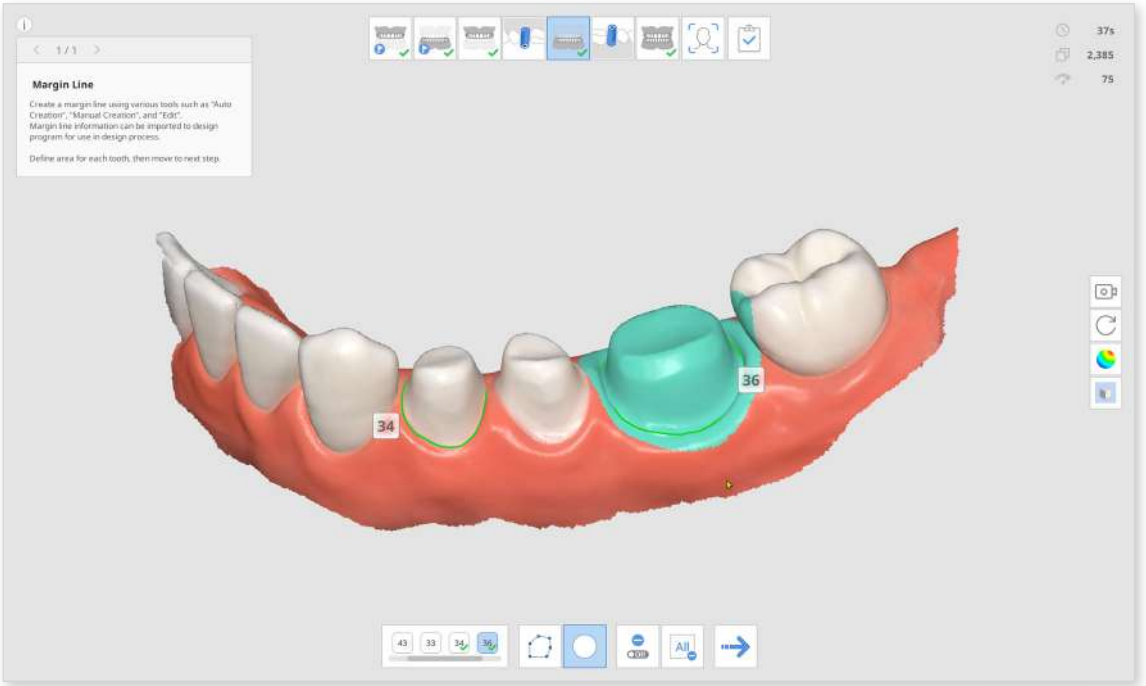
⑤ Create the margin line and click “Confirm.”



⑥ The margin line, along with the tooth number, will be shown.



⑦ Create the margin line for other teeth by repeating the process.



Margin Line Control During Auto Creation

A control point can be added during “Auto Creation.”
If a control point is added, the system will recalculate the entire margin line based on the control points.

Margin Line Control During Manual Creation

A control point can be added by clicking the left mouse button on the model. Hold and drag the mouse to move the control point only onto the section.

Margin Line Control During Editing

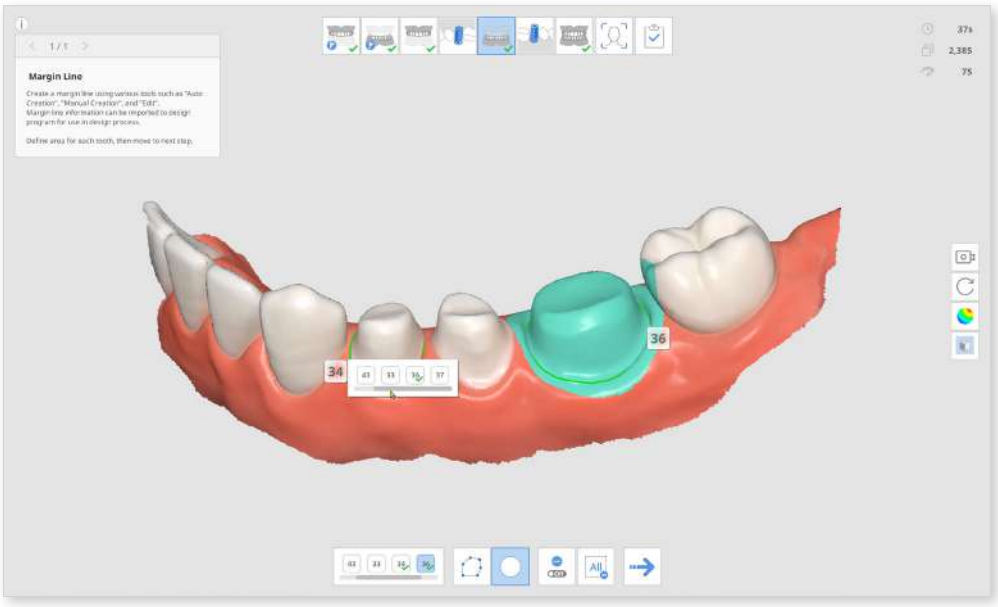
Add, move, and remove control points of the margin line. There are various methods to control the margin line during Editing.

- Click the left mouse button on the line: Add a control point.
- Click the right mouse button on a point: Remove a control point.
- Click the left mouse button on a point and drag: Move selected point on the 3D model.
- Click the left mouse button and hold for 1 sec on a point and then drag: Move selected point on the section.

Change the Tooth Number for a Margin Line

If the user creates a margin line using the wrong tooth number, it can be changed using the steps below:

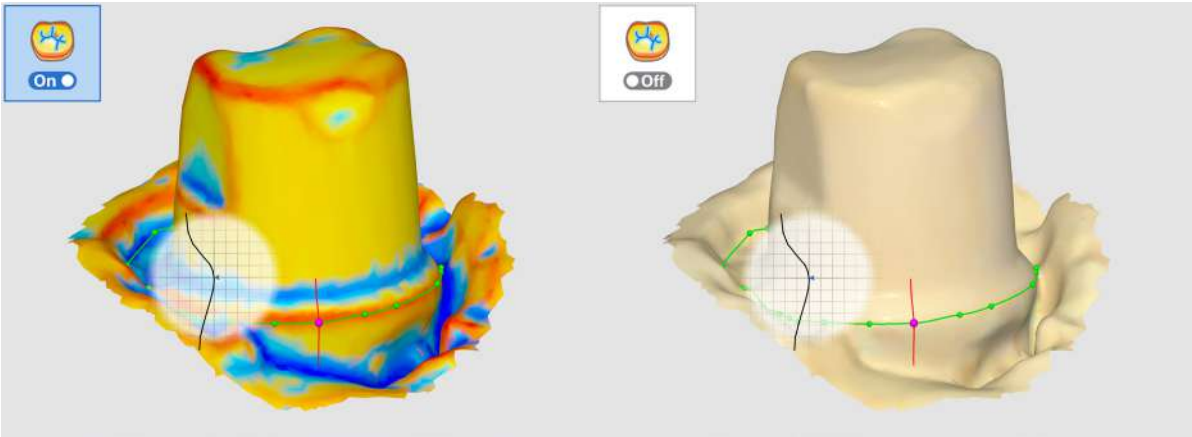
- Select the tooth number on the 3D view.
- Select a target number from the pop-up window.



Change the Curvature Display Mode

Select the area to specify the margin line. Then, check the curvature by turning on the function at the bottom of the screen.

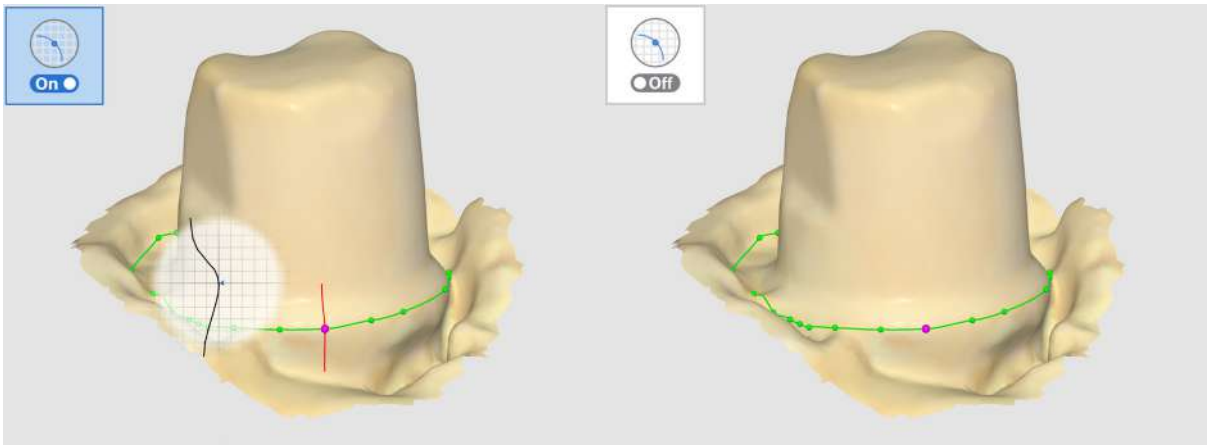
The scan data's surface curvature is displayed in various colors.



If the color is redder, it is more embossed and if the color is bluer, it is more engraved. You can use the color expression interval slider to adjust the color radius.

Change the Section View

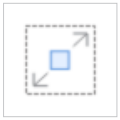
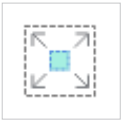
When creating or editing the margin line, this feature shows you the cross-sectional display based on your mouse location; this feature can be turned on and off. It prevents any areas being hidden when zoomed in closely and allows you to check the magnified margin more carefully.



Smart Data Cleaning

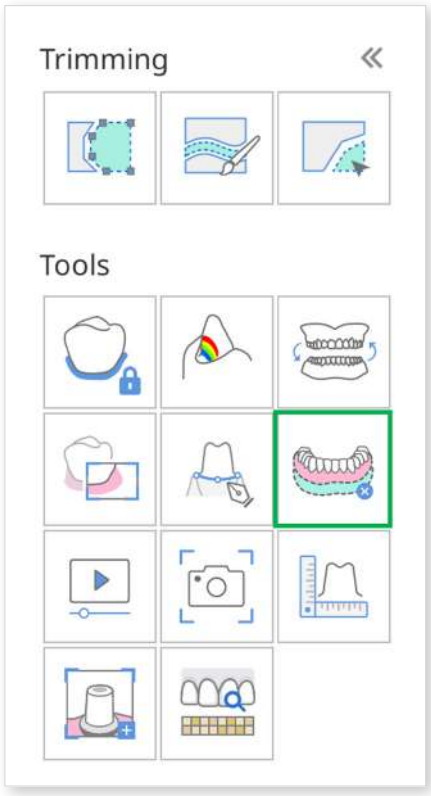
	The user can easily select and remove soft tissue by using the Reliability Map.

Toolbox

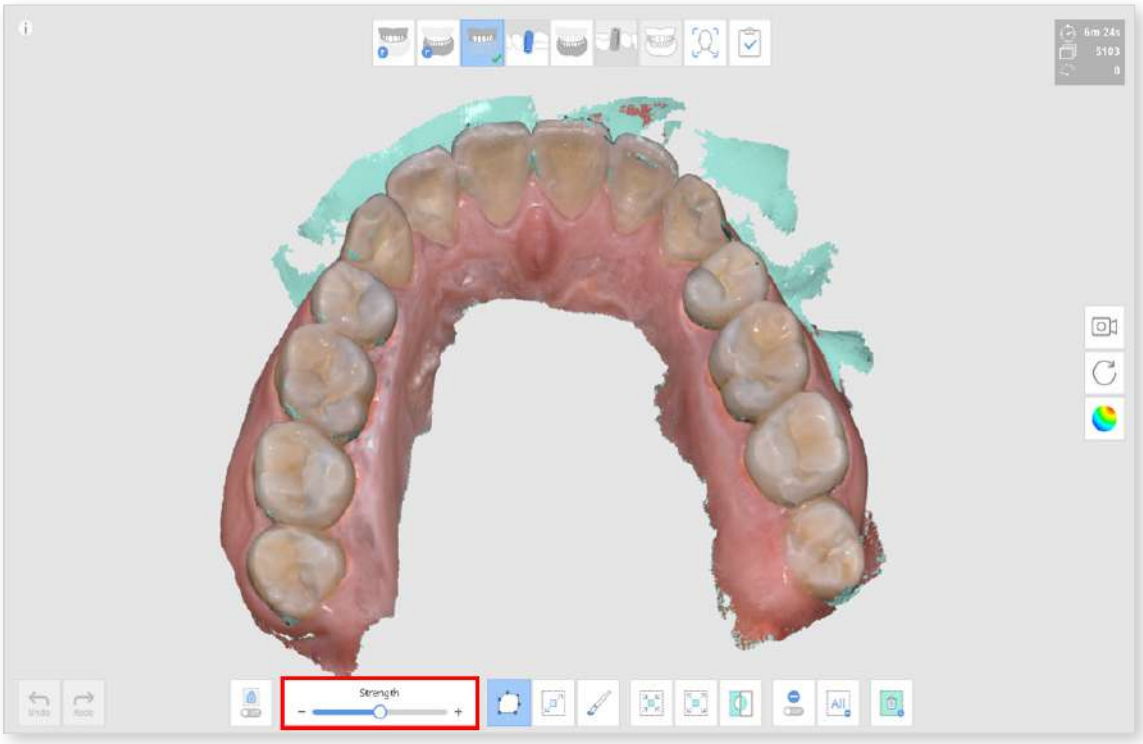
	Make Area Edit-Proof	Enables the user to select the area they want to protect from editing.
	Select Teeth Area	Selects only the teeth area in the scan data.
	Strength	Select the data with a slider bar. Easily select and remove the soft tissue using the Reliability Map. The selected data will be displayed in real-time.
	Flood Fill Selection	Selects all data in the connected area.
	Shrink Selected Area	Reduces the selected area each time the user presses the button.
	Expand Selected Area	Expands the selected area each time the user presses the button.
	Inverse Selected Area	Inverses the selection of area. The selected area will be deselected, and the previously not selected area will get selected.
	Delete Selected Area	Deletes the data in the selected area.

How to Use

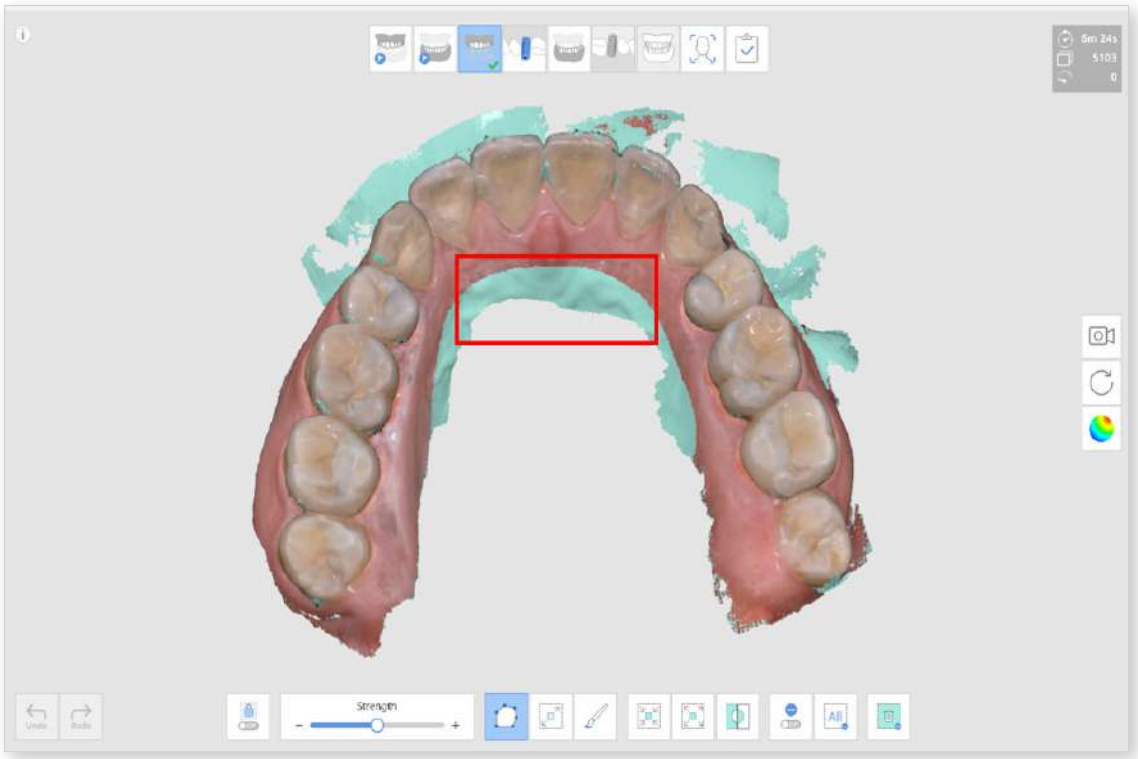
① Run “Smart Data Cleaning.”



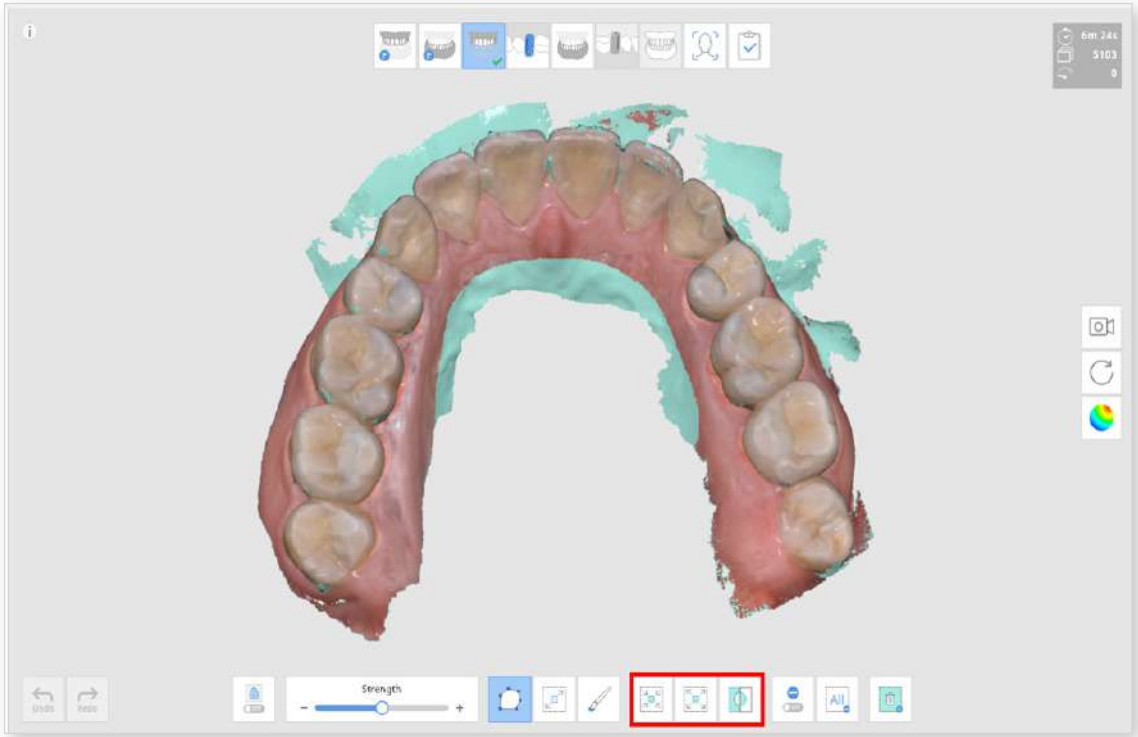
② Adjust the strength by using the slider bar. The system selects data based on the Reliability Map and shows it in real-time.



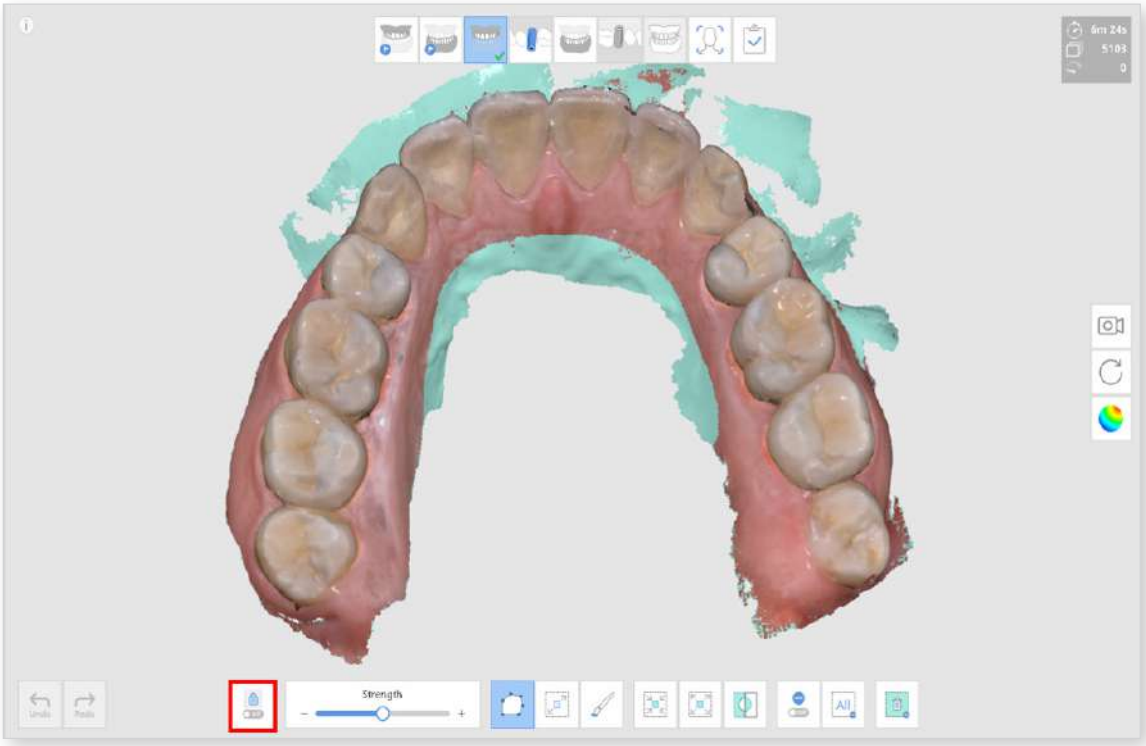
③ Increase or decrease this area using the slider bar.



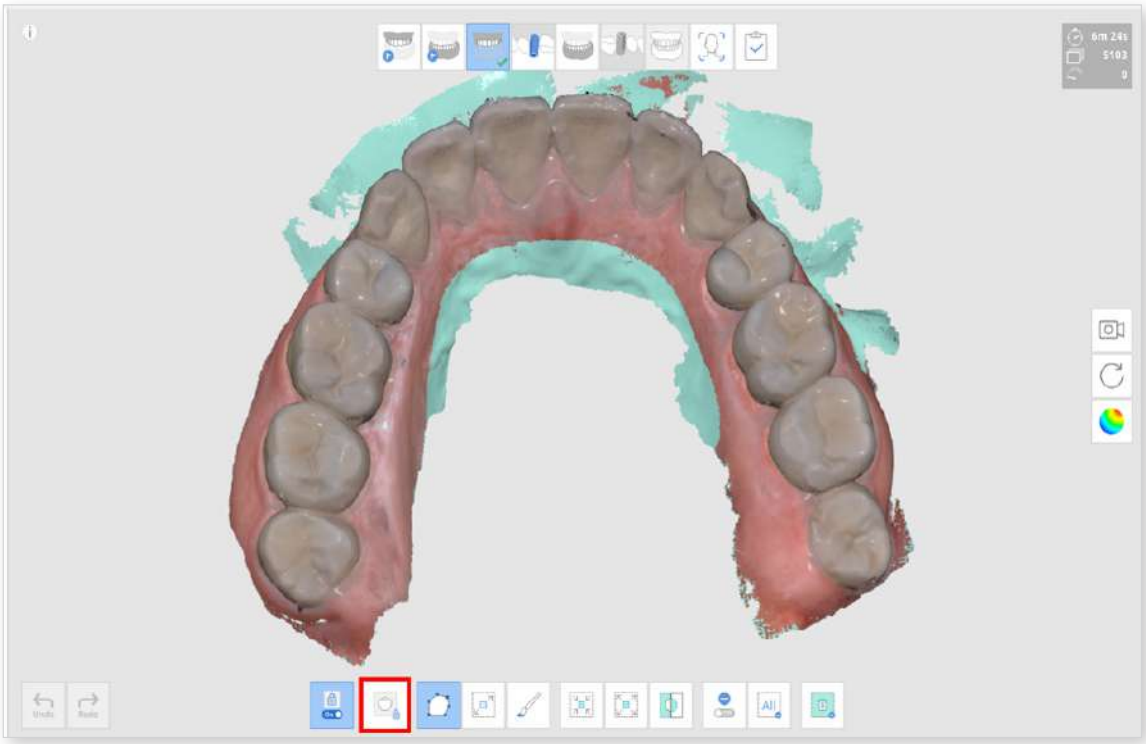
④ Expand, reduce, or inverse the selected area by using the buttons highlighted in the image below.



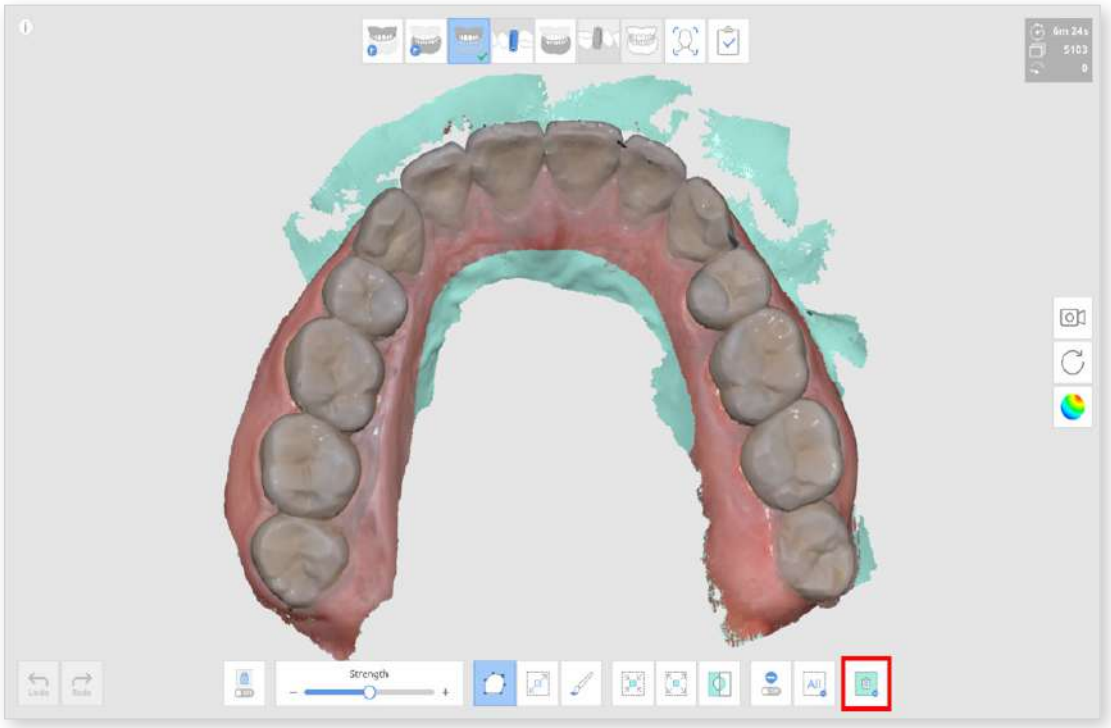
⑤ Click “Make Area Edit-Proof” to select an area. This area will be protected from deletion.



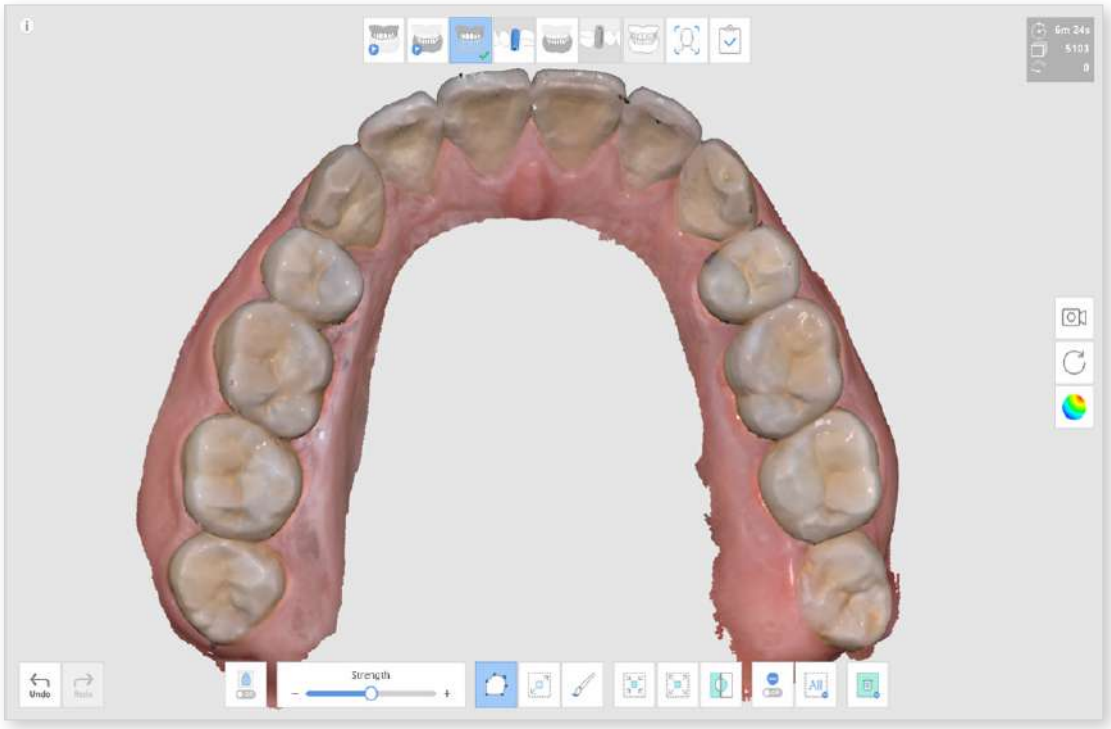
⑥ Click “Select Teeth Area” to select only the teeth area to protect from being deleted.



⑦ Click “Delete Selected Area” after selecting the correct area.

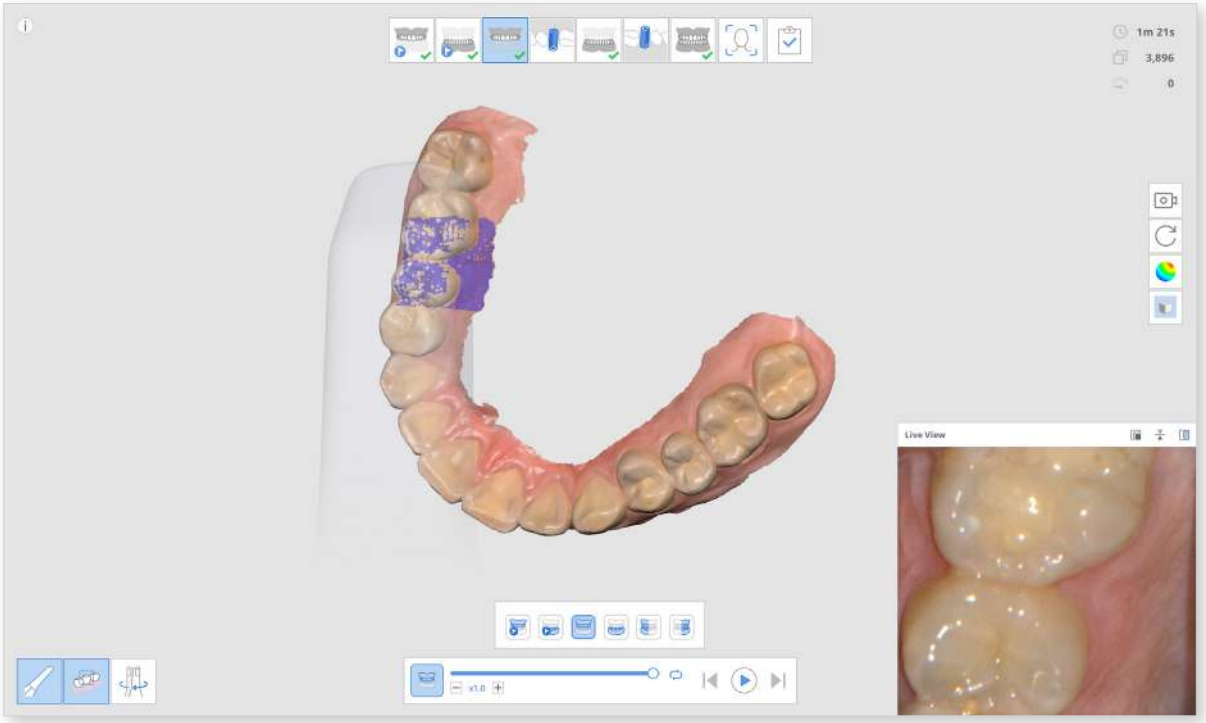


⑧ See the resulting image after deletion.

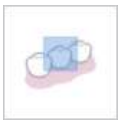


Scan Replay

	Replays the scanning process. The scanner tip and scanning area will be shown in the video. Check scanning conditions, such as scanning environment, how one scans, etc.



Toolbox

	Scanner Tip	Shows or hides the scanner tip during replay.
	Scan Area	Shows or hides the scanning area during replay.
	Reverse Tip Direction	Changes the direction of the tip during replay.

Video Control

Provides various tools to control the video.

	Slider Bar	Starts the video from the point of interest.
x1.0	Video Speed	Changes the speed (x0.5, x1.0, or x3.0).
	Repeat	Turns on or off play on repeat.
	Previous Replay	Replays the scan of the previous step.
	Play	Starts playing the scan replay.
	Stop	Stops the scan replay.
	Next Replay	Replays the scan of the next step.

The selected steps will be replayed in sequence.

HD Camera

	Takes 2D images with 3D model data and shares the images with a laboratory.

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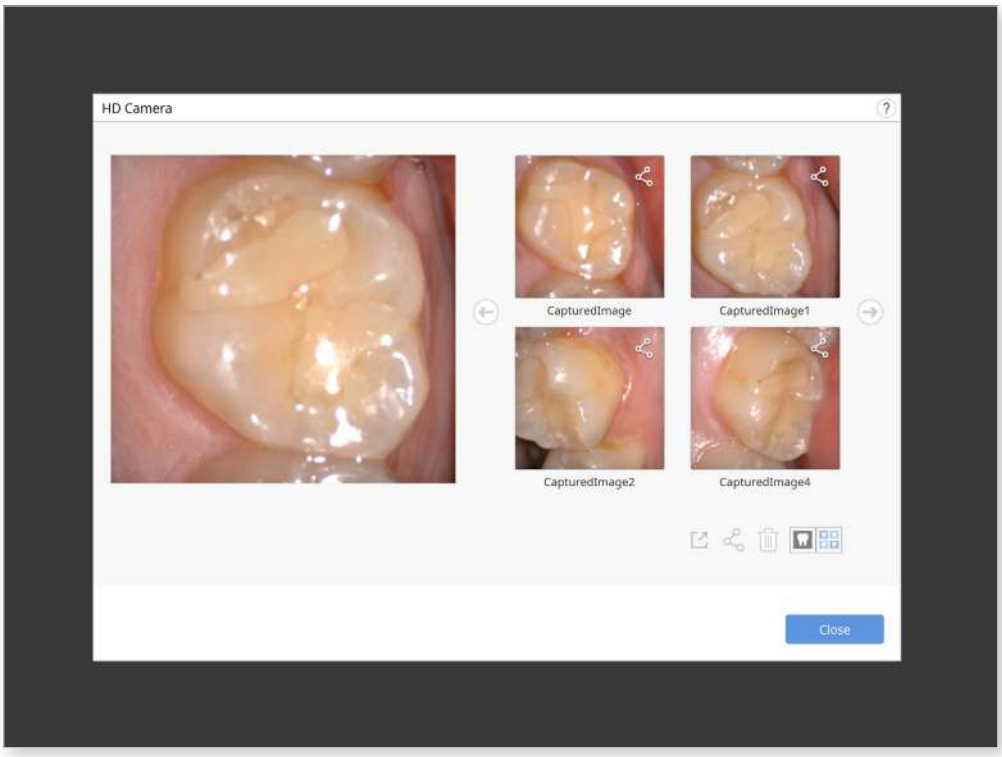


Toolbox

	Exports the selected files on to the computer.
	Allows user to select whether they want to share data or not.
	Deletes selected image.
	Moves to previous or next page.
	Changes the view style of a thumbnail.

How to Use

① Click “HD Camera.”

② Place the tip inside the patient’s mouth.

③ Position the tip carefully according to the region of interest and press blue button on the scanner.

④ The 2D image will be saved in the gallery.

How to Change the Status of Sharing

① Select the image to share (or to stop sharing).

② Click on the  button.

③ The sharing status of the selected image will be changed.

How to Change the Name of an Image

① Select the image.

② Click anywhere on the selected image.

③ Enter the new name for the image.

How to Export Selected Images

① Take pictures with the scanner.

② Select the images to export and click “Export.”

③ Select folder to save the files to.

Register Abutments

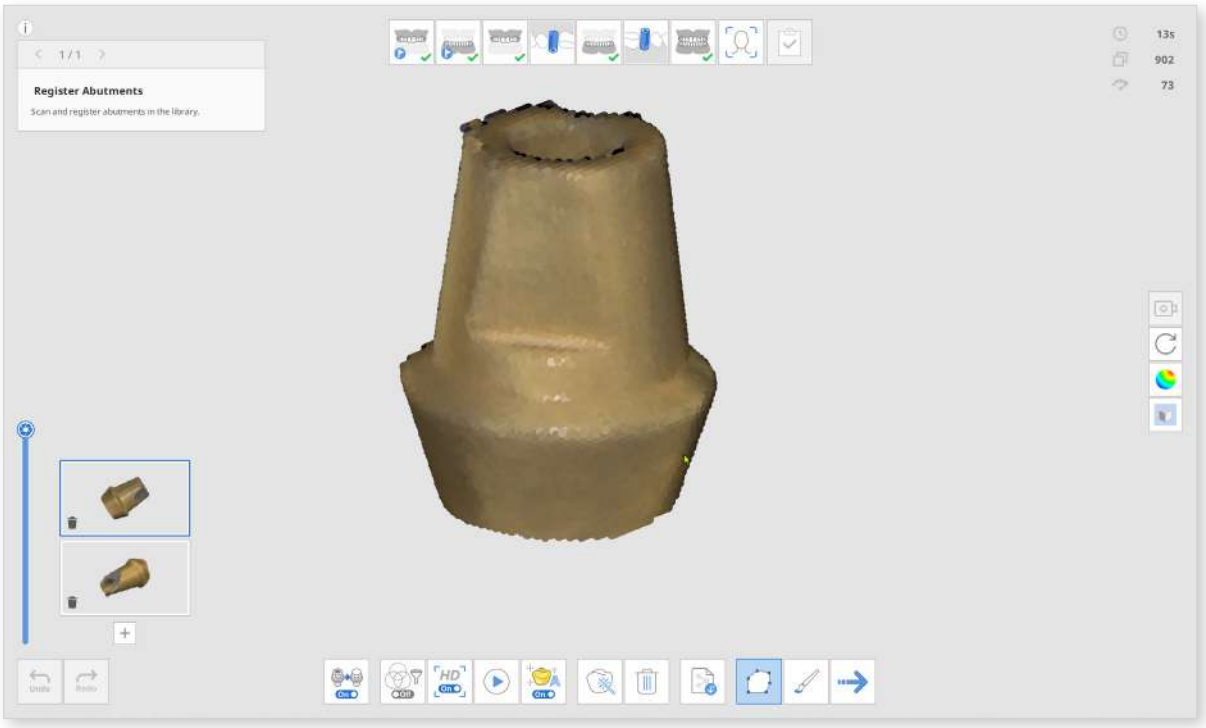
	Register an abutment in the library by scanning it yourself or importing it. Once registered, use it for A.I. Abutment Matching.

First, register the abutment library to use the “A.I. Abutment Matching” feature.

Previously, you had to receive custom abutment files created by tabletop scanners in labs or even make unnecessary cases in Medit Clinics to scan the abutment and create 3D data, making it difficult to get proper use out of “A.I. Abutment Matching.”

“Register Abutments” is a convenient function that allows you to scan the patient’s abutment directly in their case and register it as a library. Before the implanted fixture is placed in the patient’s mouth, scan the abutment first and register it as a library. Then, use the “A.I. Abutment Matching” to replace the scan data with the library data.

You can register up to 6 abutments and you will be provided with the best option to scan and merge the abutments.



Toolbox

	Add	Add abutments . You can add via scanning or importing.
	Fill Holes for Abutments On/Off	Turn the toggle on and off to fill holes for abutments while merging.
	Merge Abutments	Merge scanned or imported abutments.
	Fill Hole From Your Viewpoint	Fill the abutment’s hole from the direction you are looking at.
	Reset Abutment	Reset to undo any changes made to the abutment.
	Register in Library	Register the merged abutment in the library. It will be used only for that specific case if you check the box.

Smart Shade Guide

The Smart Shade Guide will recommend the closest shade using data analysis. Click on a tooth area of the scan data to receive A.I. powered shade recommendations. You will receive three recommendations and the shade with a star represents the shade with the highest accuracy. You can also select a different shade that is not part of the recommendations. When you place the mouse on top of the scan data, the shape of the mouse cursor will change if the area is eligible for shade recommendations.

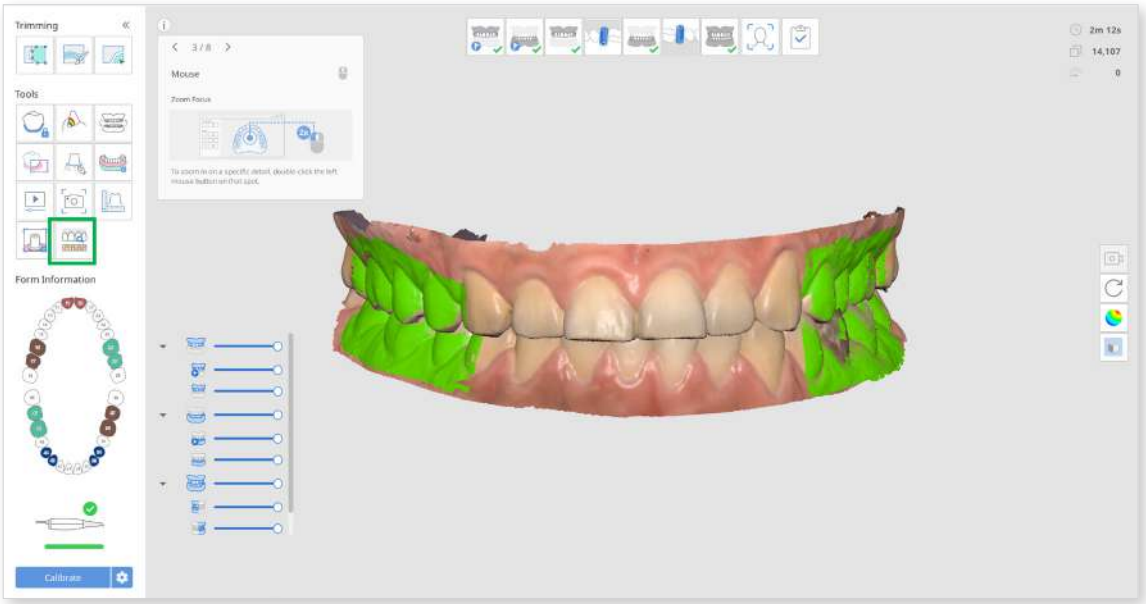
*Unavailable with data gathered using i500

We support the following shade guides:

- VITA Classical
- VITA 3D-Master Shade Guide

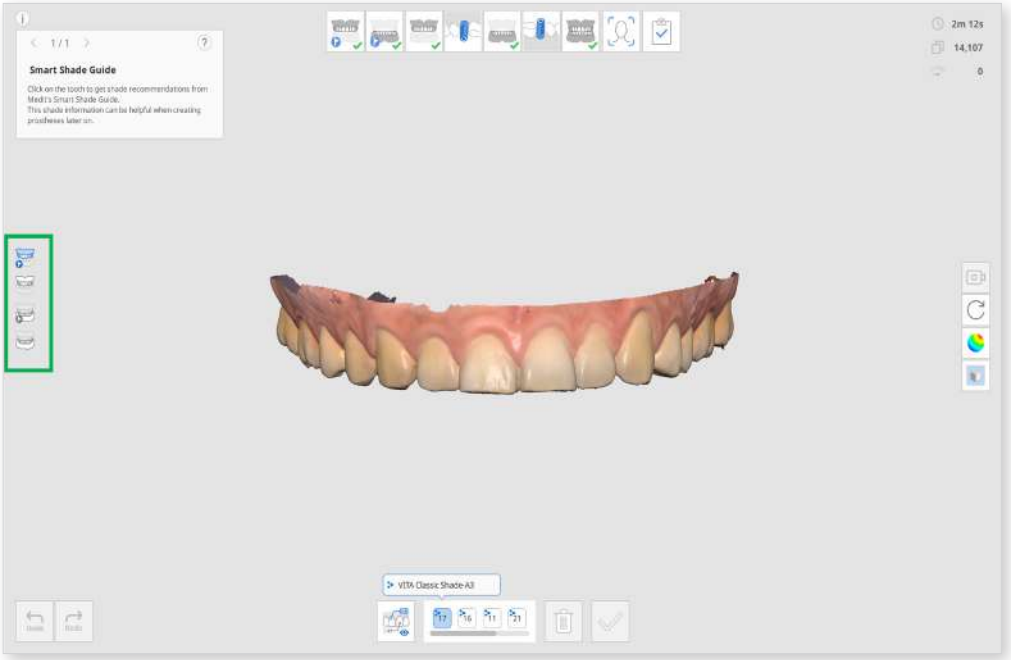
How to Use the Smart Shade Guide

① After you've collected the scan data, click on the "Smart Shade Guide" icon located on the left side in your Toolbox.

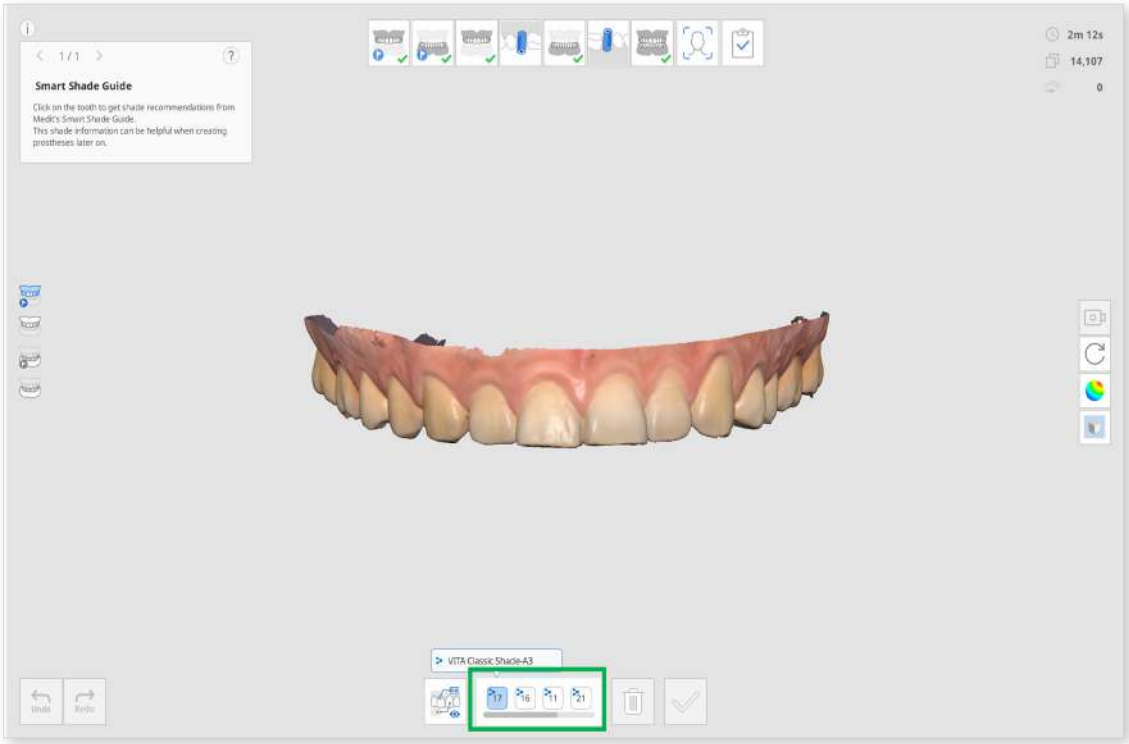


② The steps for shade measurement as follows. Click on the scan step icon on the left side of the screen to select the area for which you want to receive measurements.

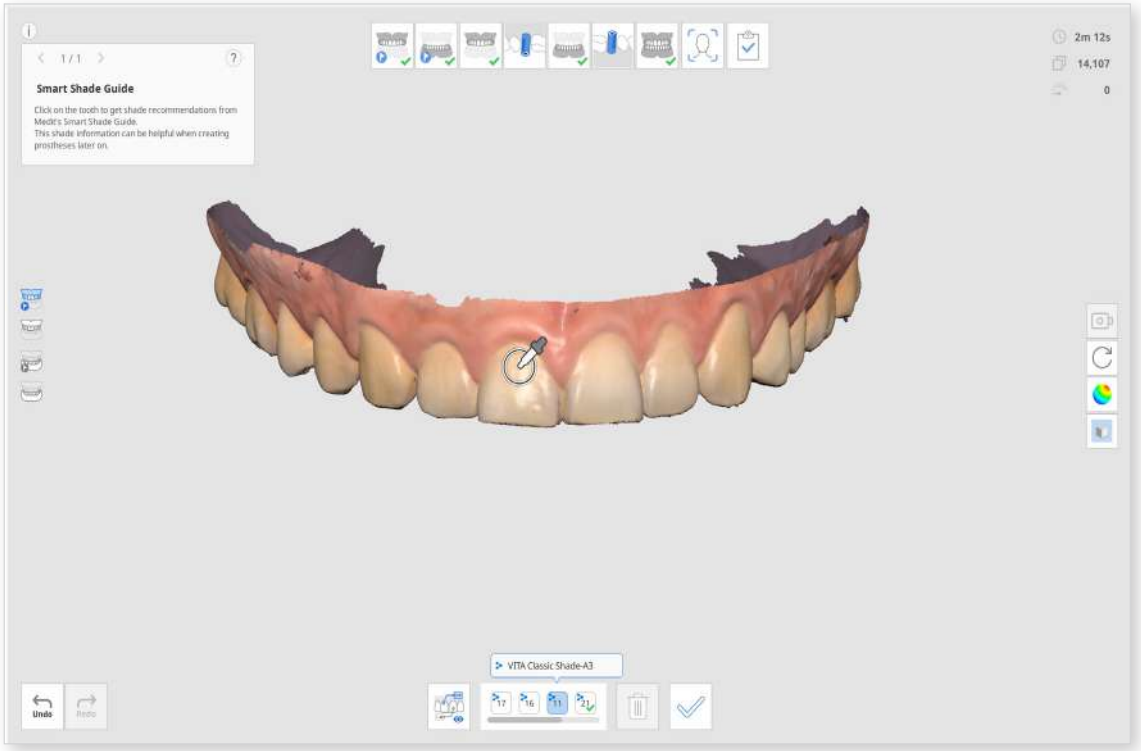
- Maxillary Diagnostic Model
- Mandibular Diagnostic Model
- Maxilla
- Mandible

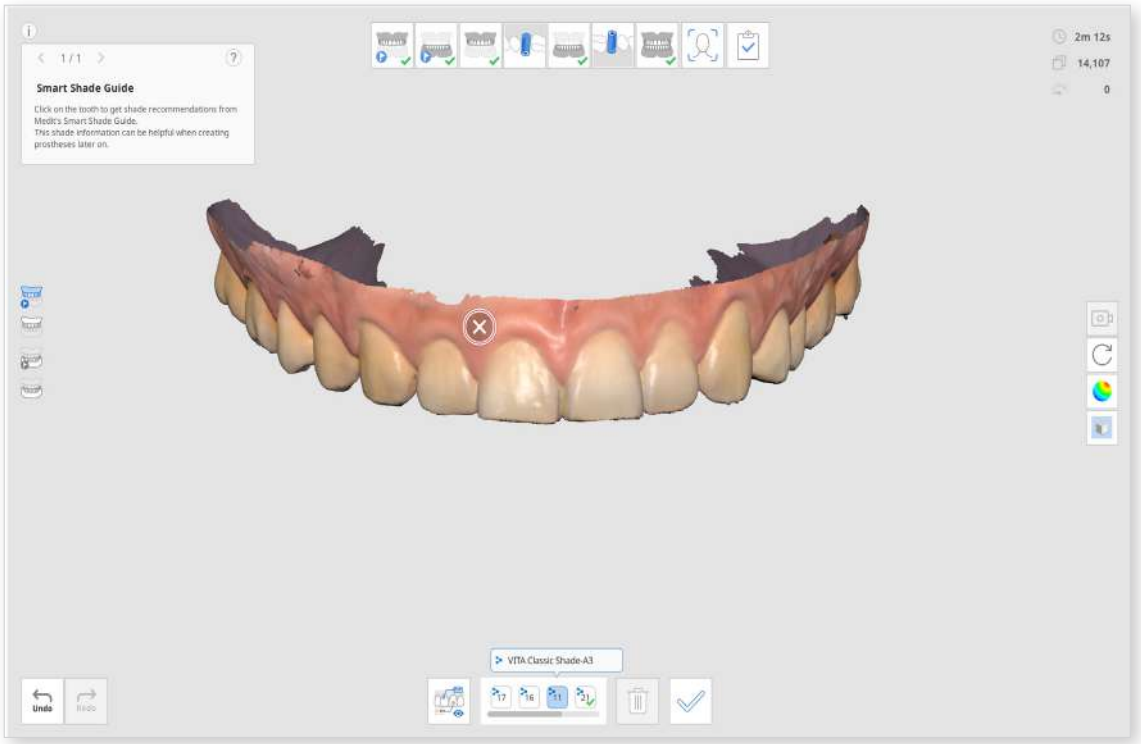


③ Select the tooth number from the list of tooth numbers at the bottom. Clicking on the tooth number will display the shade information registered in Medit Link.

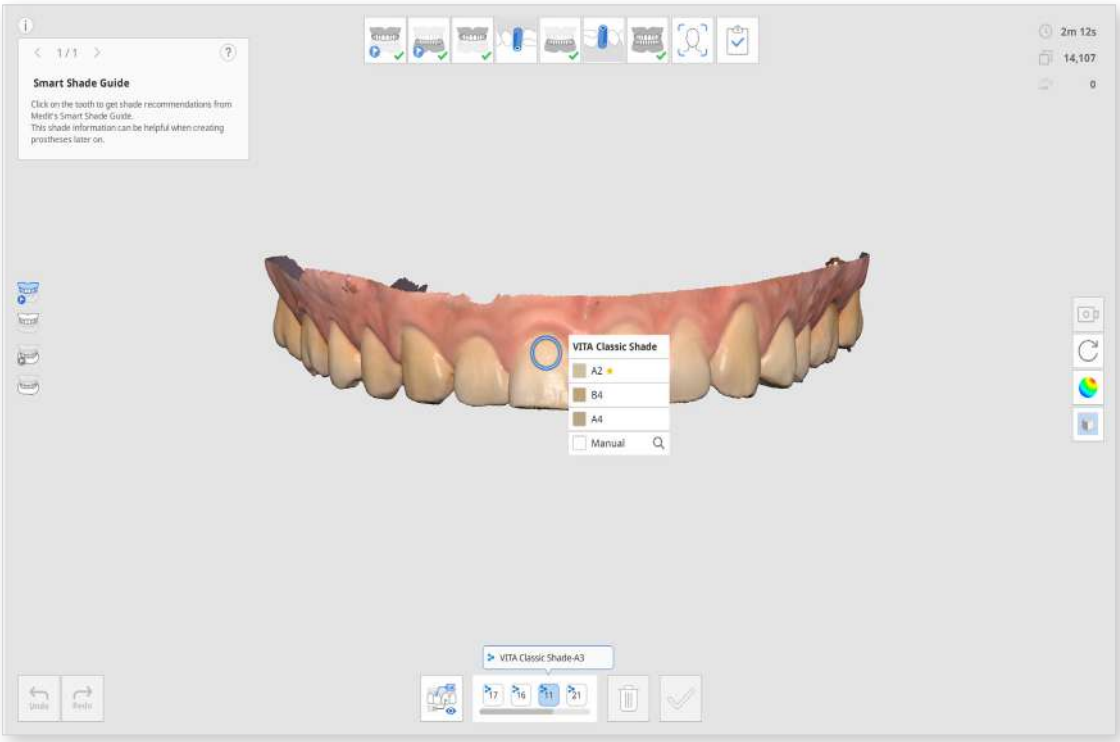


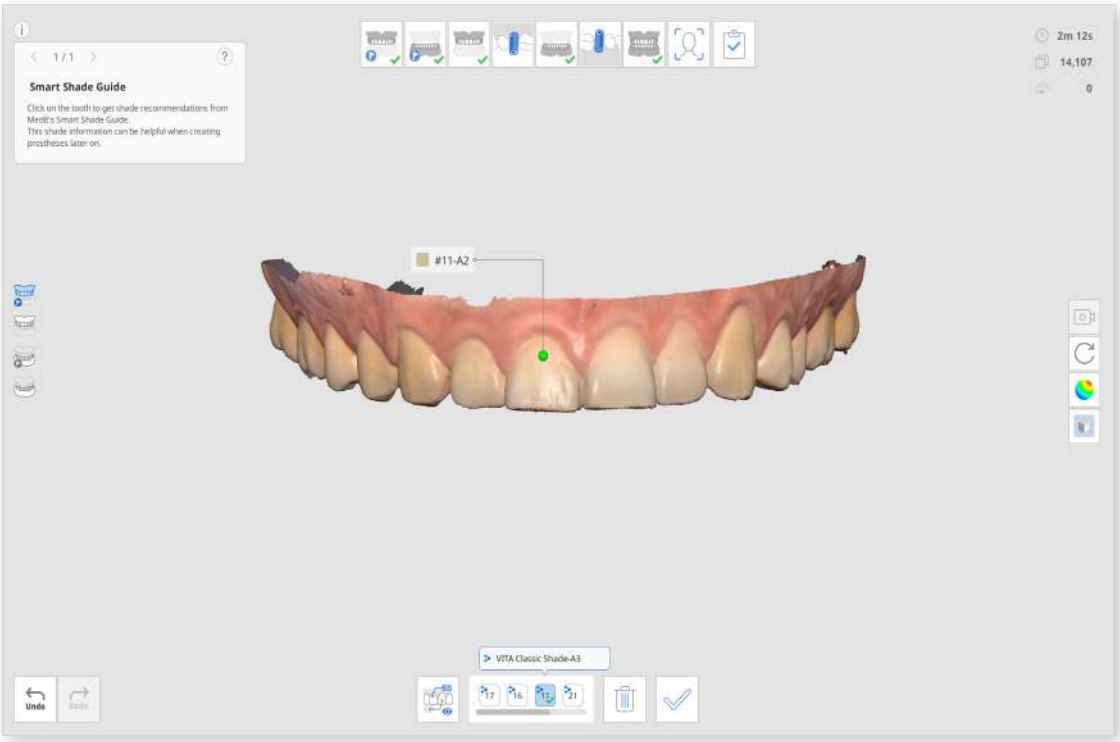
④ Placing the cursor on teeth areas you can receive shade recommendations for will change its icon. If the area is ineligible for shade recommendations (such as gingiva), the icon will not change.



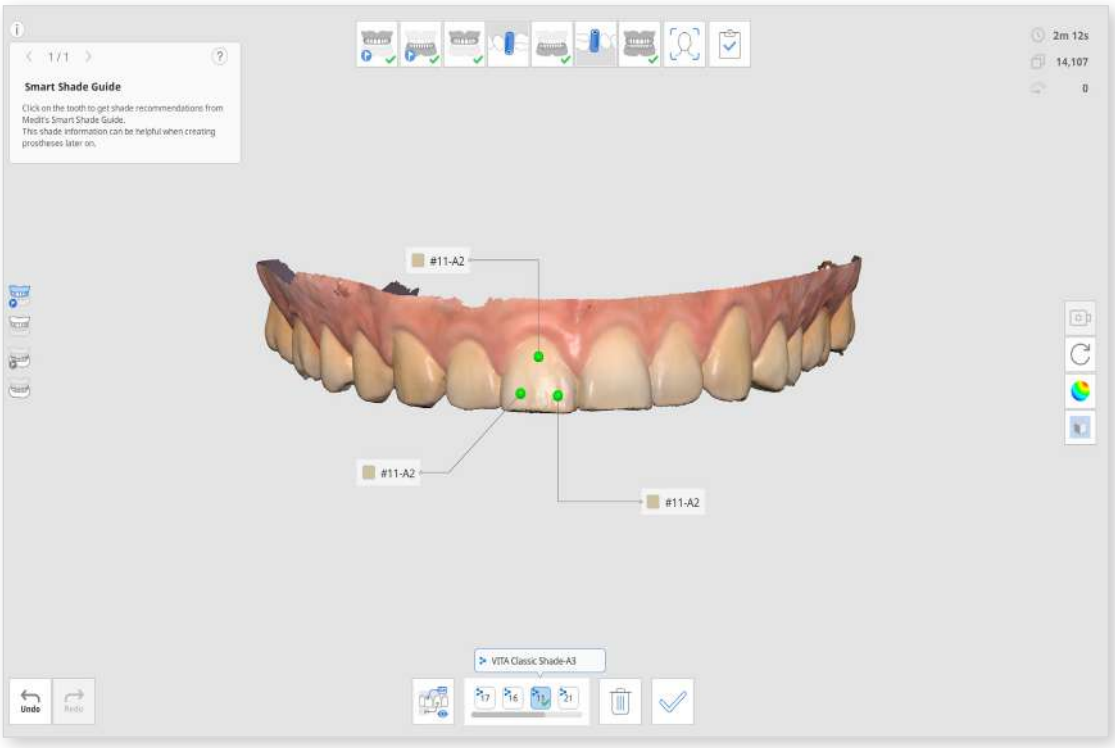


⑤ Left-click on the tooth area to receive shade recommendations. The star icon indicates the closest matching shade. Complete this step by clicking on your desired shade.

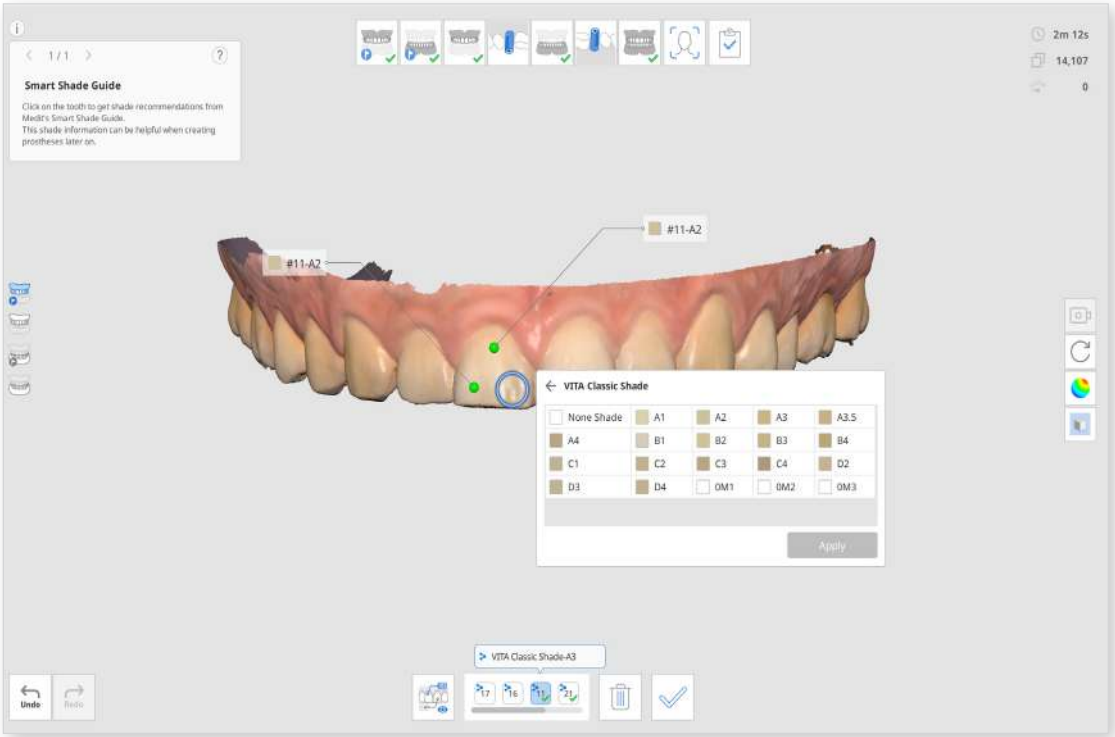




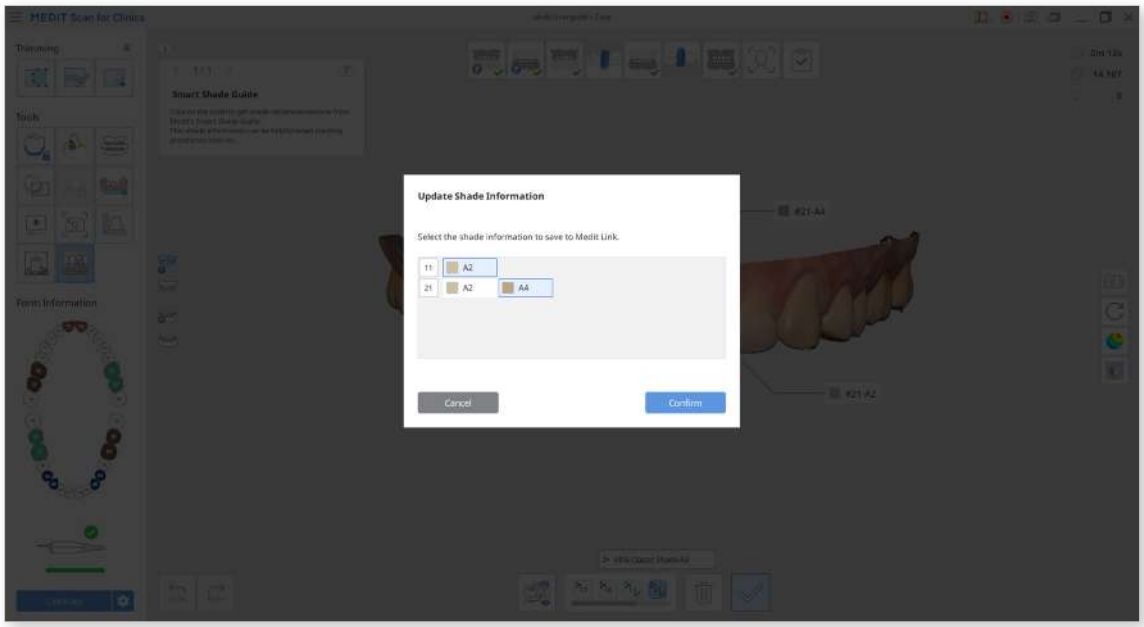
⑥ You can save up to five shades per tooth.



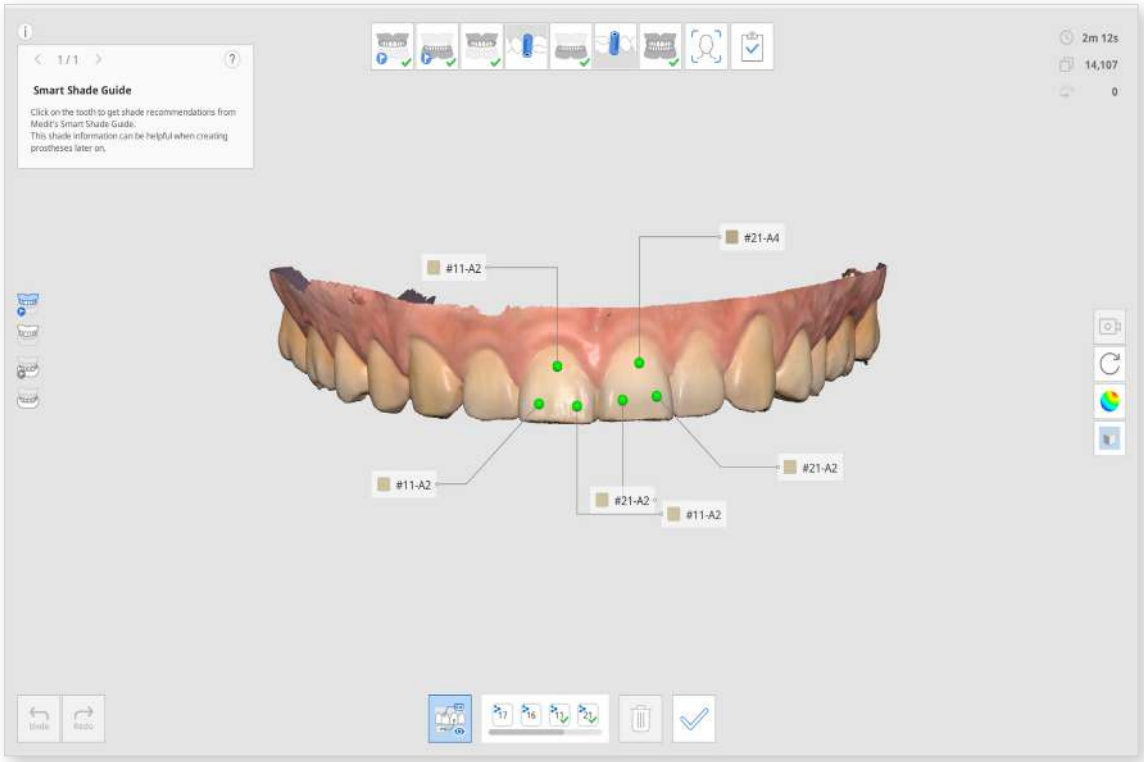
⑦ If you want to designate a shade other than the recommendation, you can check the list by clicking the manual selection button. Select the shade and click “Confirm Shade.”



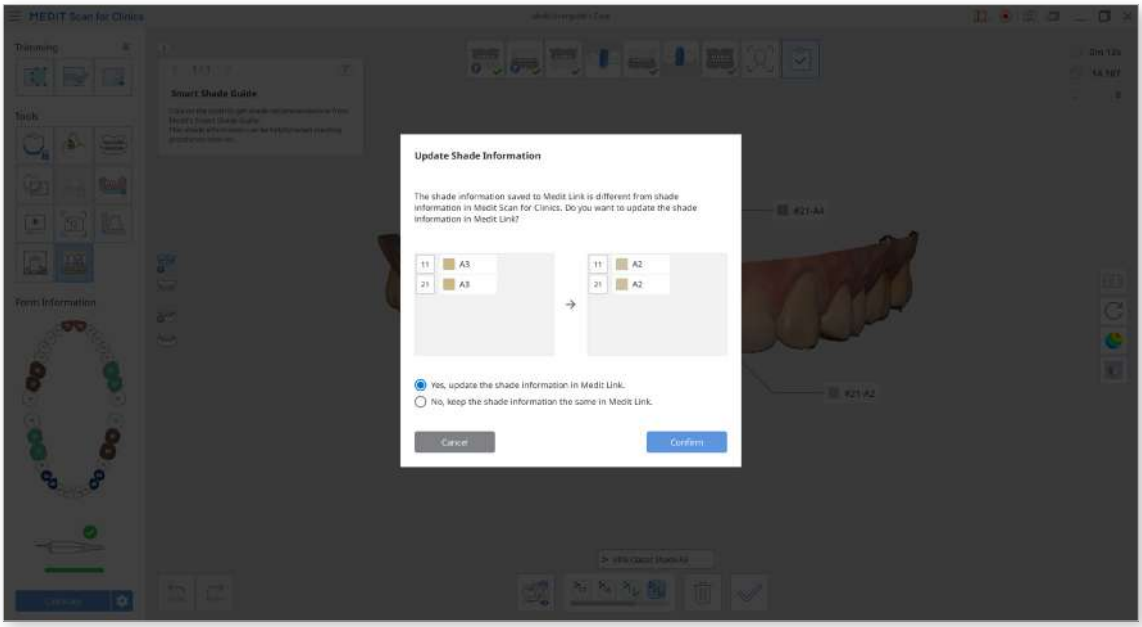
⑧ Click “Update Shade Information” to select the shade information to save to Medit Link. A dialogue window will pop up so you can select the representative shade that will be saved to Medit Link.



⑨ Click “View All” to display all shade information.



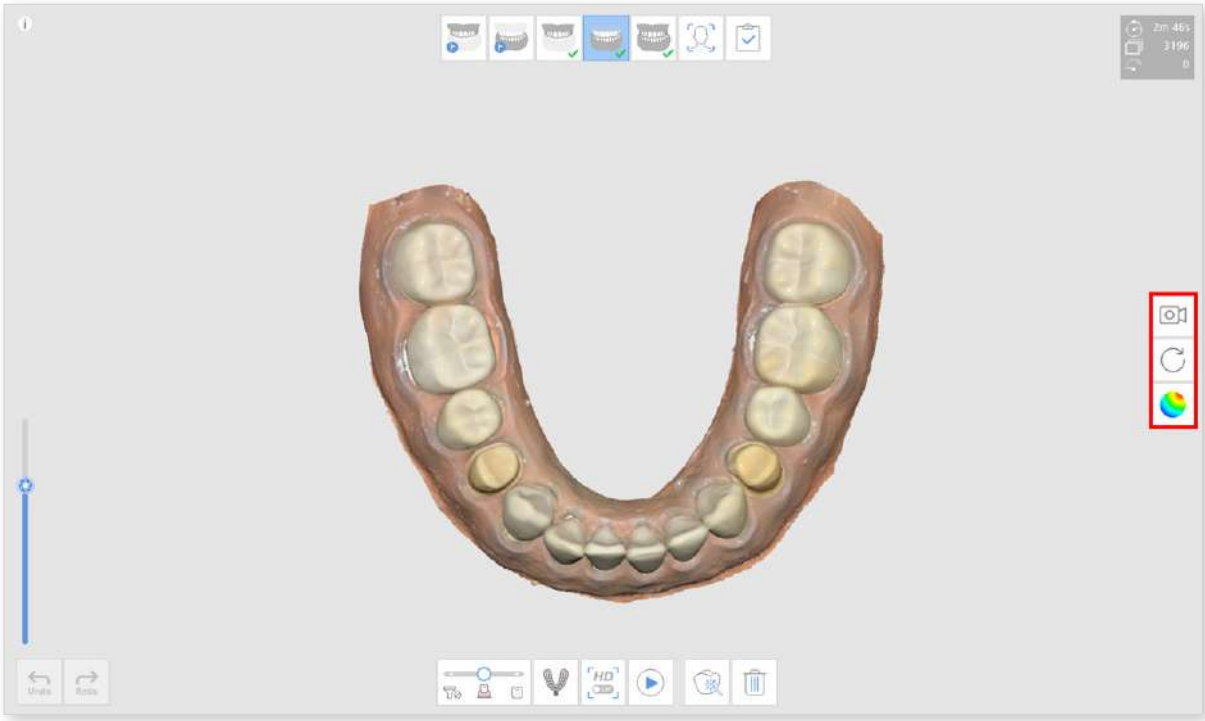
⑩ When completed, the Smart Shade Guide will ask you to select how you'd like to update the form information in Medit Link.



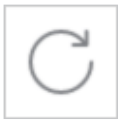
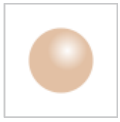
Side Toolbar

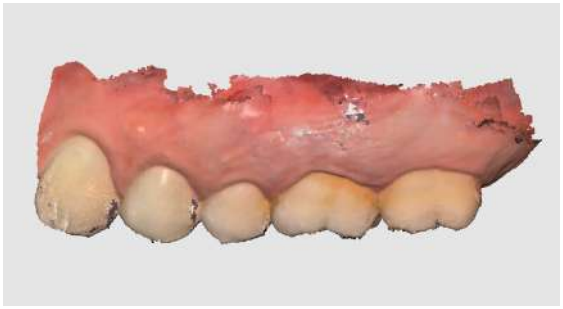
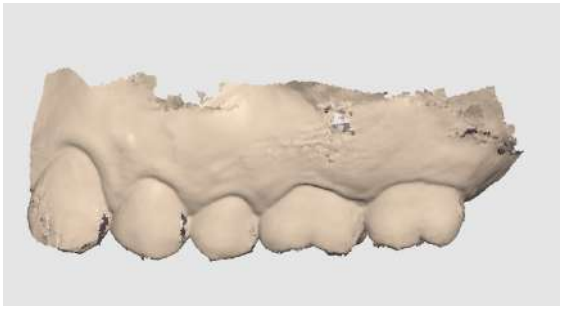
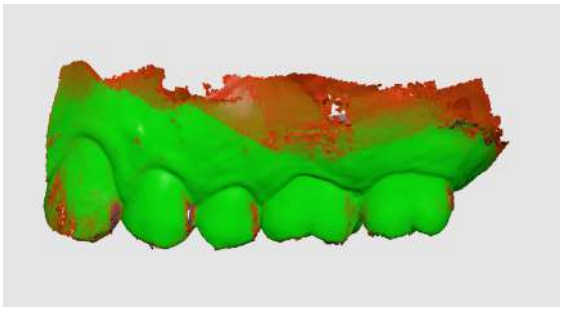
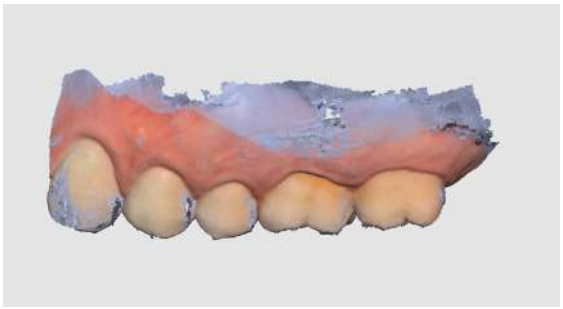
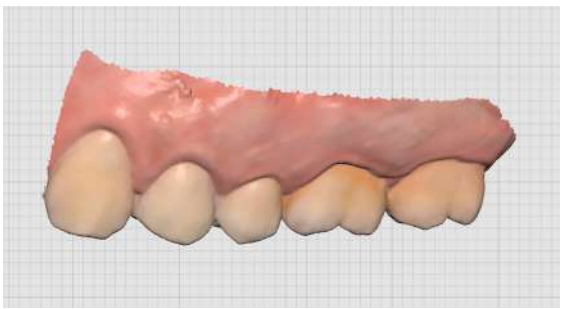
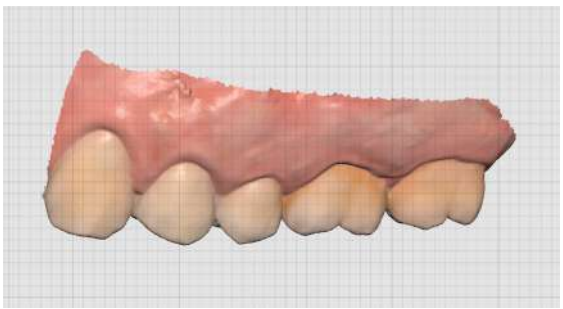
The Side Toolbar provides tools to control the 3D model in the Model View screen and to change scan depth.

3D Model Control Tools



Toolbox

	Camera View Mode	Changes the camera view mode. Choose between Dynamic View or Fixed View.
	Rotate	Rotates the model.
	Pan	Moves the model. Enable moving the model by going to Menu > Settings > Expand Model Control Icons.
	Zoom In/Zoom Out	Zooms in or out on the model. Enable moving the model by going to Menu > Settings > Expand Model Control Icons.
	Zoom Fit	Positions the model in the center of the screen. Enable moving the model by going to Menu > Settings > Expand Model Control Icons.
	Texture On	Displays the model with texture color.
	Texture Off	Displays the model without texture color.
	Reliability Map	Shows the trend of reliability of scan data in green, yellow, or red. Green shows the reliable area. Red shows the unreliable area. Reduce the unreliable area by additional scanning.
	Texture On + Reliability Map	Assists in acquiring better results by allowing reference to the reliability map while also scanning with the texture on.
	Grid Off	Hides the grid on the background.
	Grid On	Shows the grid on the background.
	Grid Overlay	Overlays grid over the model.

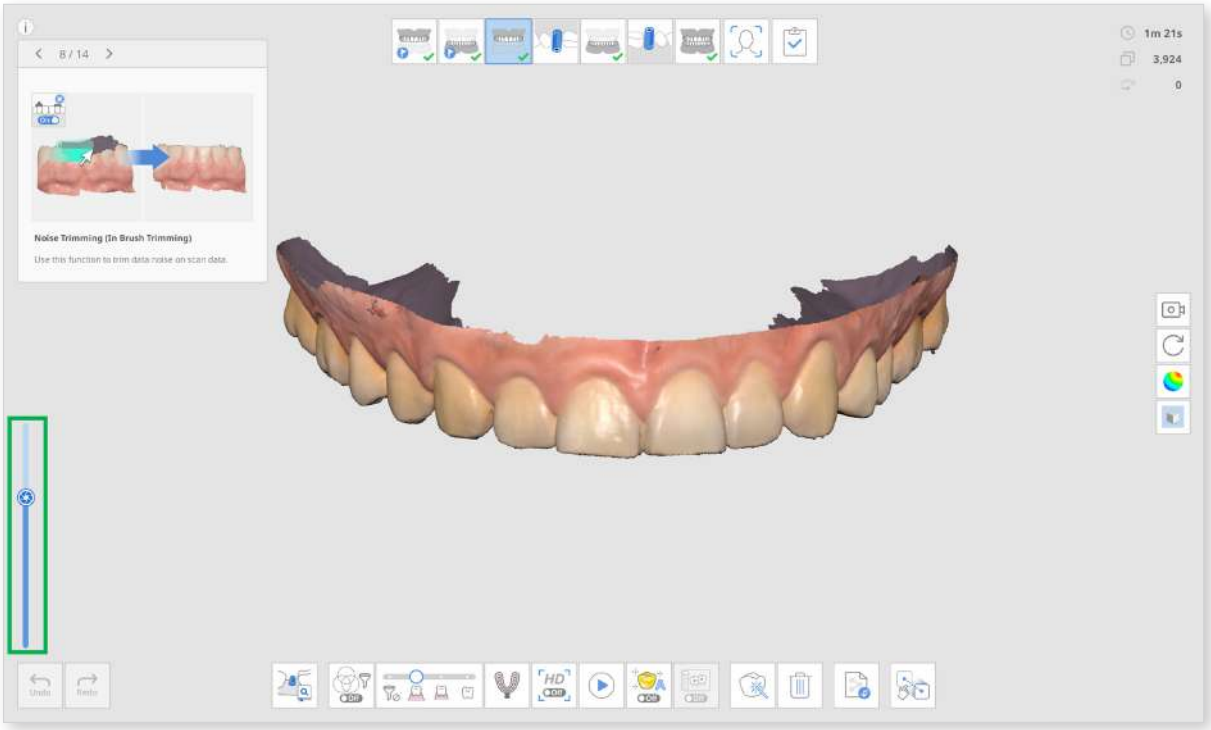
Model Control Icons (Enabled)	Model Control Icons (Disabled)
	
Texture On	**Texture Off**
	
Reliability Map	**Texture On + Reliability Map**
	
Grid On	**Grid Overlay**
	

How to Change the Scan Depth

The scan depth can be adjusted as follows according to the scanner type:

- i500: 12(mm)-21(mm)
- i600, i700, i700 wireless: 12(mm)-23(mm)

In general, deeper scan depths are more useful. However, less scan depth is more useful to filter data which is far away from the tip end.



Scan Information

	Scan Time	Shows scan time during scanning.
	Number of Frames	Shows the number of images taken during scanning.
	Scan Speed	Shows the current scan speed.

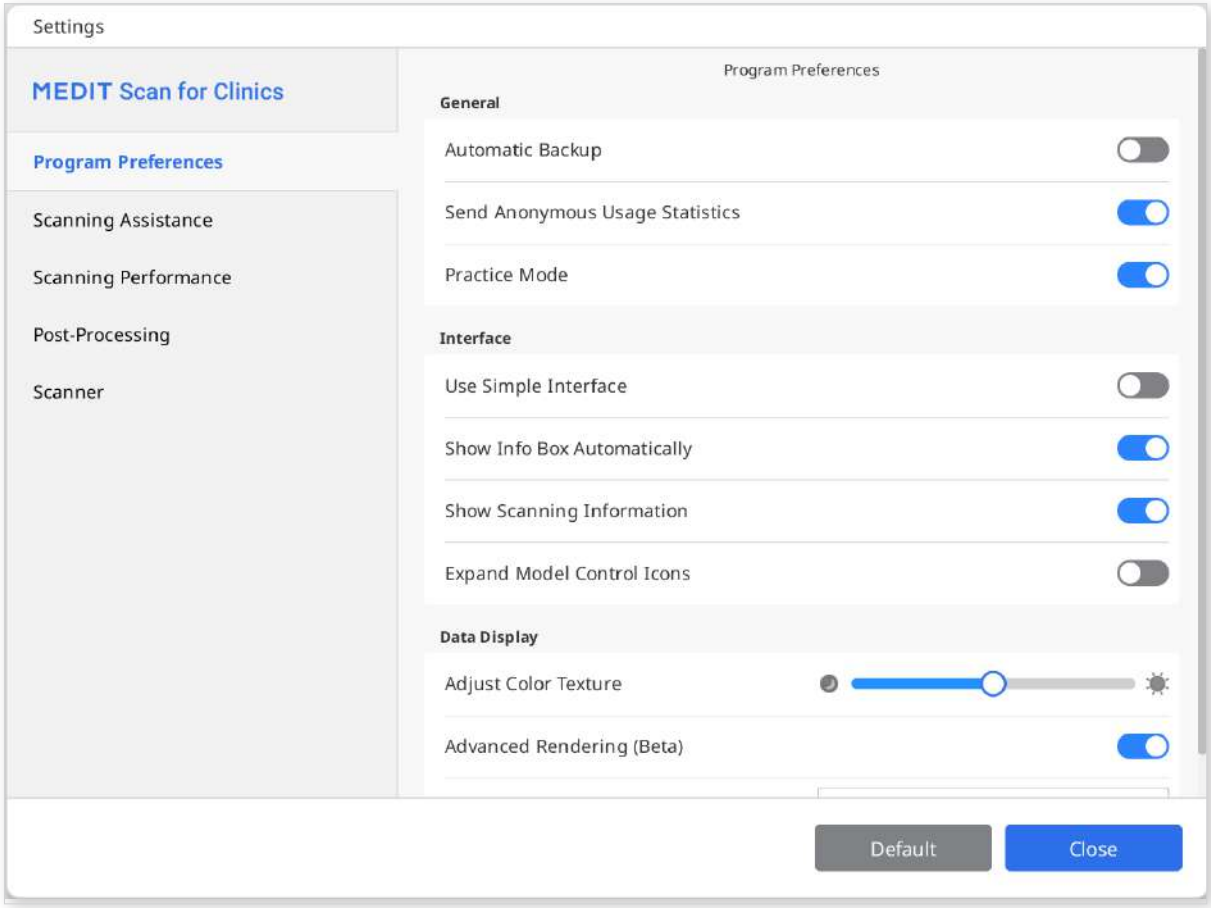
Useful Information and Examples

Simple Interface

Medit Scan for Clinic acquires scan data with intra-oral scanners and provides various features to utilize the acquired data. The program provides basic functions to lock or edit acquired scan data and features to help users work through complex processes such as simulating insertion paths through undercut analysis, automatic abutment alignment, and automatic scan body alignment.

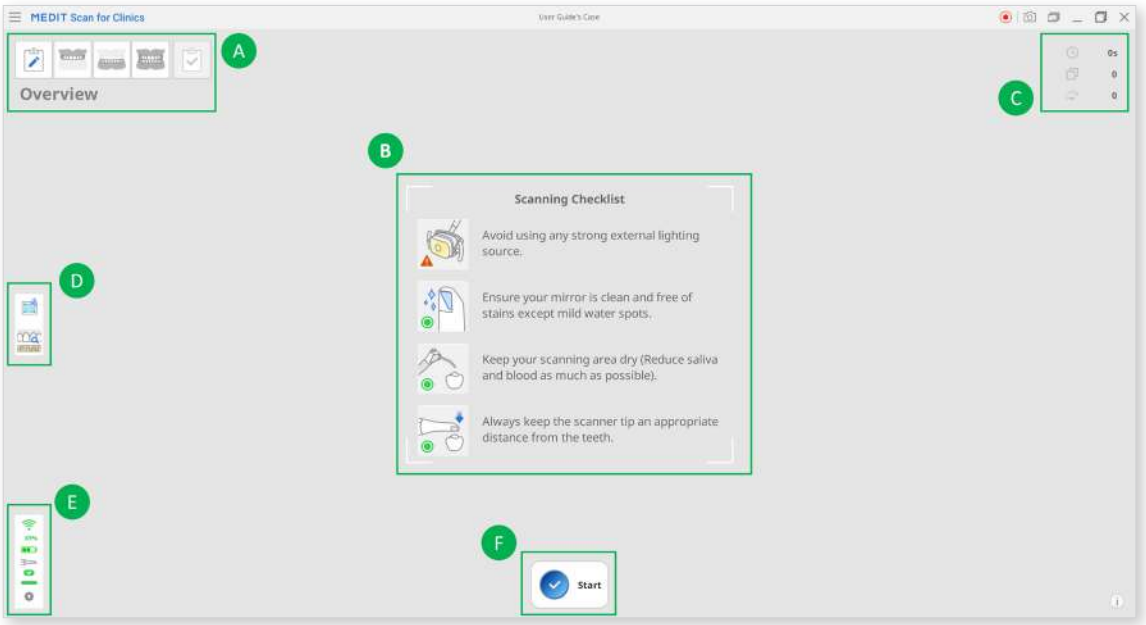
However, the program is still too complicated for novice users with little previous knowledge or experience to utilize these various functions. We also have users who only want to obtain the maxillary, mandibular and occlusal data for manufacturing orthodontic devices. Therefore, we added the Simple Interface that provides only essential functions for acquiring and editing scan data.

You can switch interface mode between Default Interface and Simple Interface on the Settings. Simple Interface provides only basic features, and utilization of certain stages and types of data that we support for Default Interface can be limited.



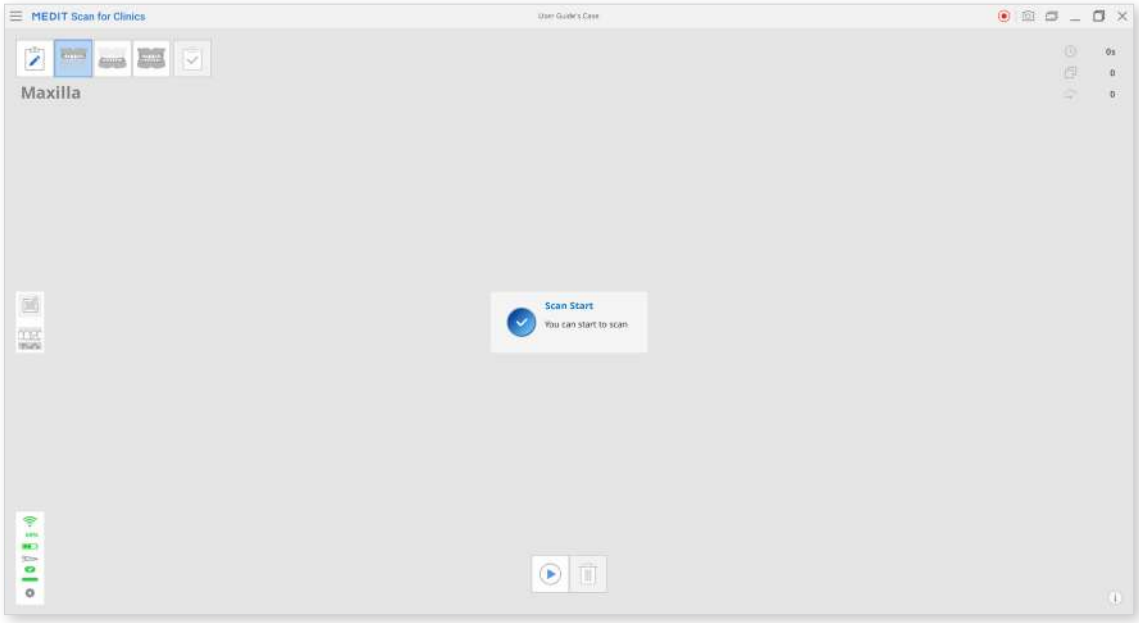
Simple Interface – How-To Guide

① The following Overview appears when you run the program with Simple Interface mode enabled.



A. Scan Stages
B. Scanning Checklist
C. Scan Information
D. Main Toolbar
E. Scanner Status
F. Start Button

② Click the Start button to enter the first step to acquire scan data.



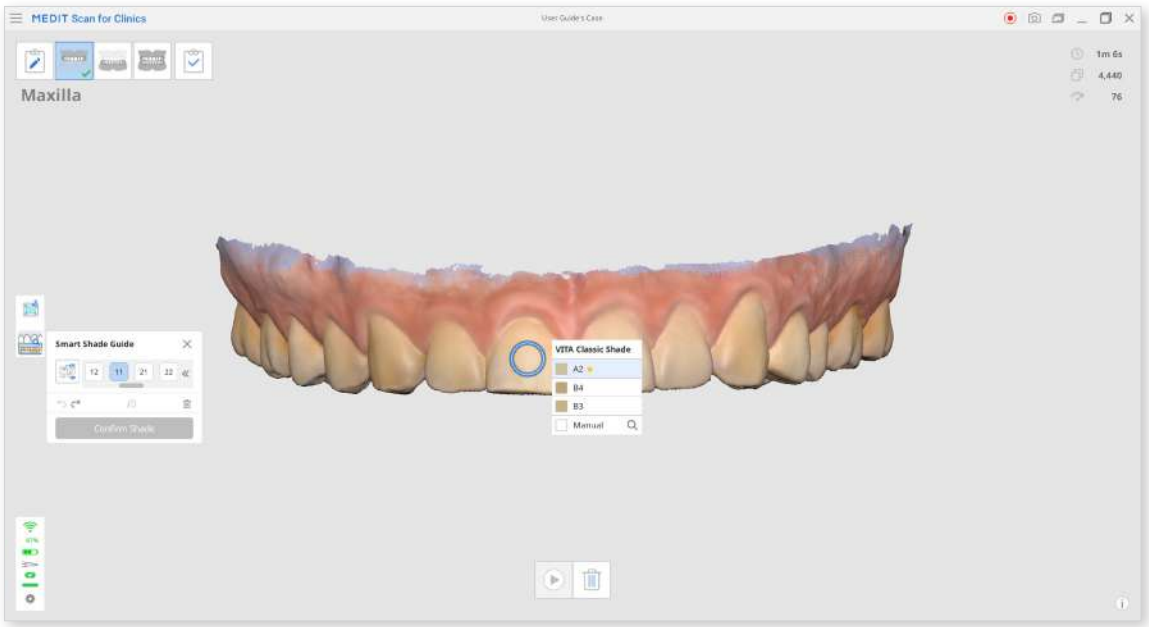
③ After data acquisition, only icons required for the current stage appear on the left side of the screen.

- Trimming Tools
- Smart Shade Guide

④ The following trimming tools are provided as a tool group to edit and remove noise from the data.

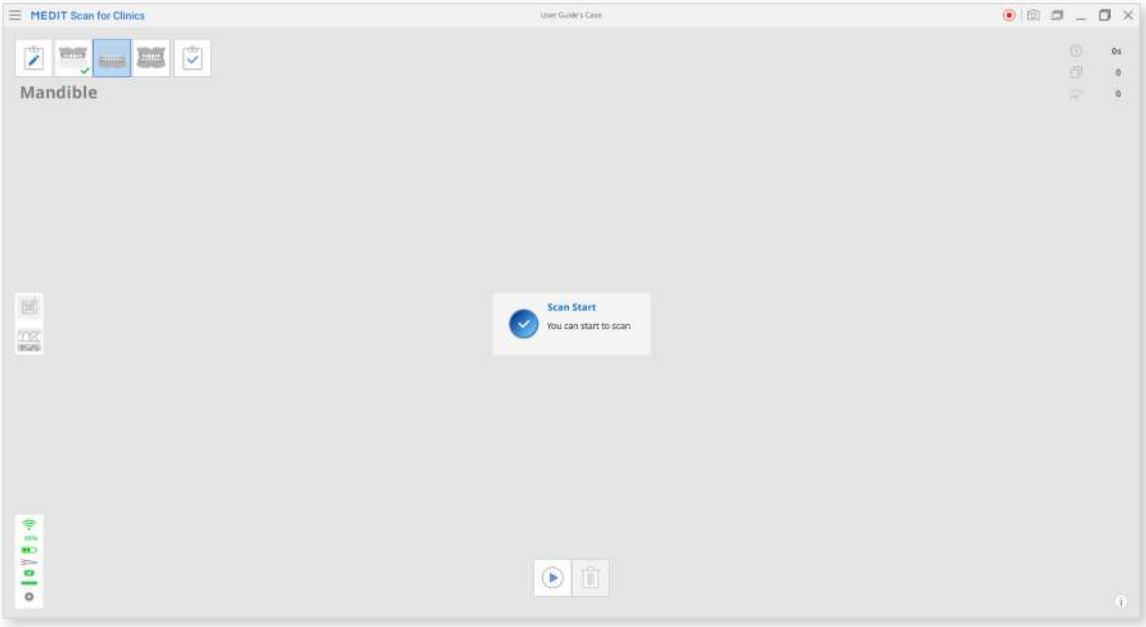
- Polyline Trimming
- Brush Trimming
- Quick Trimming

⑤ You can get shade recommendations by using the Smart Shade Guide tool.

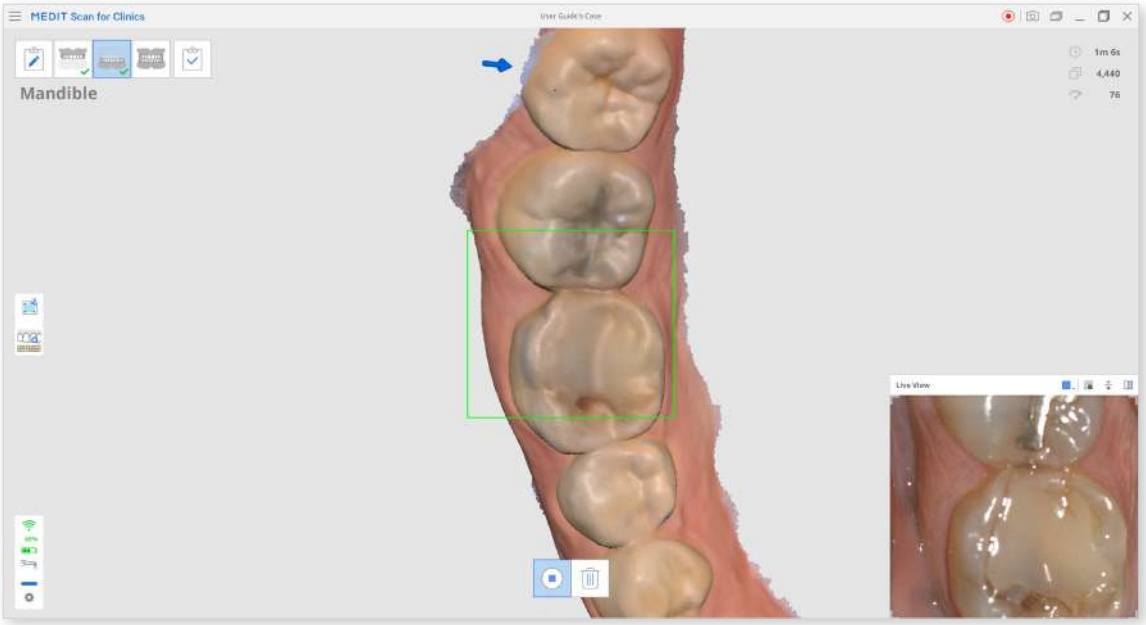


⑥ The Next button appears when you acquire enough scan data for the Maxilla. You can conduct additional scanning if needed.

⑦ Click Next to move to the Mandible stage and acquire the mandibular scan data.

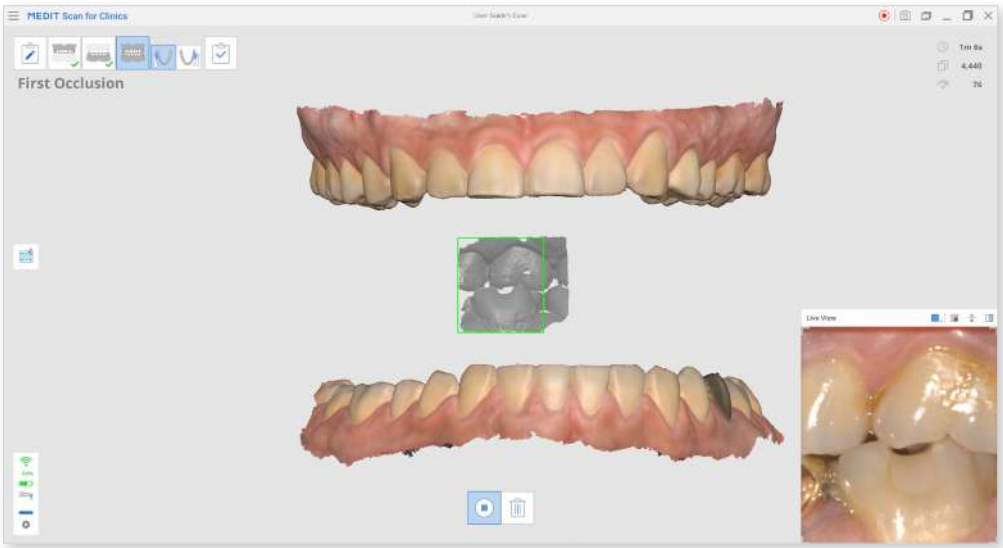


⑧ Acquire the mandibular scan data.

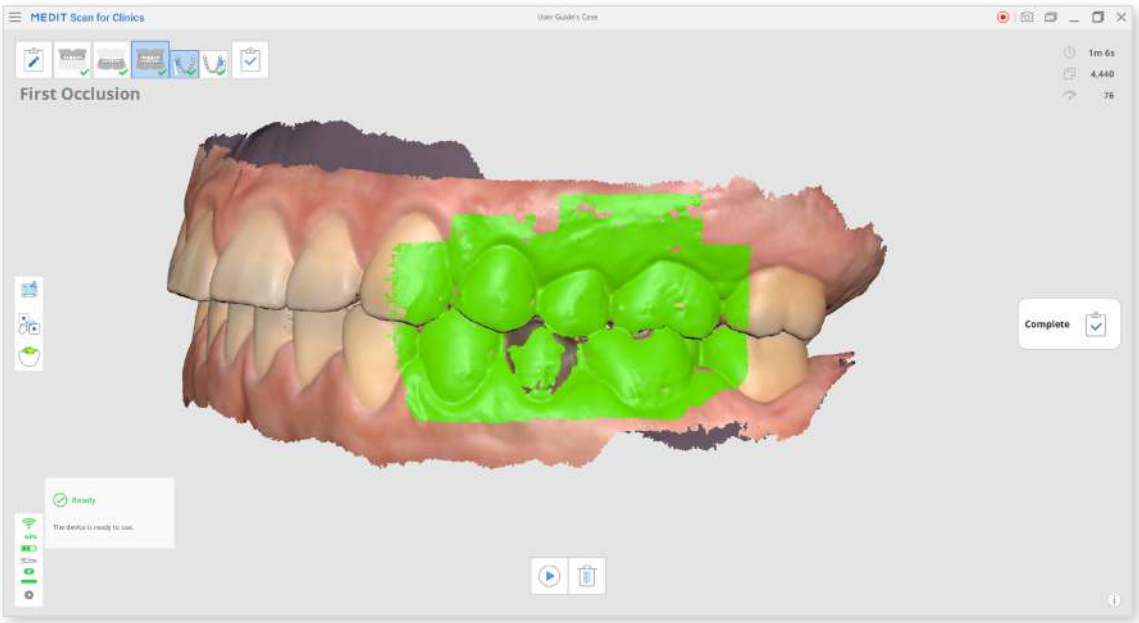


⑨ Click the Next button to move to the Occlusion stage.

⑩ When the data acquired in Maxilla and Mandible stage displays on the screen, acquire occlusion data for occlusal alignment.



⑪ The following image shows when both maxillary and mandibular data align with the first occlusion data. If you want to acquire the second occlusion data, click the second occlusion button next to the Occlusion icon on the top left corner of the screen.



⑫ The following image shows when the previous data above aligns with the second occlusion data.

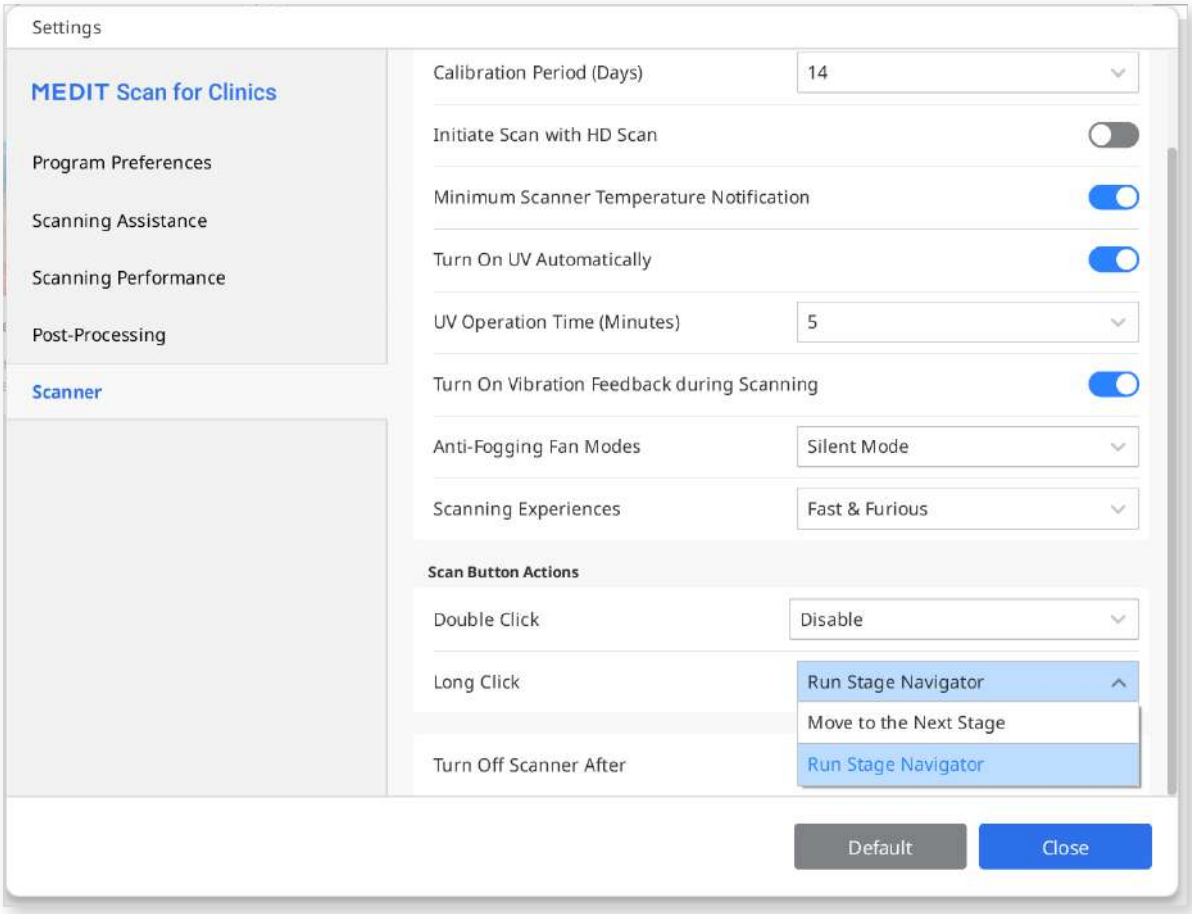
⑬ Click the Complete button on the right or the Complete icon on the top left after acquiring all data to process them.

Stage Navigator

*Unavailable with i500, i600

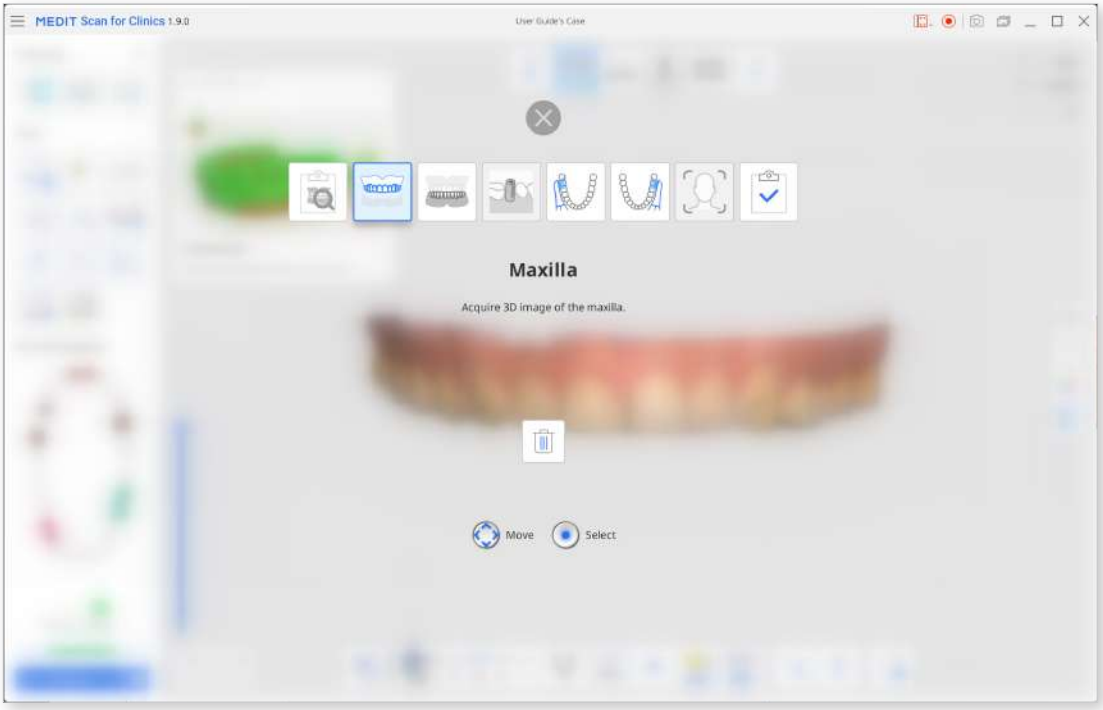
You could move to the next stage by long clicking the Scan button in previous versions. Medit Scan for Clinics now supports user-defined scan button operations.

Go to Settings > Scanner > Scan Button Actions > Long Click and select the Run Stage Navigator option.



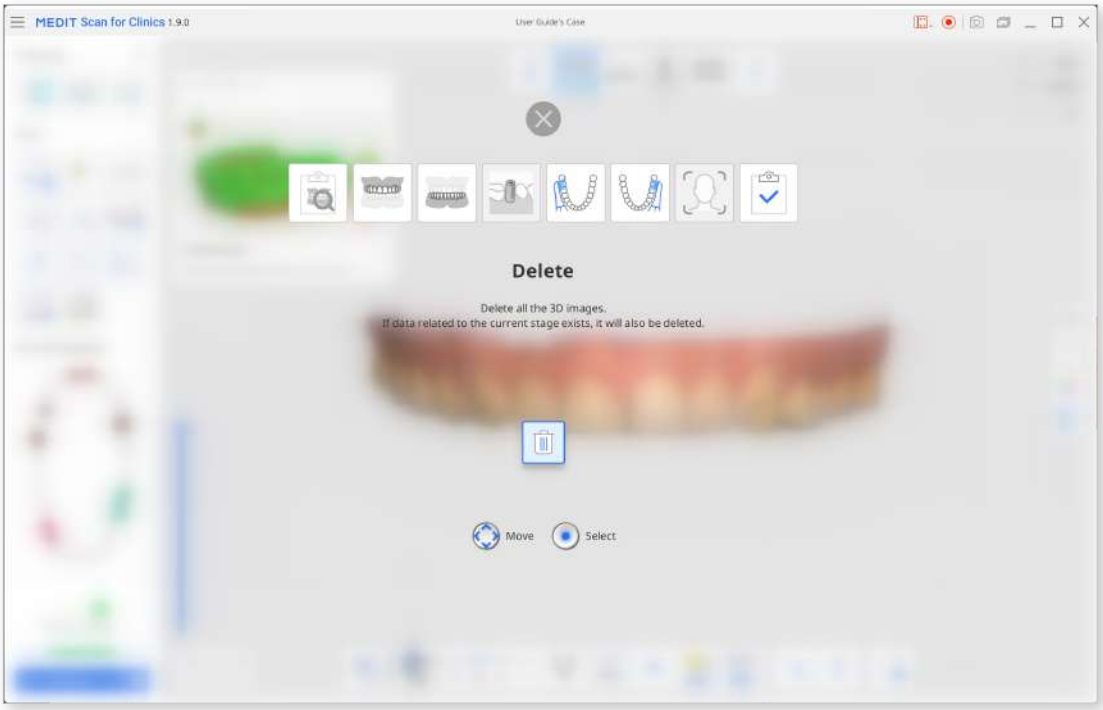
Stage Navigator – How-To Guide

① Long press the center of the Scan button on the scanner on the Overview or each scan stage to show the following pop-up.

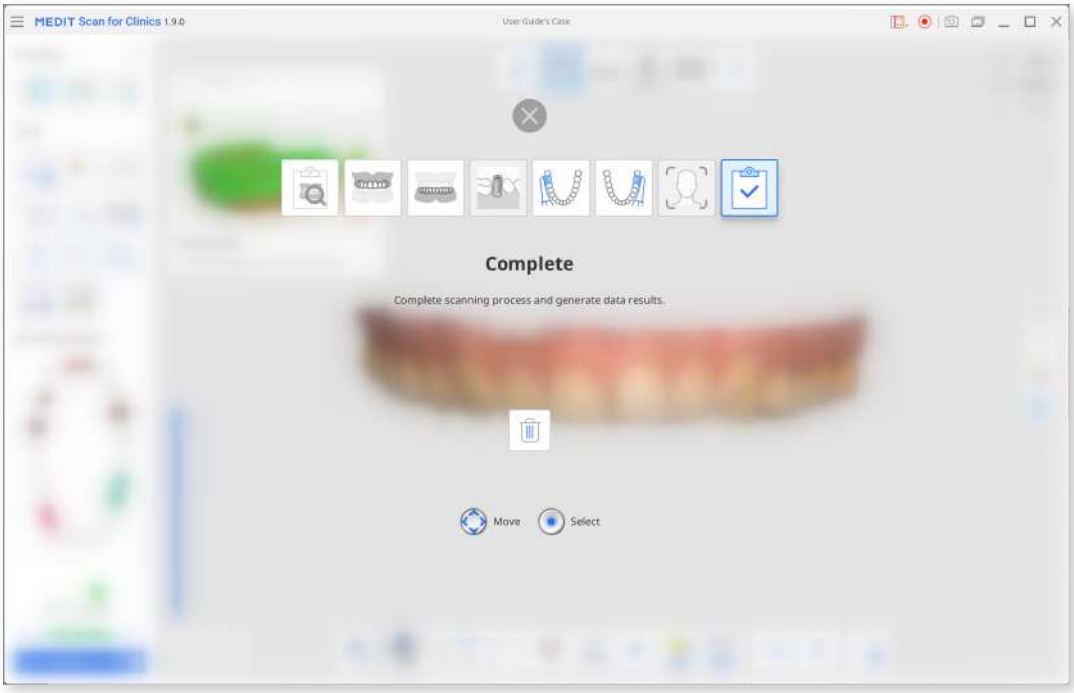


② Now you can easily select and enter the desired stage by clicking the left, right, up, and down direction buttons of the Scan button on the scanner.

③ You can delete the acquired data for the current stage.



④ After acquiring all scan data, you can go back to the Overview or conduct Complete.

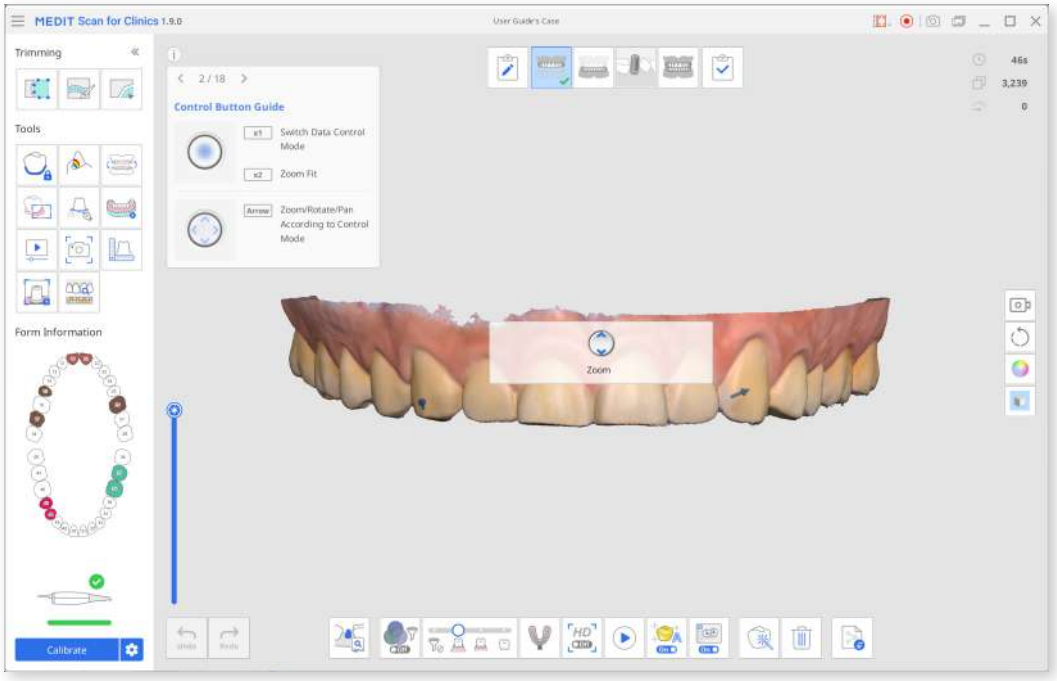


Data Control Mode

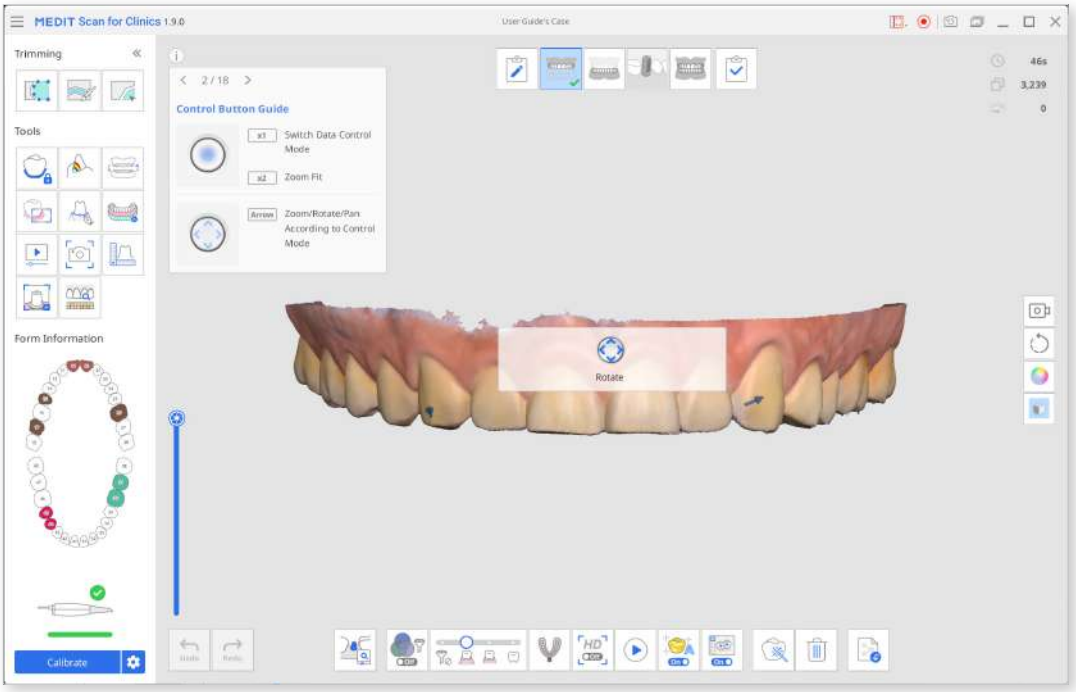
*Unavailable with i500, i600

We support three data control modes (Rotate, Pan, and Zoom). You can change the mode by clicking the center of the Control Button on your scanner.

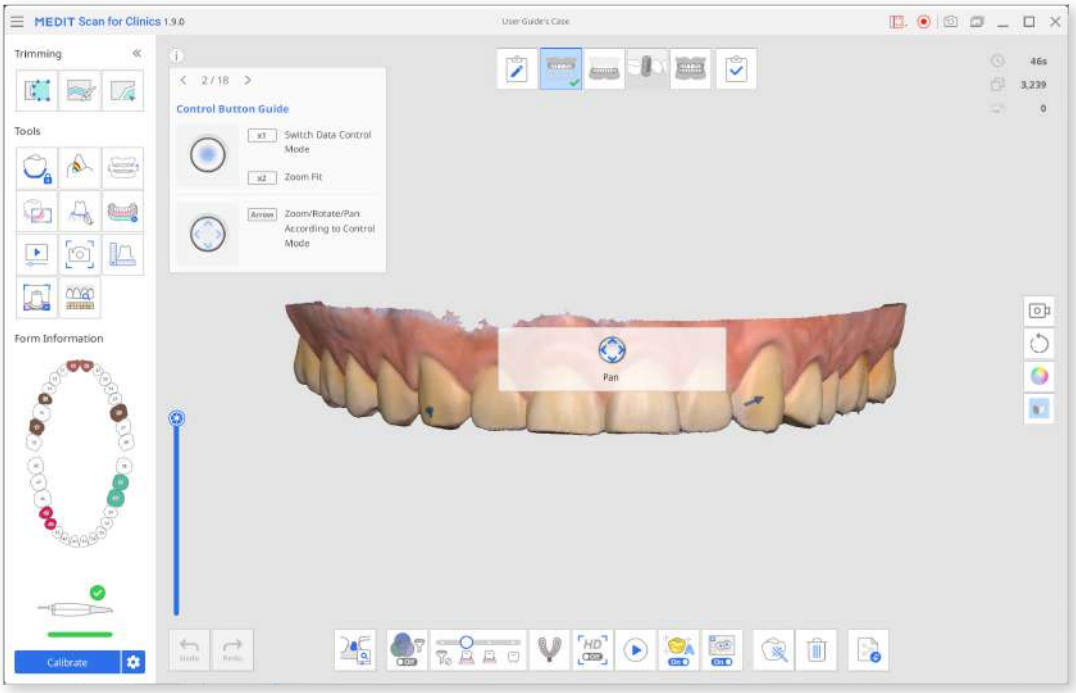
[Zoom]



[Rotate]



[Pan]



Double-clicking the Control button will align the data at the center of the screen (Zoom Fit).

Multi Occlusion

The “Multi Occlusion” function from the occlusion scan stage can reproduce various occlusion scan data and alignments.

Multiple occlusion patterns can be acquired in patients with large or irregular tooth movements. Various occlusions can be created and managed in the case, such as centric occlusion for the edentulous patient, open bite for production of a mouthpiece, protrusive occlusion for production of snoring prevention appliance, and centric occlusion for patient clinics.

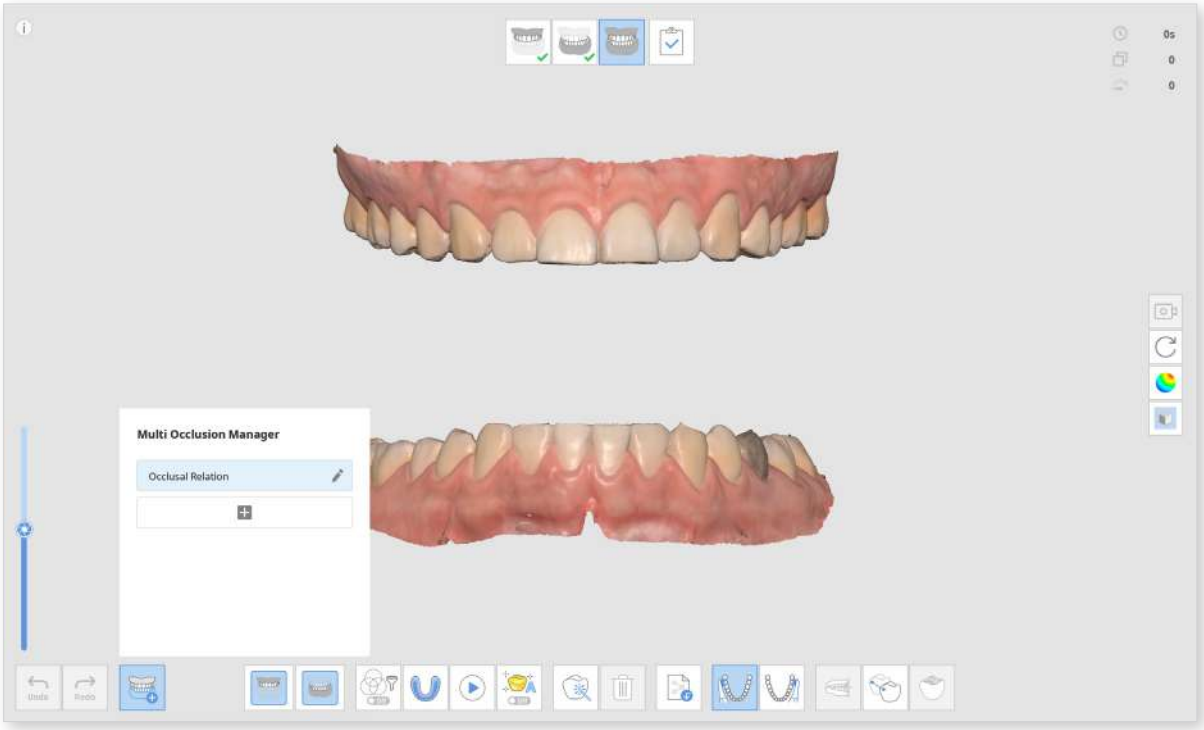
Since scan data of the same maxilla and mandible is reproduced according to alignment of each occlusion group, this function is not available if scan data of different maxilla and mandible is required.

Multi Occlusion – How-To Guide

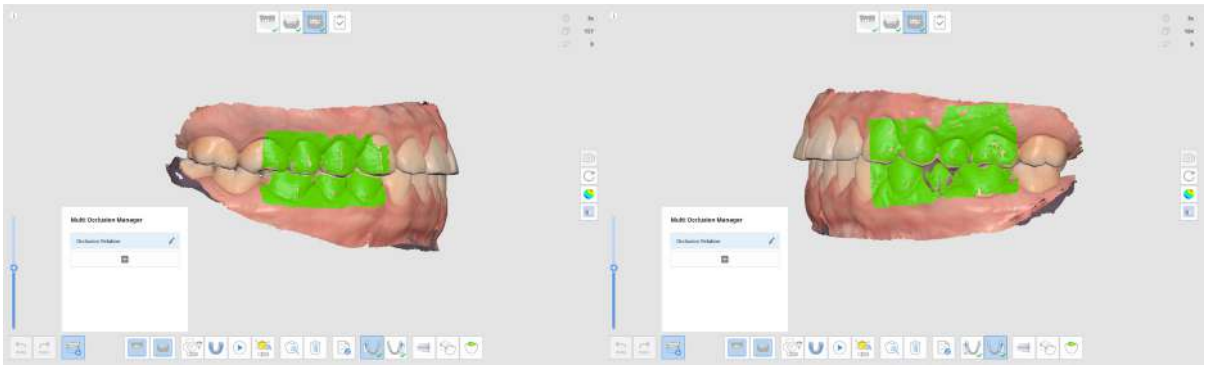
Enter the Occlusion scan stage of the Scan for Clinics.

Click on the “Multi Occlusion” button on the bottom of the screen to manage a newly produced multi occlusion.

The existing Occlusion scan stage will be assigned as Occlusal Group 1, and have support with functions of addition and management of occlusion groups.

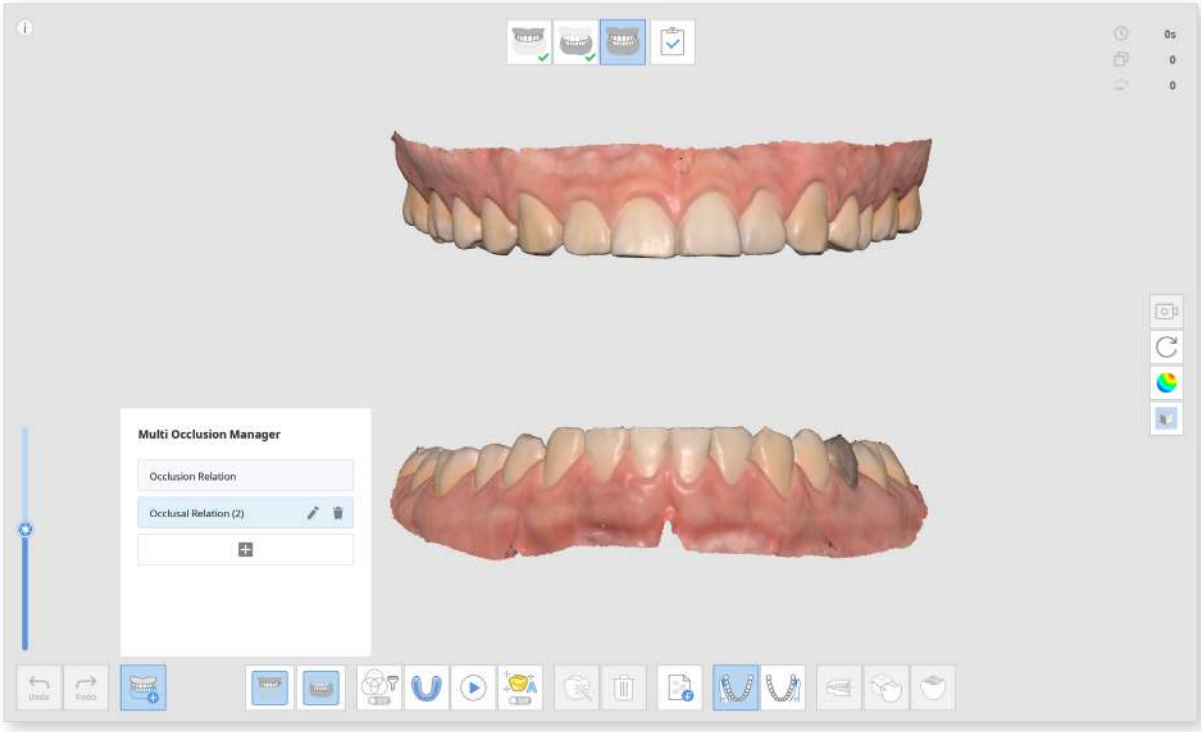


Perform the first and second occlusion scans, and align the scan data of maxilla, mandible, and occlusion.



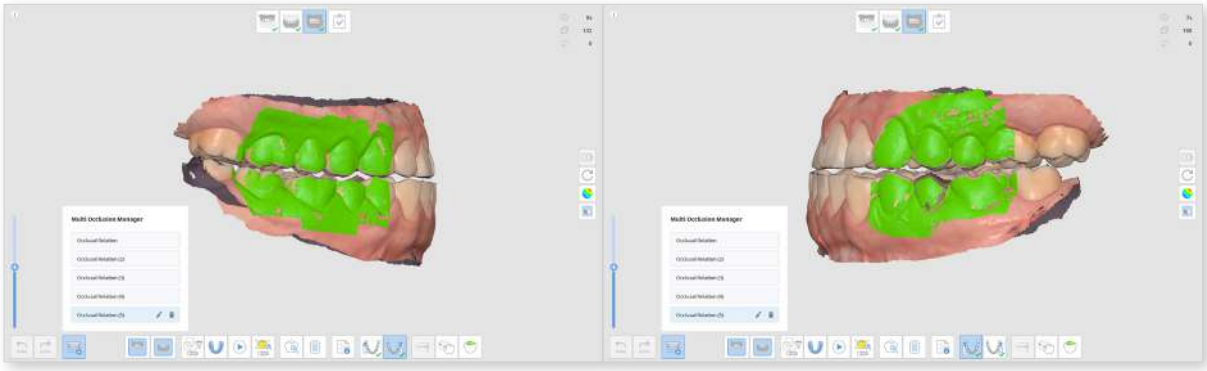
Click “Add Group” to create a new occlusion group.

Enter the first occlusion scan after the new occlusion group is created.

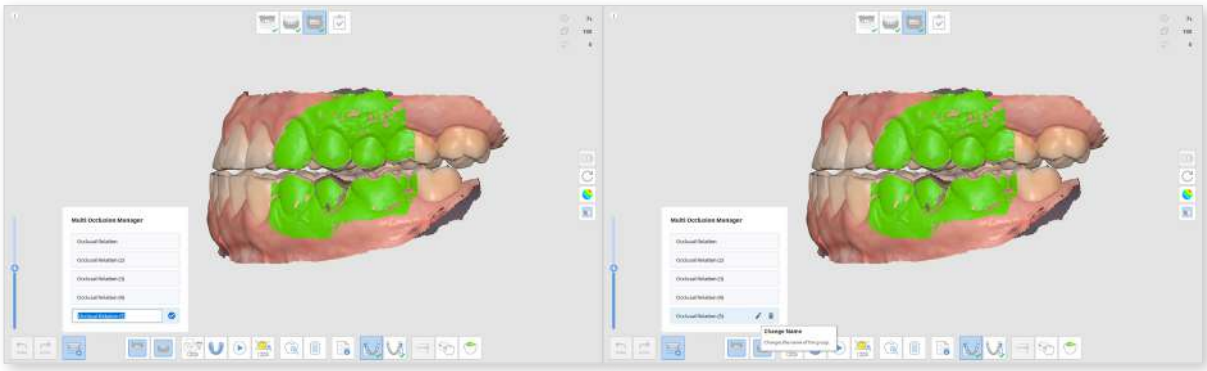


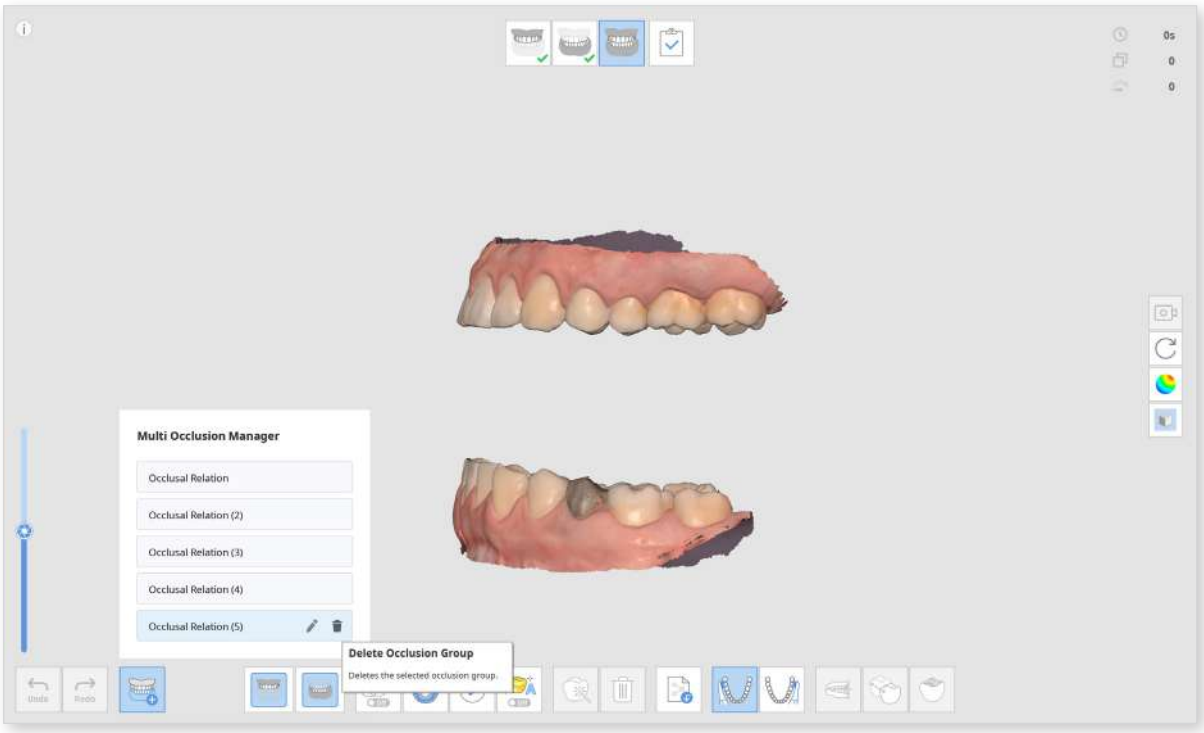
Perform the new occlusion scans, and align the scan data of maxilla, mandible, and occlusion.

Up to 5 occlusion groups can be created.

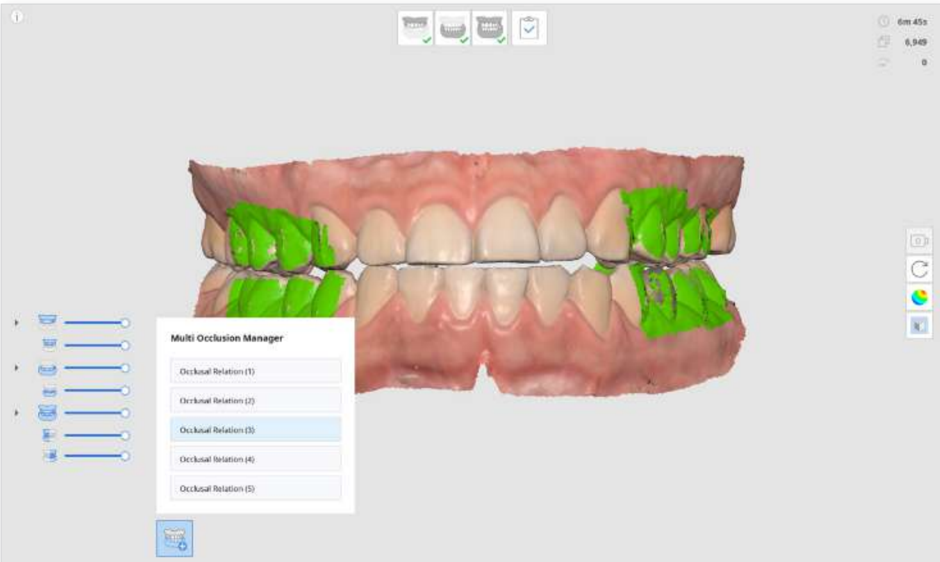


In “Multi Occlusion” mode, you can create a new group, change names of the created groups, and delete groups.



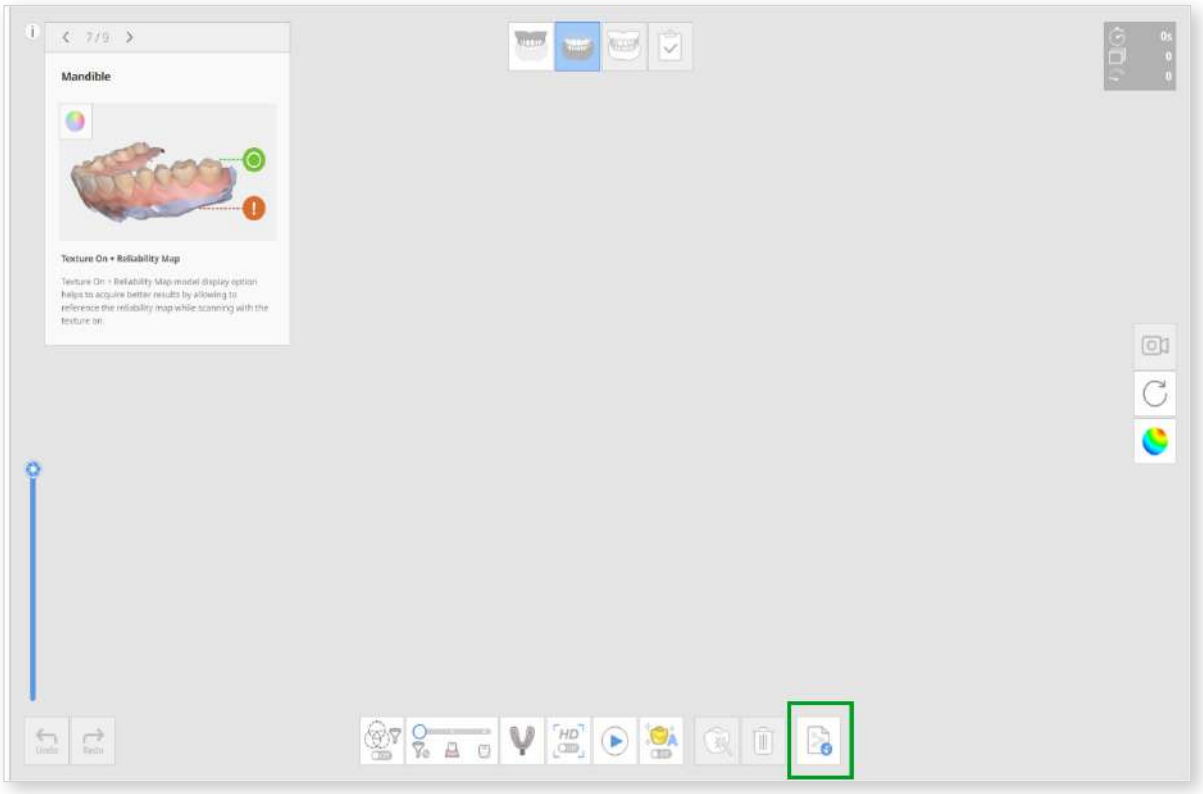


Scan data of various occlusion groups and alignment can be checked by using the "Multi Occlusion" function in full view.



Import Scan Data

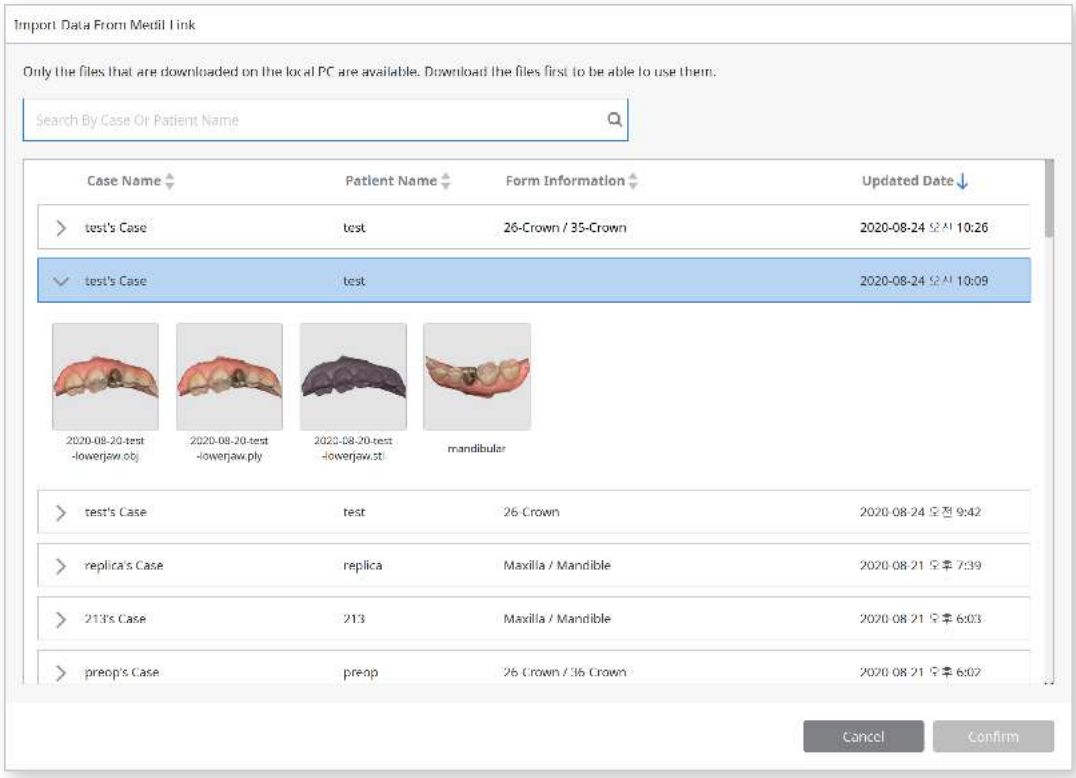
The **Import Scan Data** tool, located at the bottom of the screen, allows the import of scan data acquired by third-party scanners, performs additional scanning, and continues scanning.



Import a previously scanned file from a case in Medit Link.

Import the file before starting the scanning process, or when moving on to the next stage.

① Click “Import Scan Data” to choose a file from a Medit Link case.



When importing a third-party scan file, make sure to attach it to a case in Medit Link before proceeding.

The following file formats are available for import: Meditmesh, OBJ, PLY, STL.

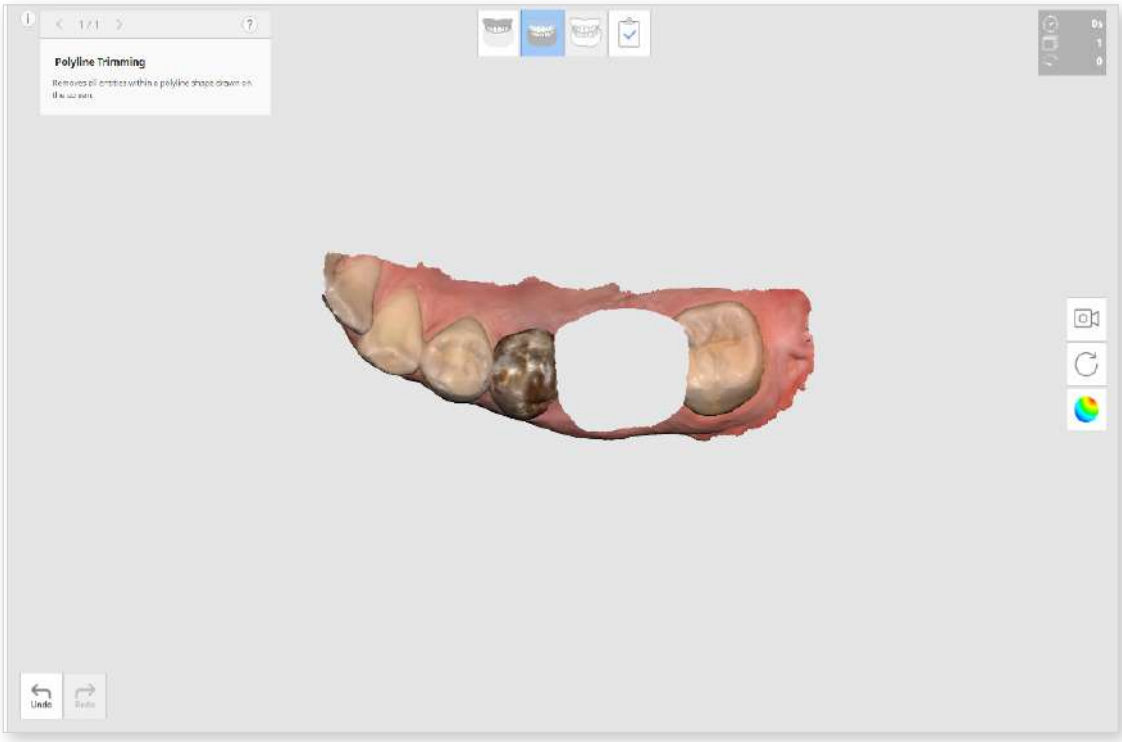
Meditmesh

OBJ

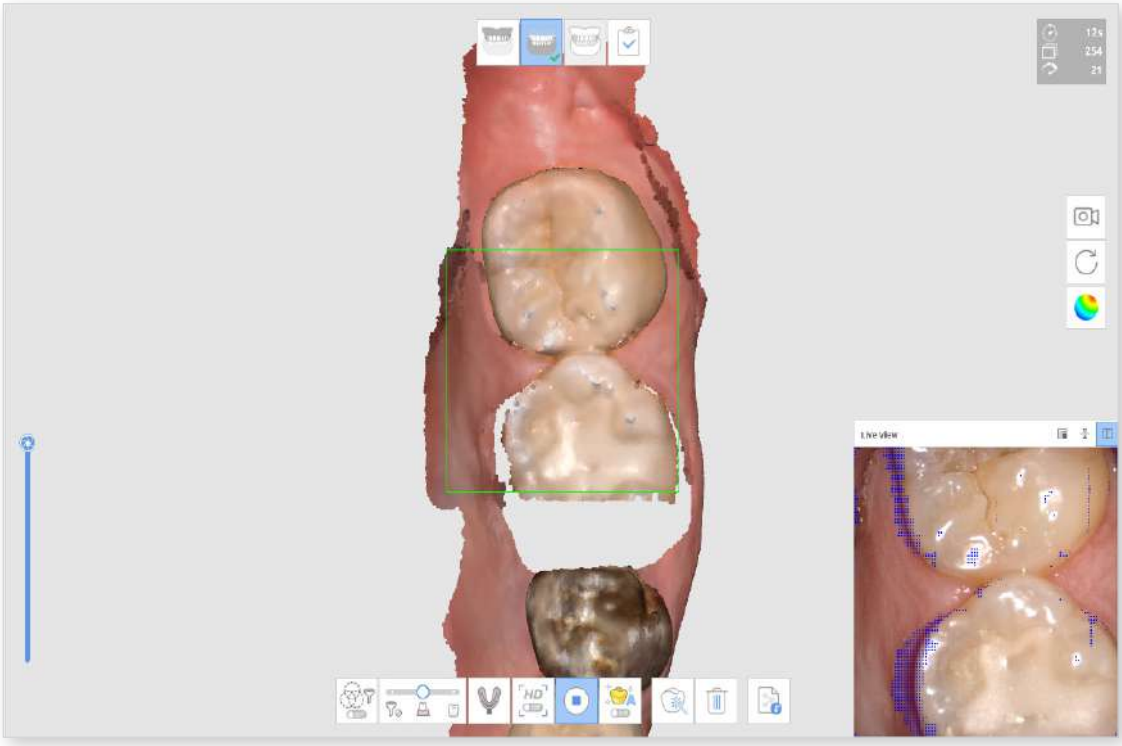
PLY

STL

② Trim the part needing a rescan.



③ Perform additional scanning.



④ Finish the scanning.

Denture Scan Process

The denture sequence can be utilized for scanning the patient's existing denture, or in the process of creating one (also applicable for temporary denture, wax rim, etc.). Occlusion scan is also supported.

To enable the denture process, make sure to register Denture – Full Denture, Denture – Replica Denture, or Denture – Implant Supported Denture in Medit Link.

Guidelines for the Denture Scanning Process

- Make sure all sides of the denture are sufficiently scanned, including labial/buccal and palatal/lingual surfaces.
- For maxilla, make sure to scan the palatal area, including the palatal rugae and maxillary tuberosity.
- For mandible, make sure to scan the retromolar triangle.
- If the camera is lost during scanning, start again at the palate's most prominent part, such as palatal rugae or residual alveolar ridge.

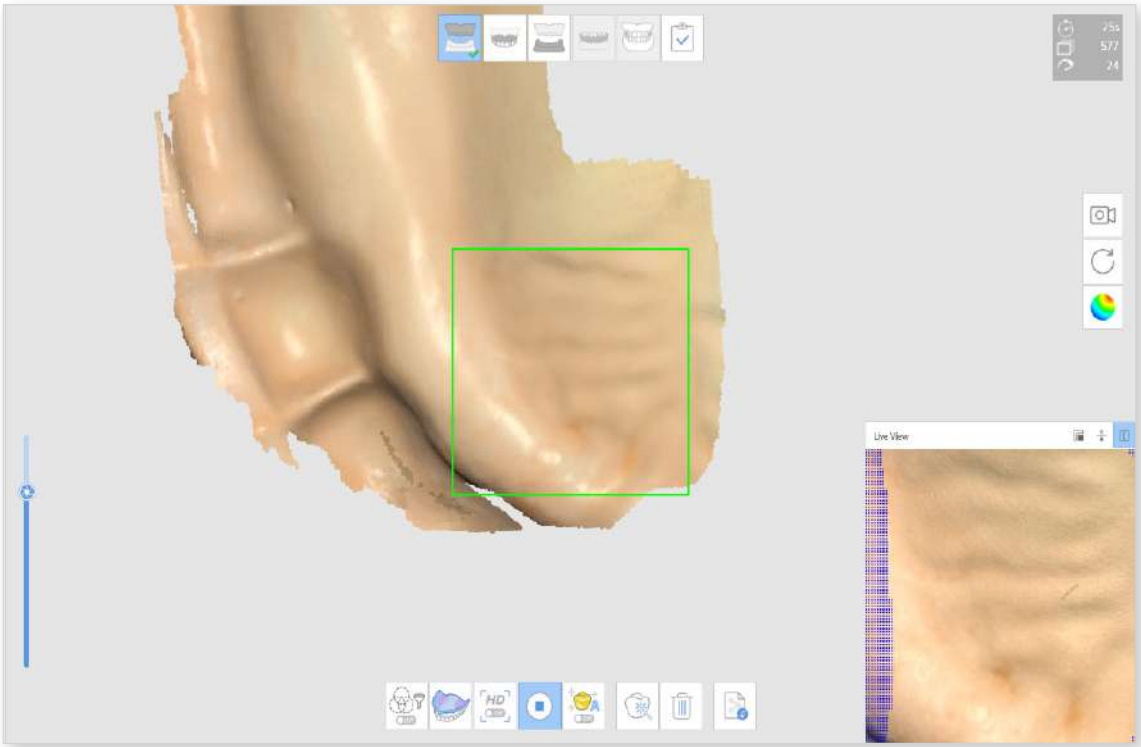
Denture – Full Denture

The scan sequence will appear as follows: Edentulous Maxilla > Maxillary Denture > Edentulous Mandible > Mandibular Denture > Occlusion.

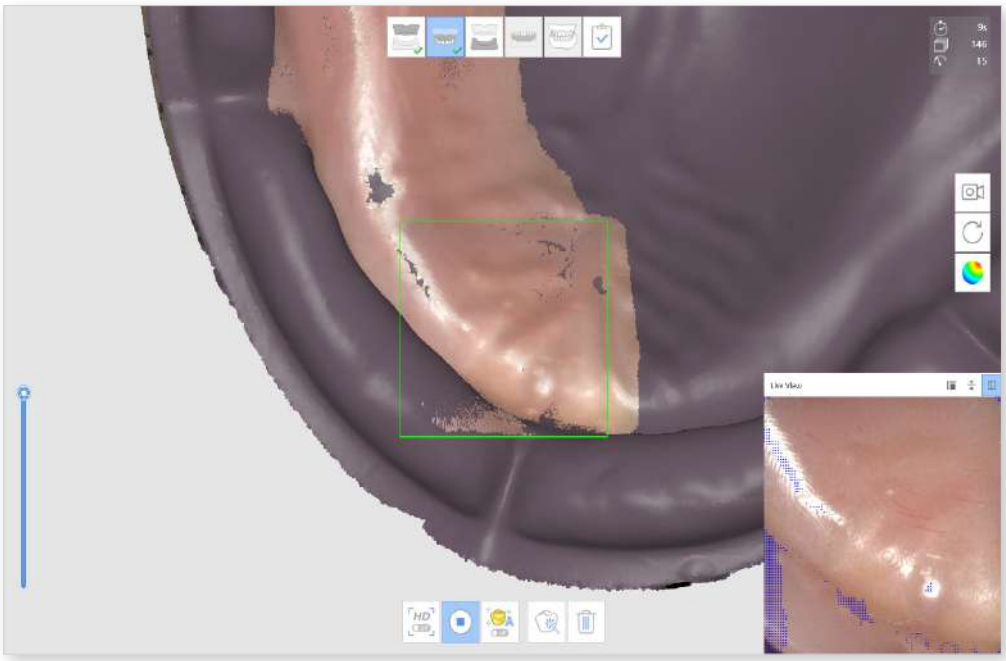
Denture – Full Denture (Acquiring Edentulous Scan Data)

Scan the edentulous arch at the Edentulous Maxilla scan stage. Then, proceed to scanning the denture at the denture stages.

① Scan the edentulous surface.



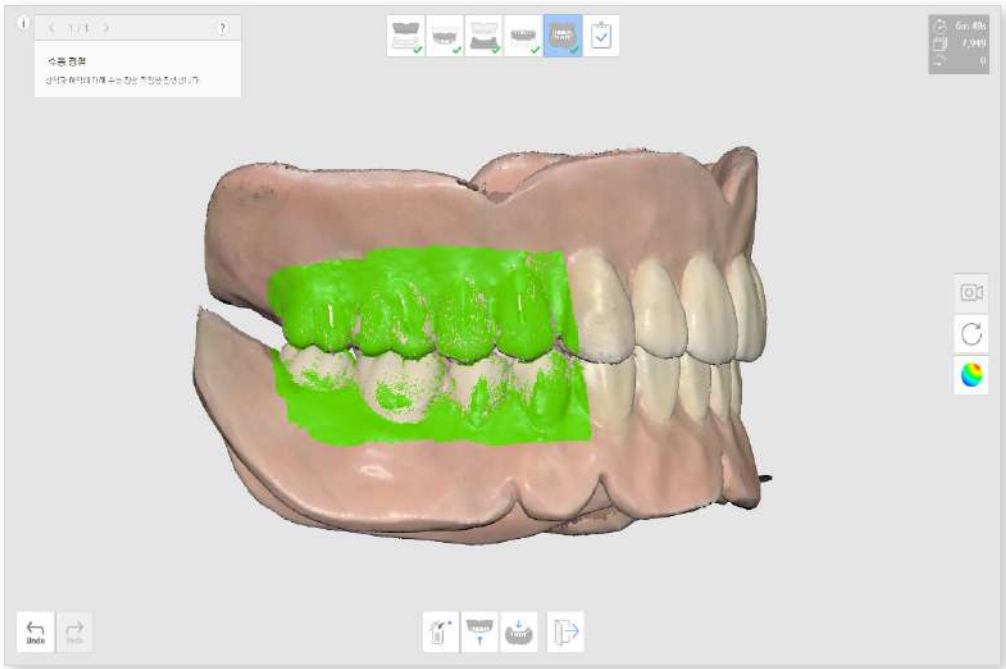
② The edentulous data acquired at the first scan stage (Edentulous Maxilla) will be reversed and used as the basis for the denture alignment at the next scan stage.



– The scan should be done according to the following path: Fitting surface > border > polished surface and artificial teeth.

③ Repeat the process for the mandible.

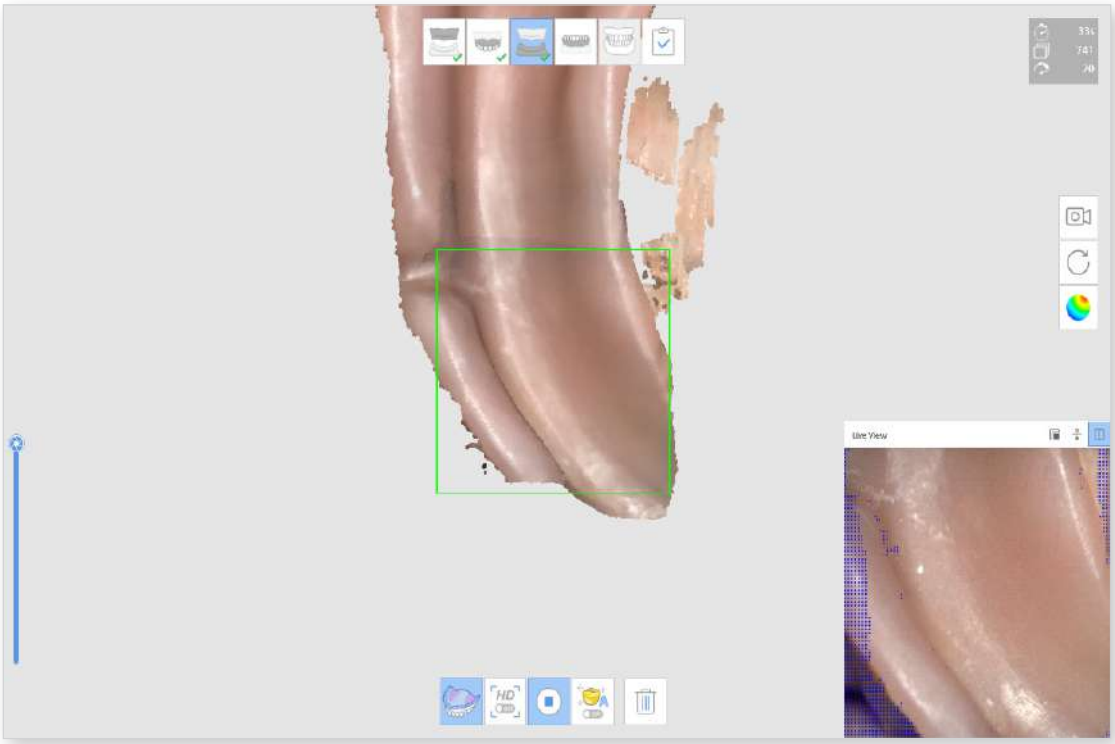
④ Scan the denture occlusion at the Occlusion scan stage. The data can be utilized in CAD.

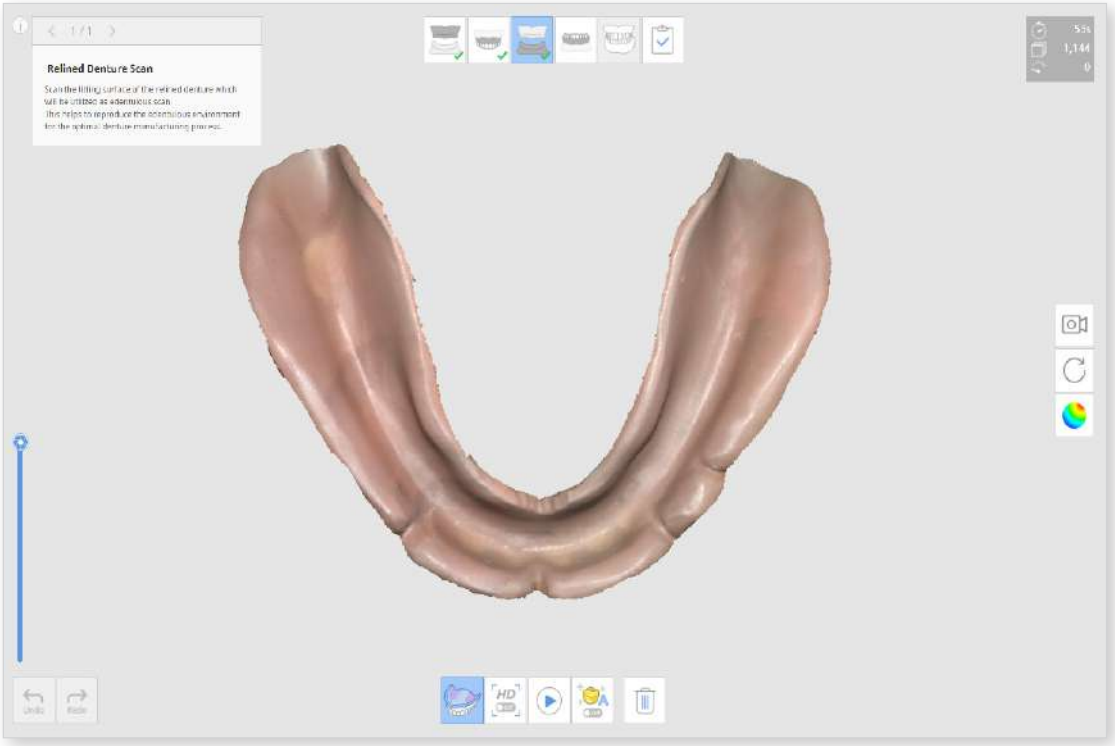


Denture – Full Denture (Relined or Rebased)

Scan the denture without acquiring intraoral data from the patient. Scan the fitting surface of the denture at the Edentulous Mandible scan stage and the outer side at the denture stages.

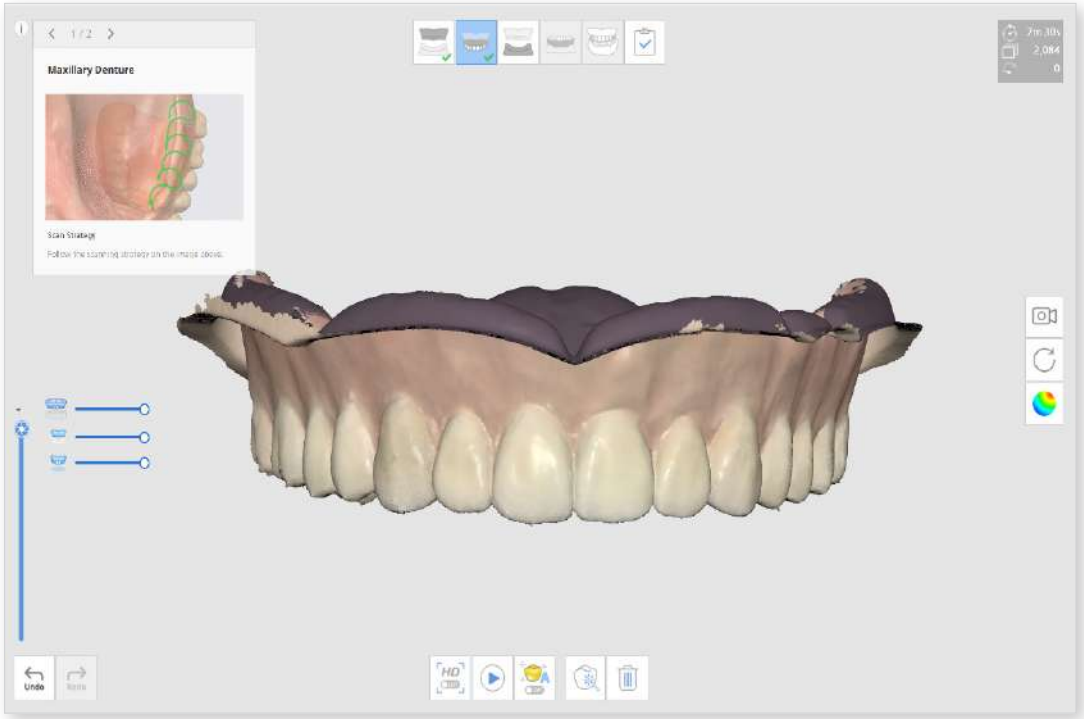
① At the Edentulous Mandible scan stage, click “Relined Denture Scan”  to scan in reverse mode.



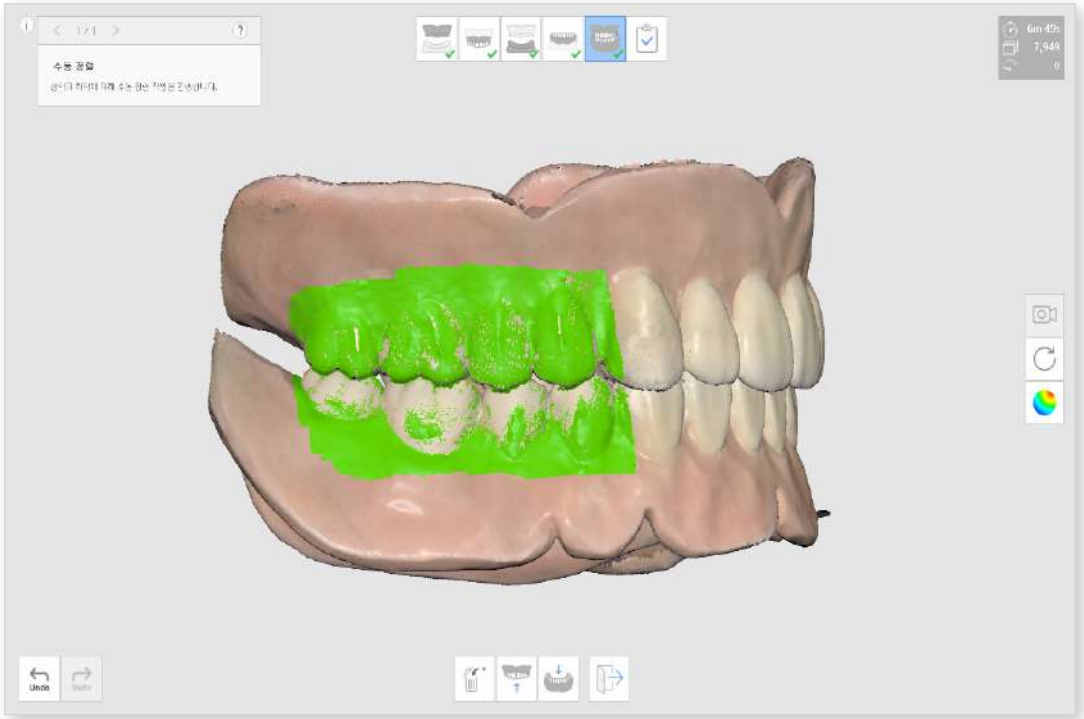


② After moving to the next stage, scan the outside of the denture. The data from the previous stage will be copied and reversed, since it will be used as the basis for denture alignment.

③ Repeat the process for the maxilla.

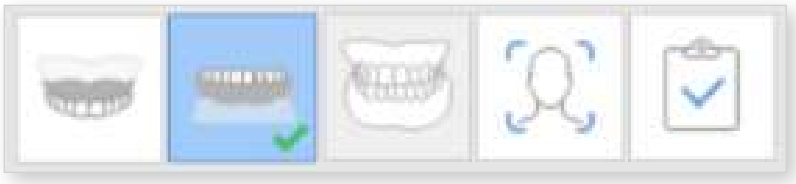


④ Scan the denture occlusion at the **Occlusion** scan stage. The data can be utilized in CAD.

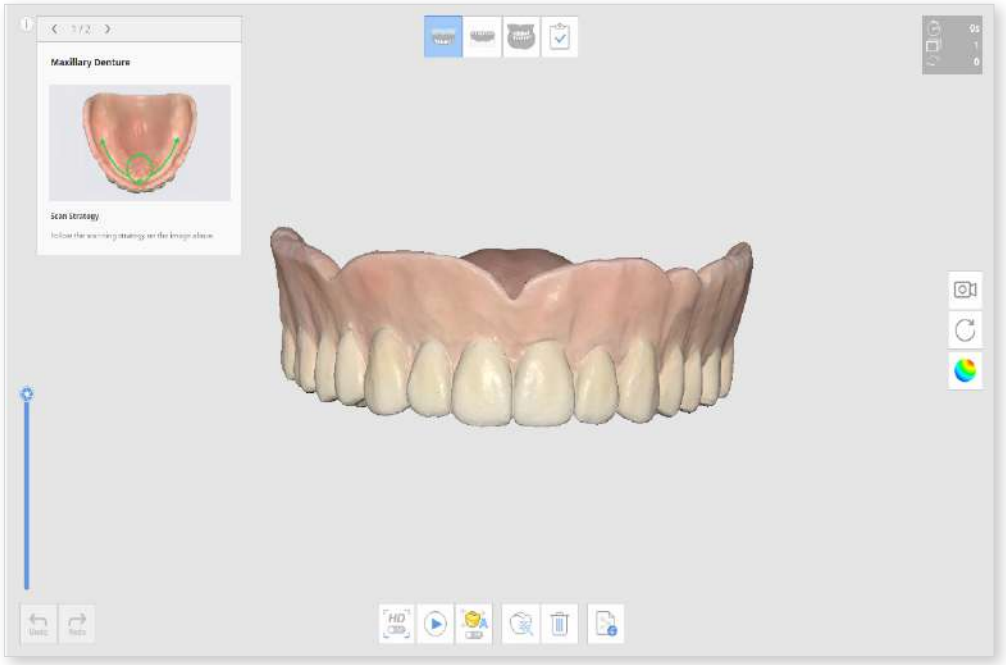


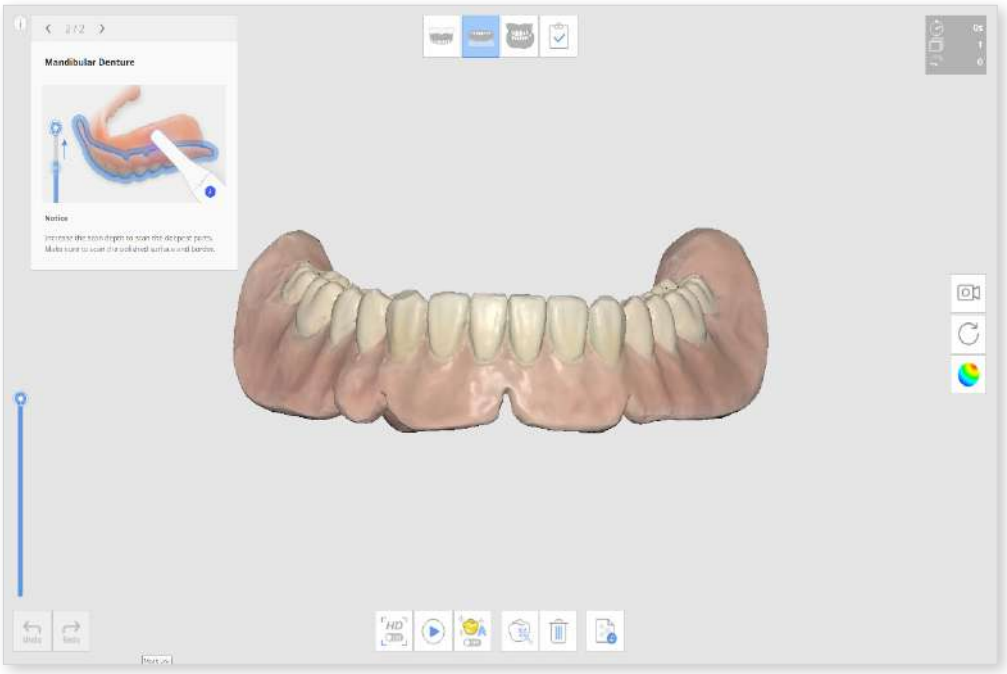
Denture – Replica Denture

The scan sequence will appear as follows: Maxillary Denture > Mandibular Denture > Occlusion.



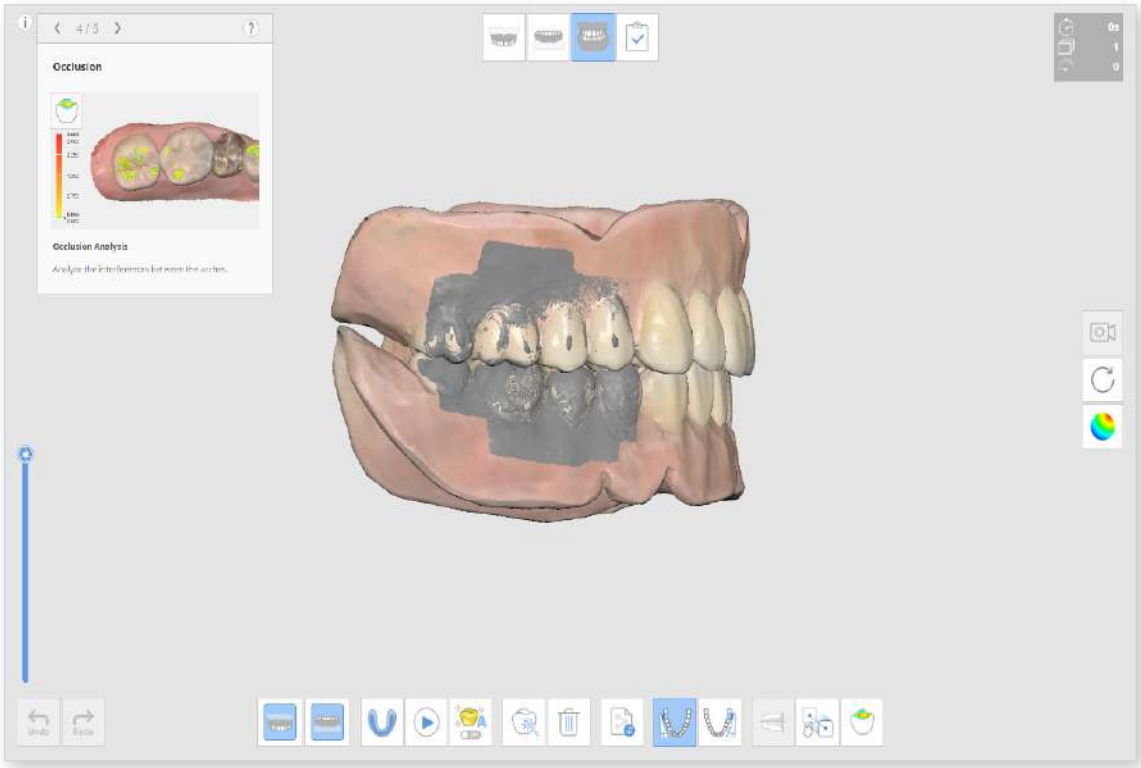
① Scan both dentures.





② The scan should be done according to the following path: fitting surface > border > polished surface and artificial teeth.

③ Scan the denture occlusion at the Occlusion scan stage. The data can be utilized in CAD.

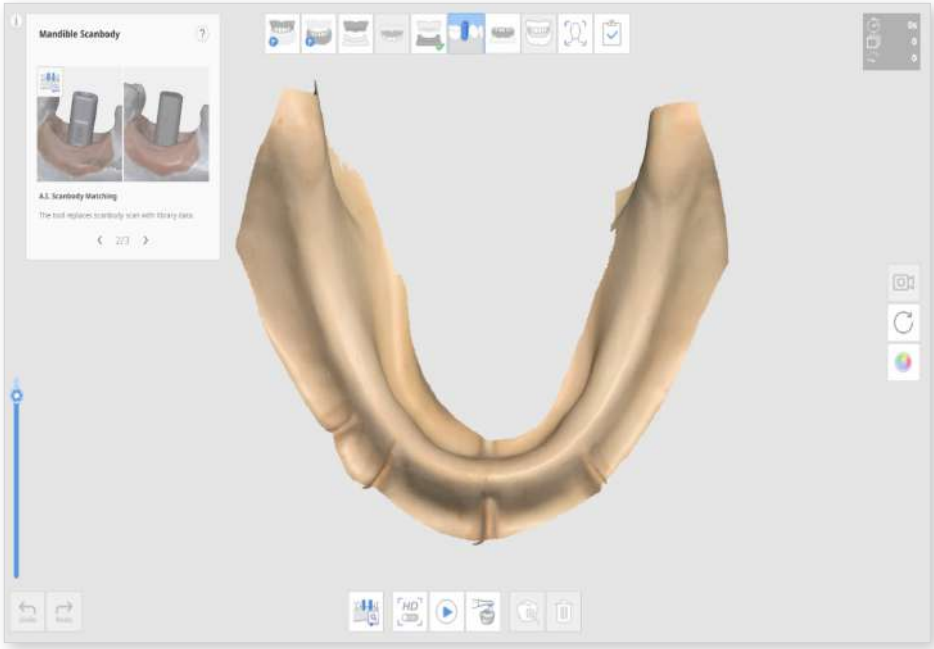


Denture – Implant Supported Denture

The scan sequence will appear as follows: Edentulous Maxilla > Maxillary Denture > Edentulous Mandible > Scan Body > Mandibular Denture > Occlusion.

① Acquire the data for the edentulous scan stages.

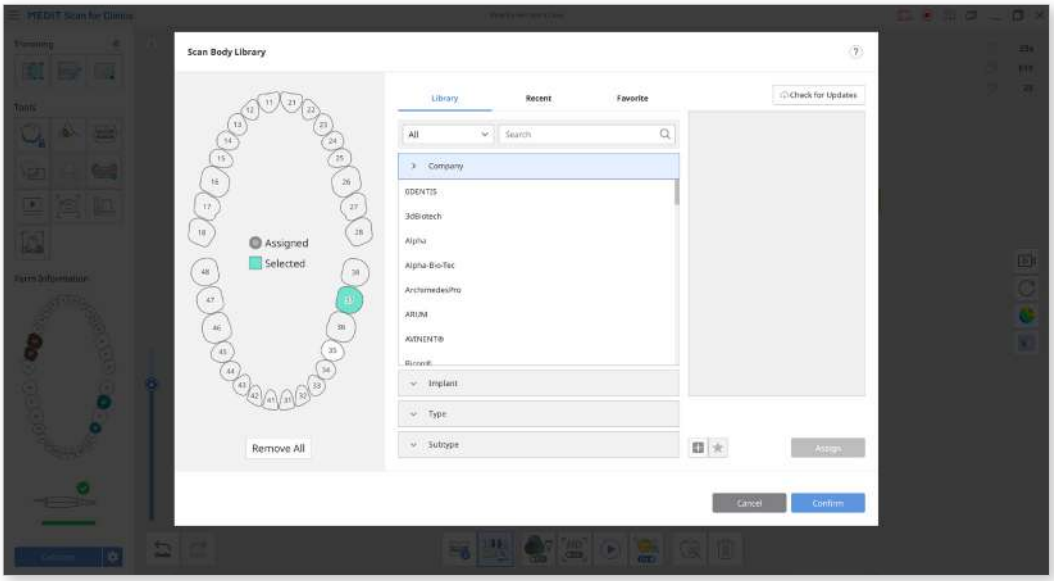
② Scan the scan body at the corresponding scan body scan stage.



Do not forget the option to use the “A.I. Scan Body Matching” tool to get the precise scan body data from the pre-set library.

③ Select the tooth number and find the corresponding scan body data in the library.

④ Click “Conform” after the selection is complete.



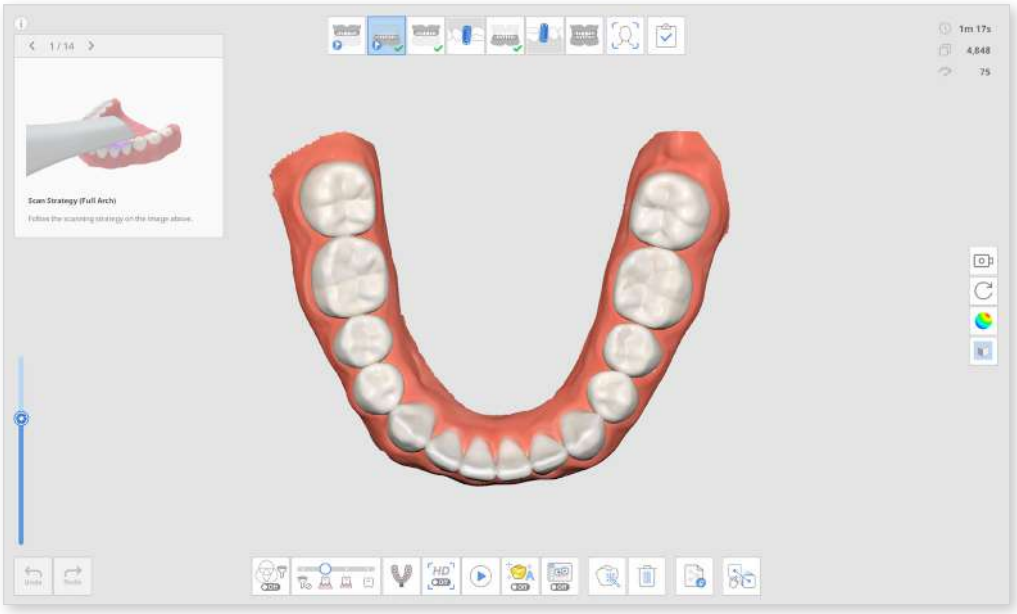
⑤ Scan the denture occlusion at the Occlusion scan stage. The data can be utilized in CAD.

Pre-Op Scan Stage

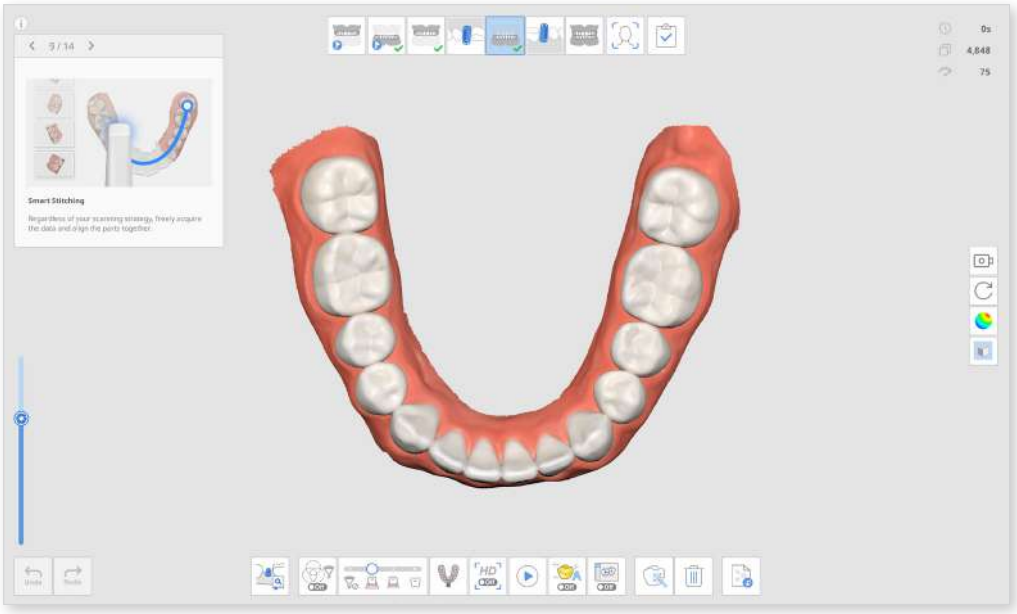
You can use the pre-op teeth shape data from the Pre-Op stage as future reference data to create prosthesis later. Scan pre-op scan data at the Pre-Op scan stage. Then, at the maxilla or mandible scan stage, additionally scan prepped teeth and selectively replace the data.

How to Use

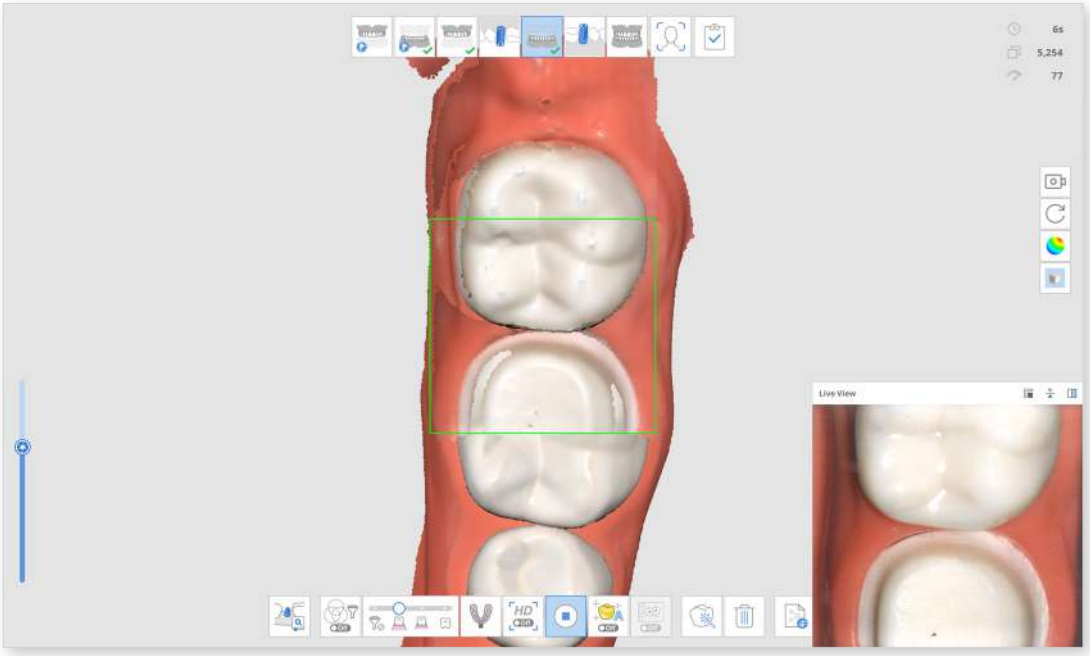
① Gather scan data including teeth that is not prepped in the Pre-Op stage.



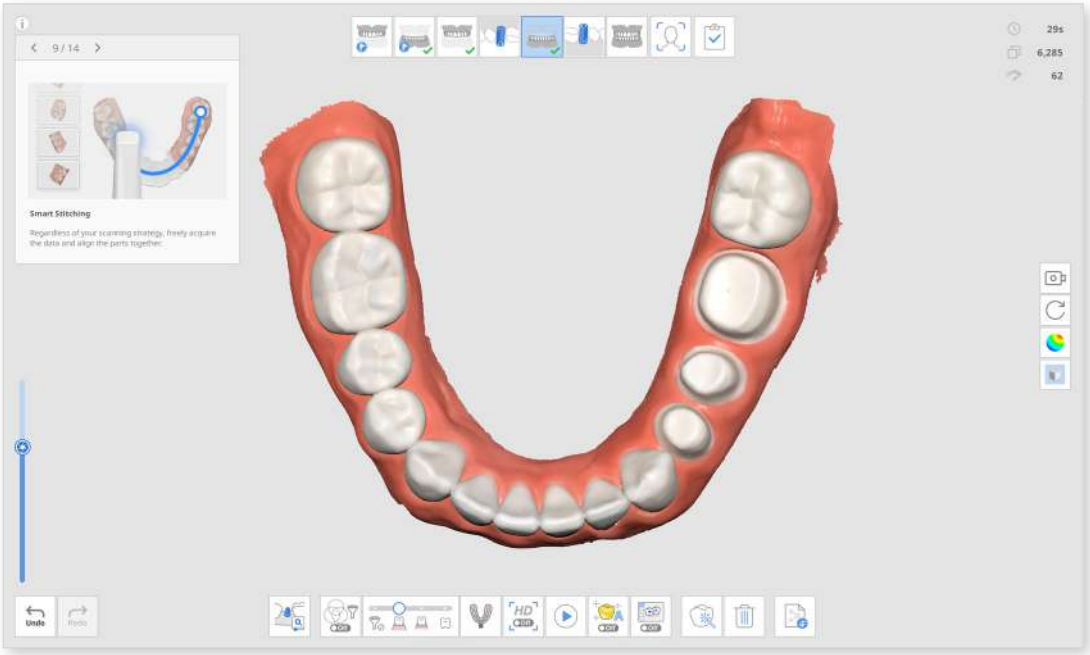
② Move to the Maxilla or Mandible scan stage. The data gathered in the Pre-Op stage will be replicated.



③ Start scanning in the common areas without the prepped teeth. As you scan, move to the prepped teeth area and gather prepped teeth scan data to replace the corresponding Pre-Op scan stage data.

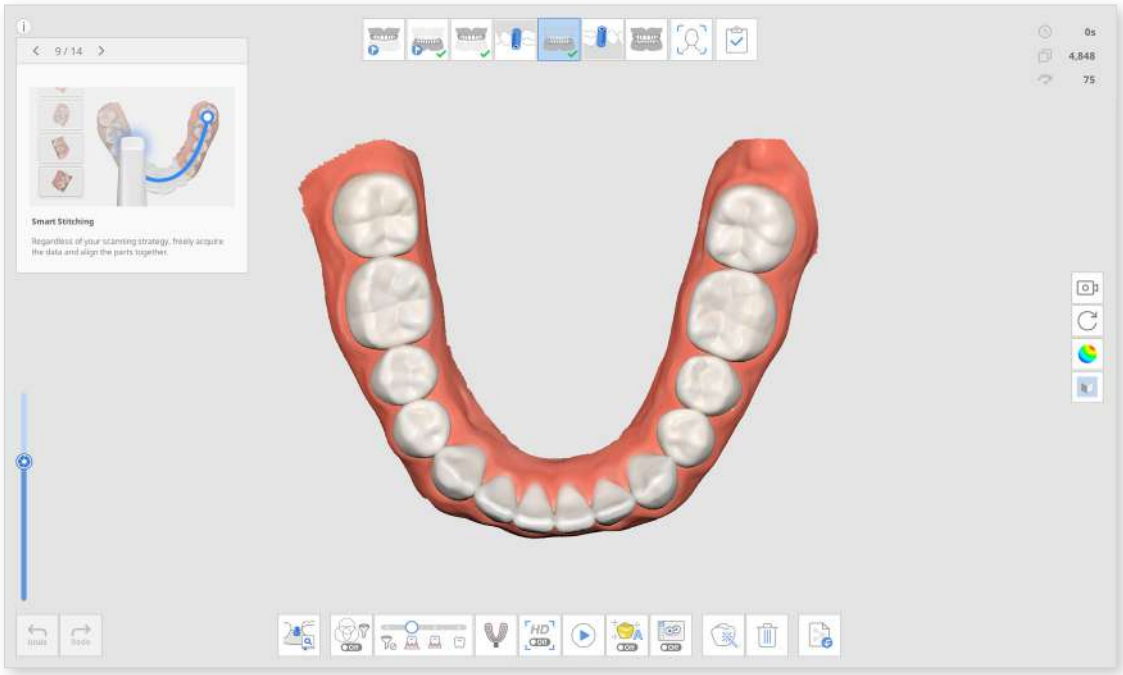


④ The image below shows the completed scan.

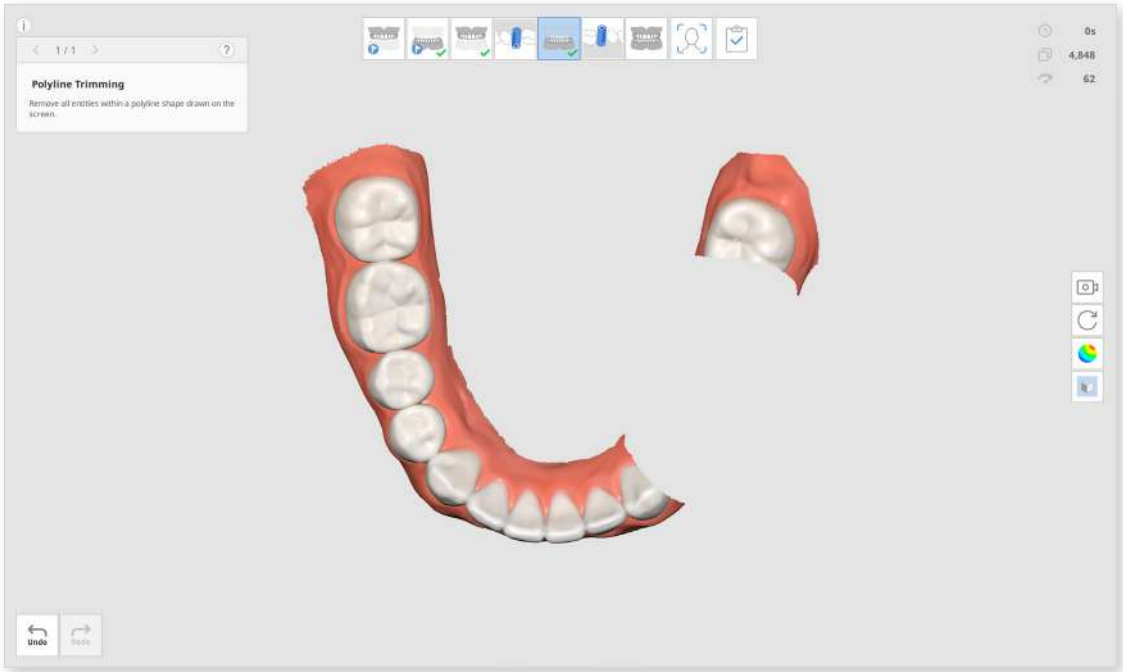


How to Use the Trimming Tool

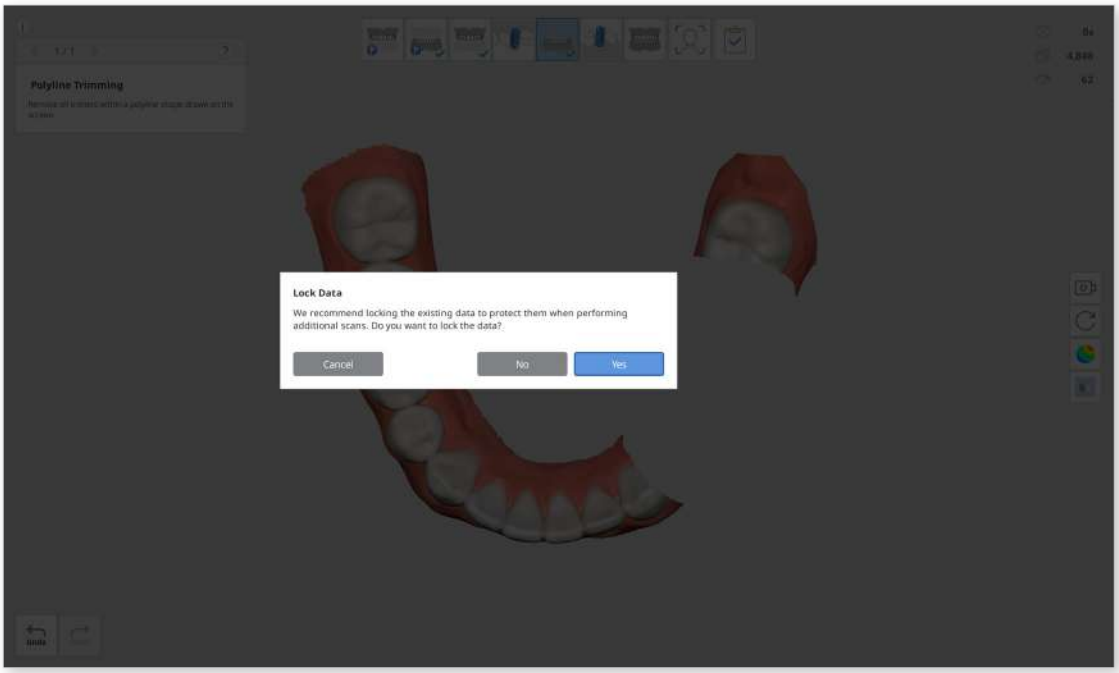
① Like above, gather the data in the Pre-Op scan stage and replicate the data to the Maxilla or Mandible scan stage.



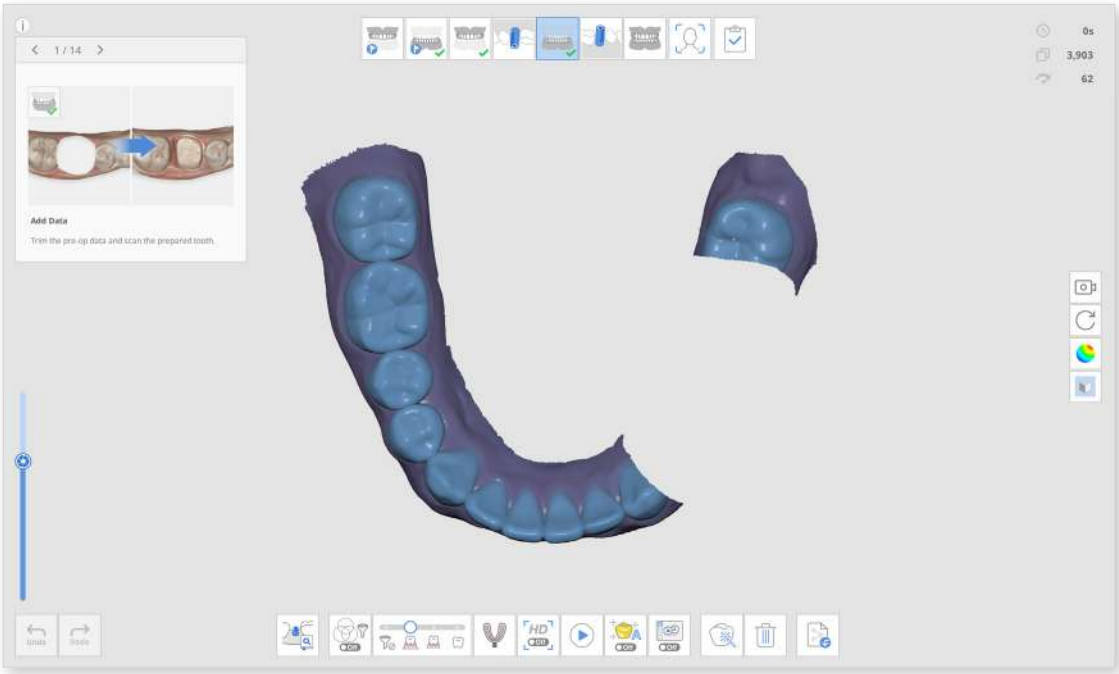
② Use the Trimming Tool and delete the data that will be replaced by the prepped teeth.



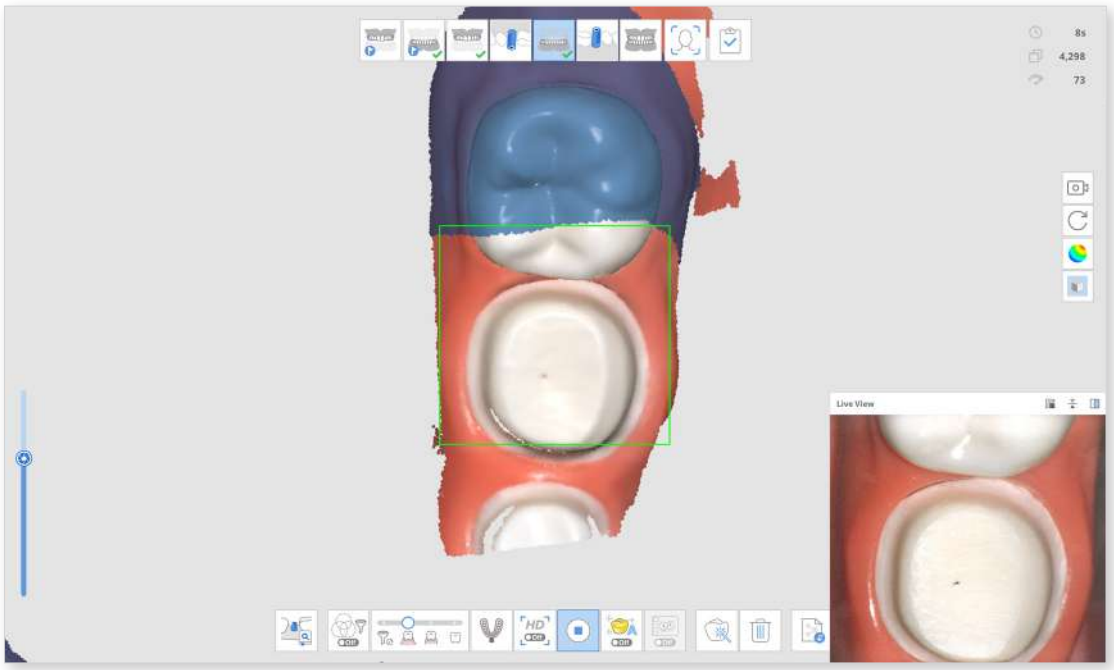
③ When you try to exit from Trimming Tools, you will get a message shown below that recommends you to lock the data.



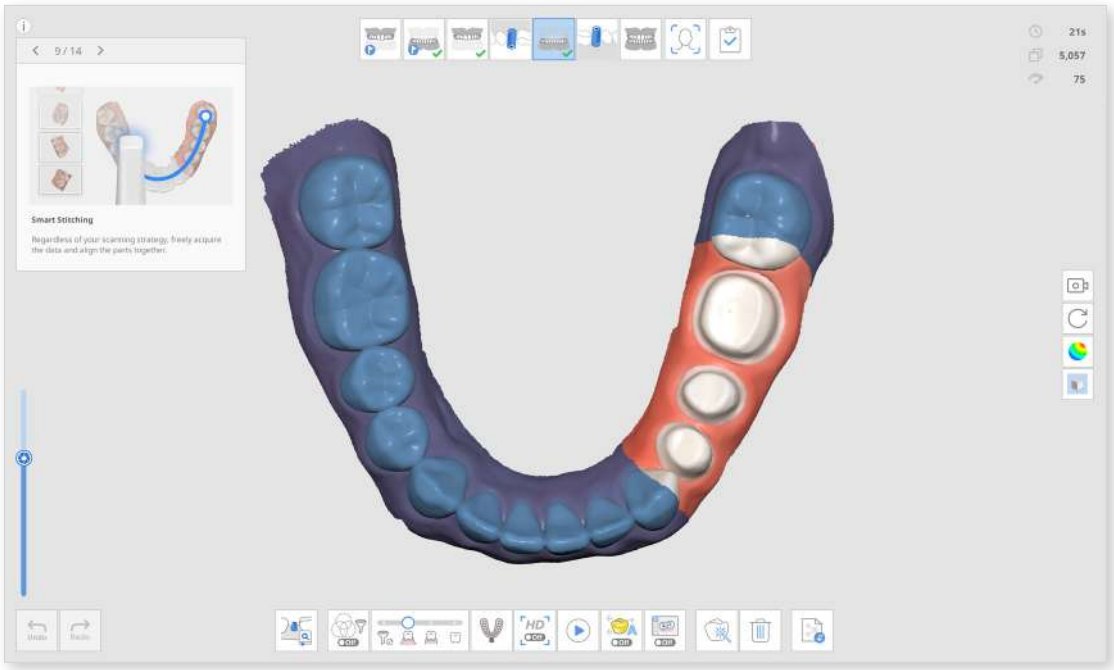
④ Click “Yes’ to lock the existing data to protect them when performing additional scans. This will prevent them from any unwanted changes.



⑤ Gather additional scans in the prepped teeth area.

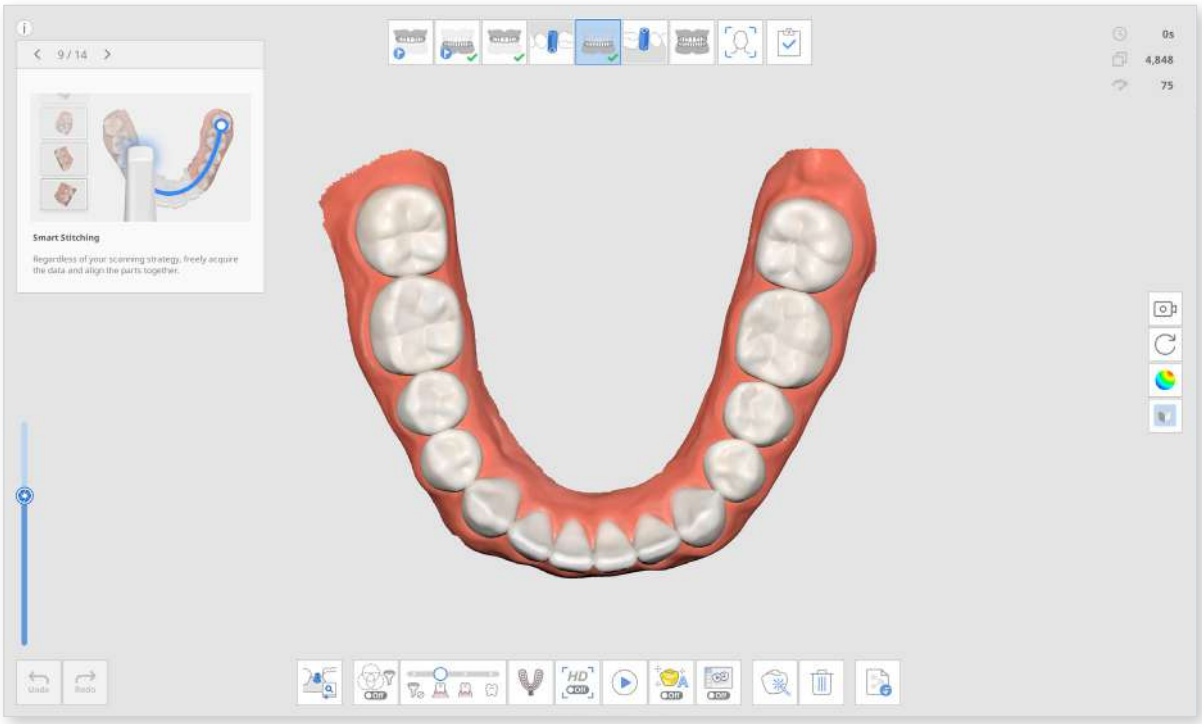


⑥ The image below shows the completed scan.

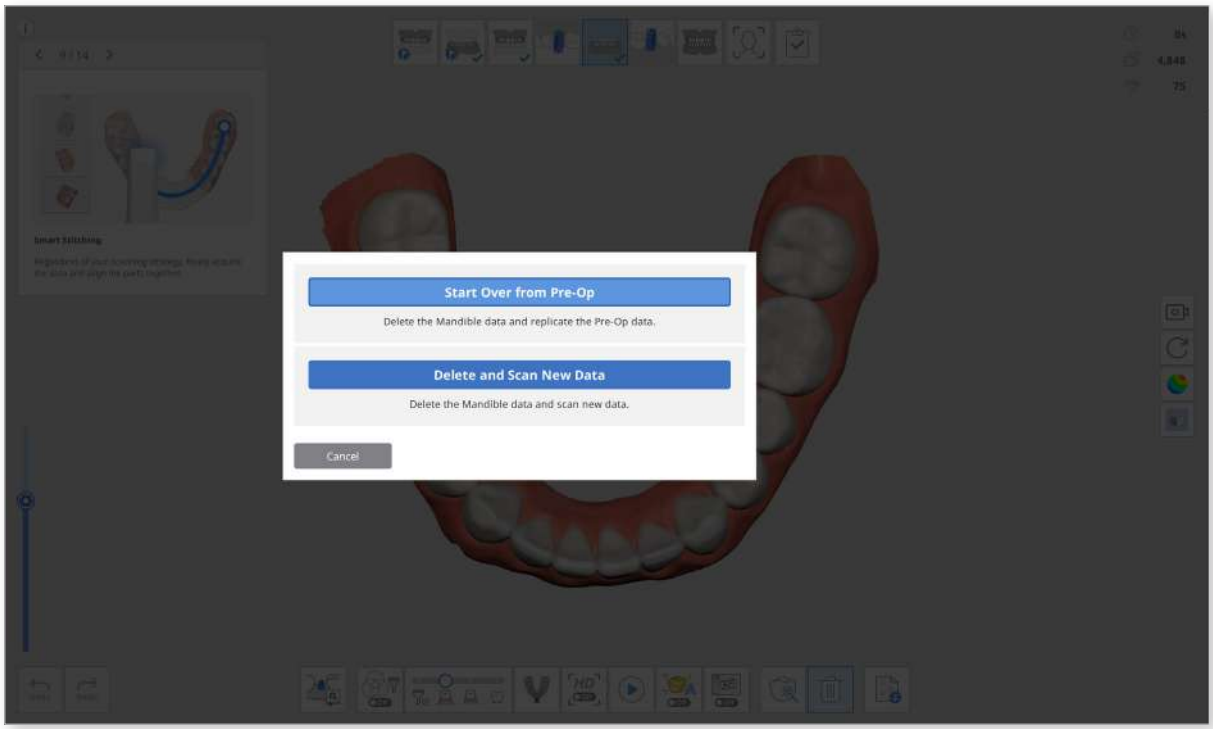


How to Delete Replicated Data and Scan New Data

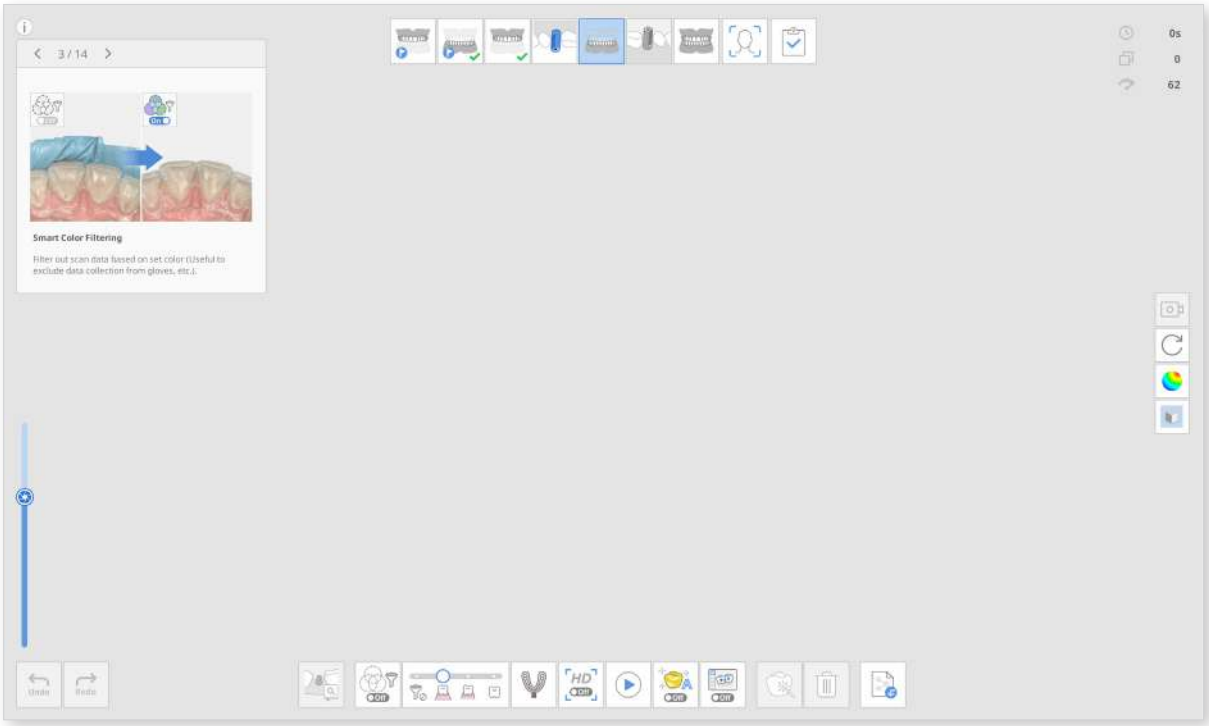
Like below, gather the data in the Pre-Op scan stage and replicate the data to the Maxilla or Mandible scan stage.



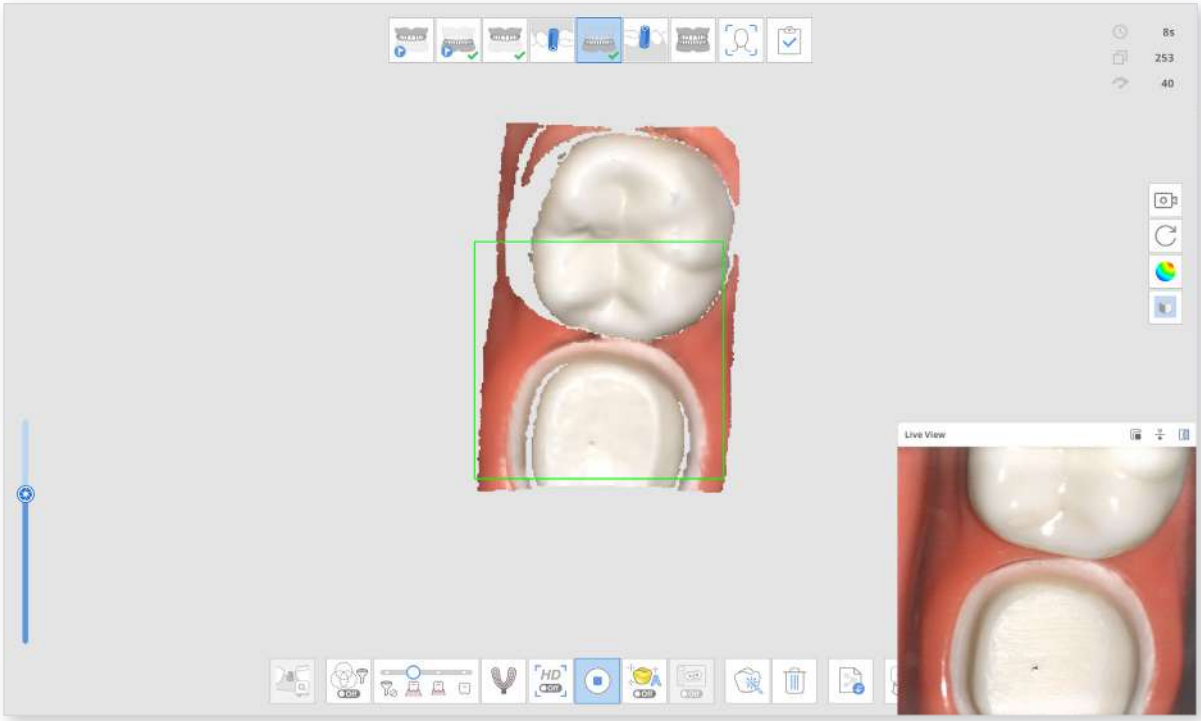
Following message will appear when you click the delete button at the bottom of the screen.



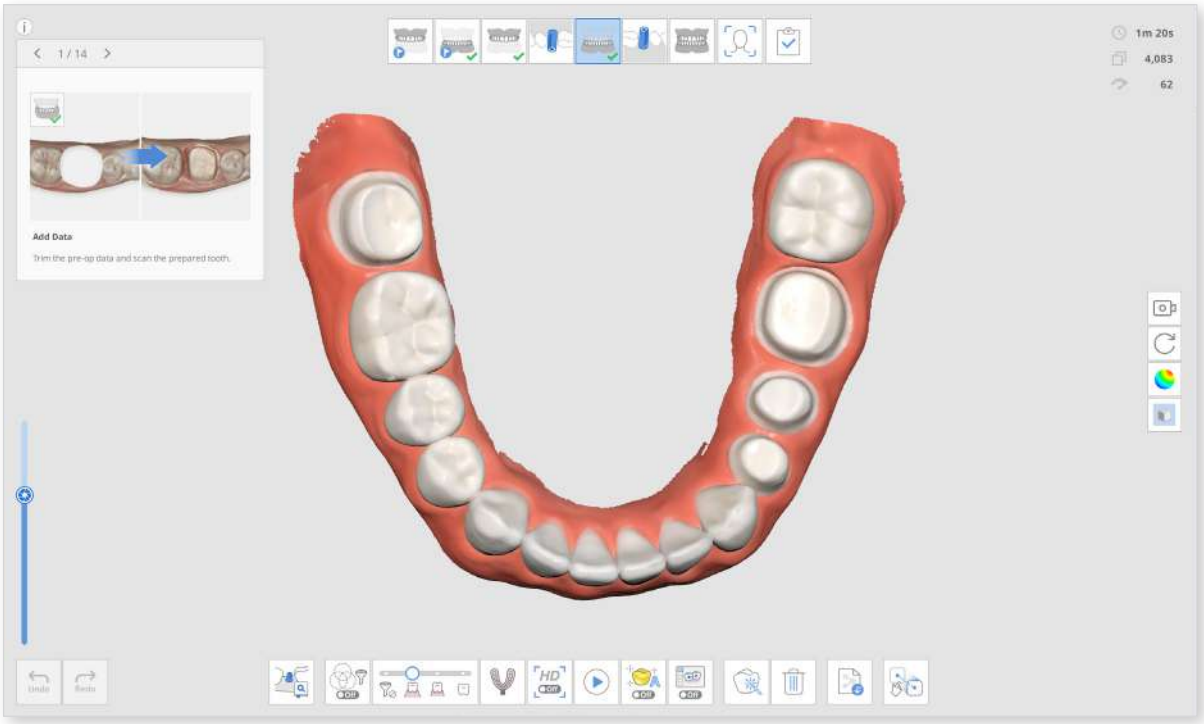
If you click “Delete and Scan New Data,” the replicated data will be deleted.



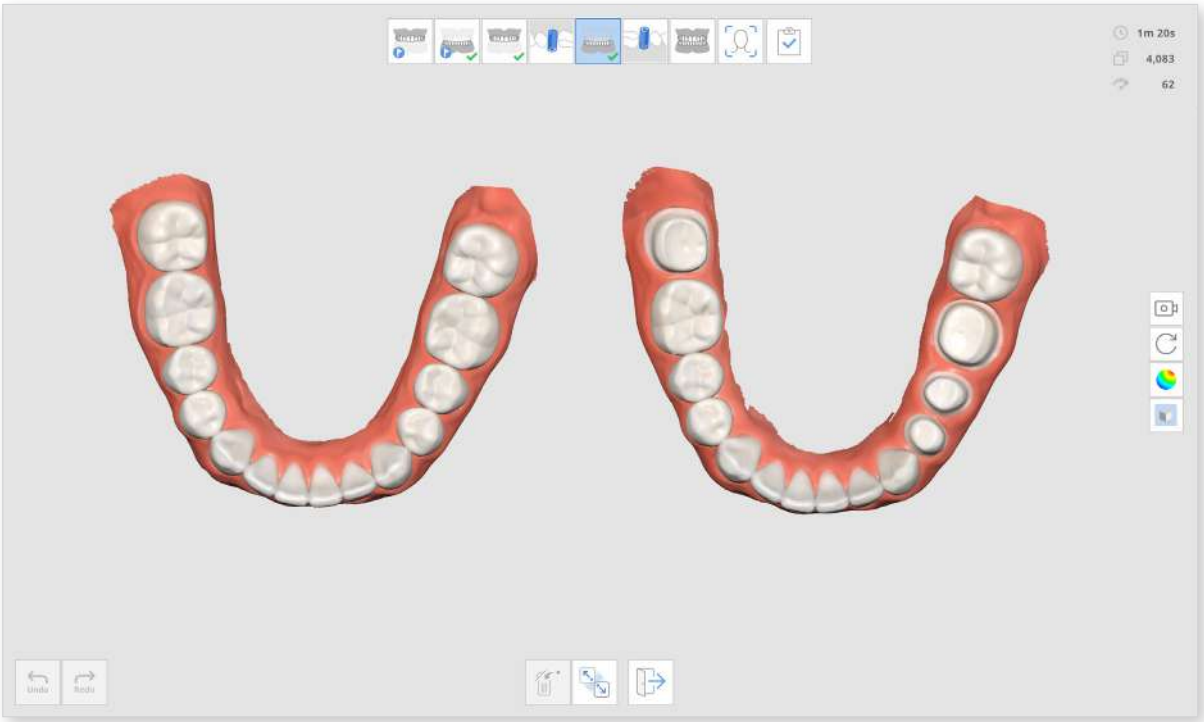
You can now scan the prepped teeth data again.



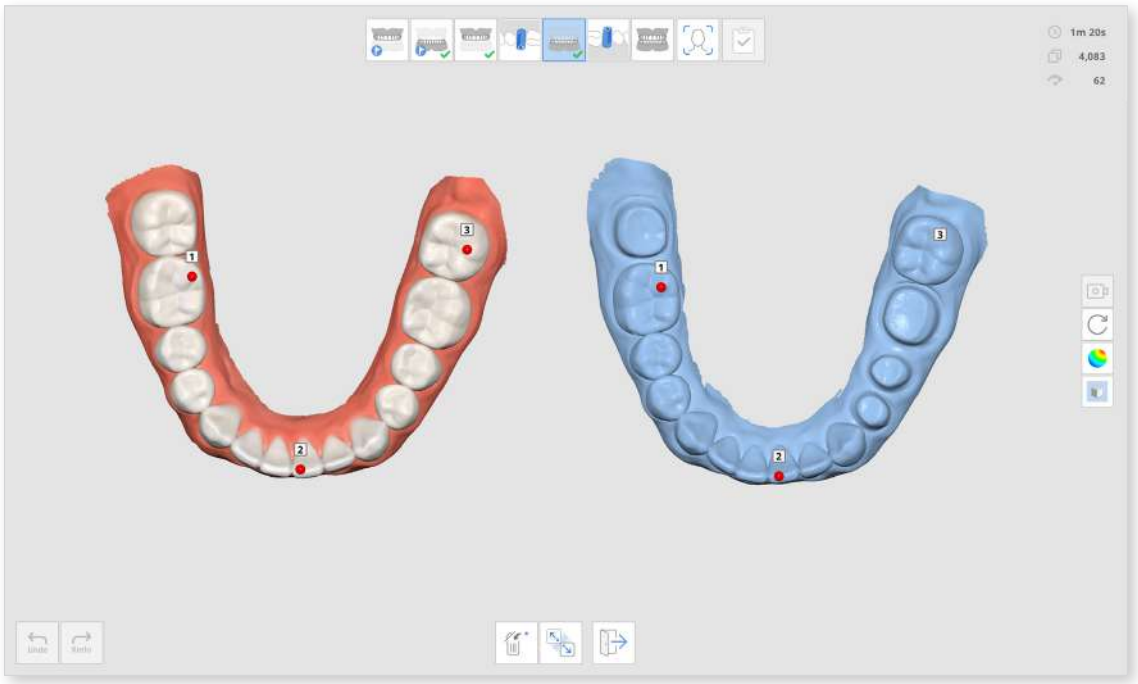
The image below shows the completed scan.



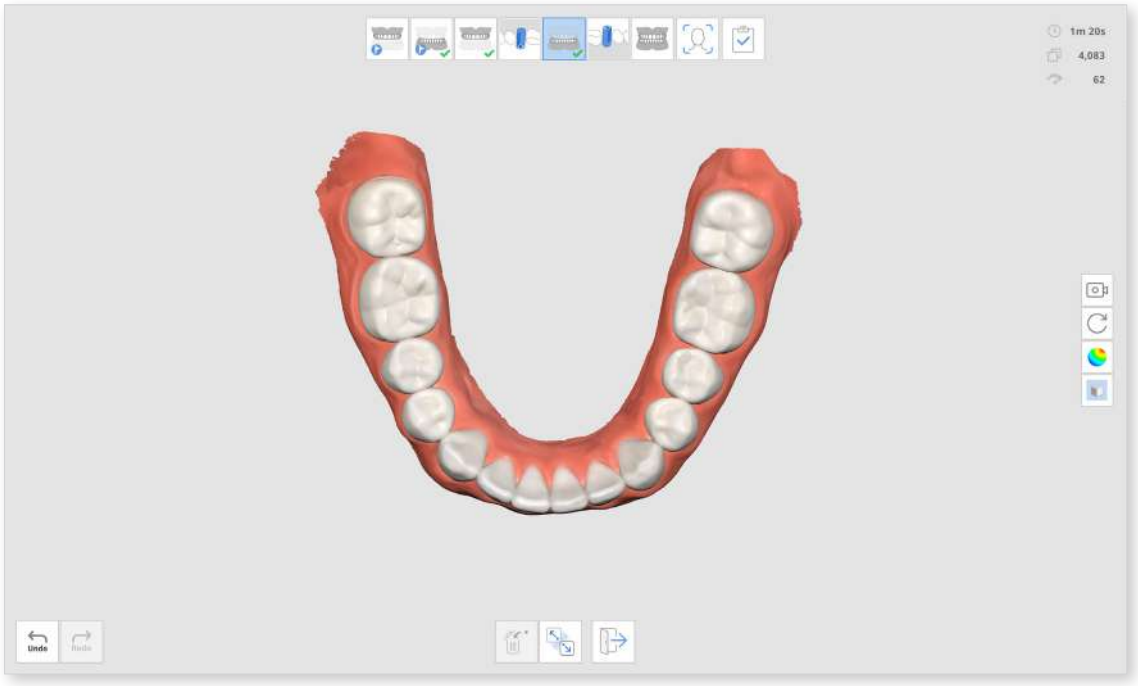
You can click the “Manual Alignment” button at the bottom to manually align the Pre-Op data and Maxilla/Mandible data.



① Place up to three points to align the data.



② The image below shows the completed scan.



Impression Scan (Post and Core, etc.)

	**Impression Scan** provides seamless scanning to combine intraoral and impression scan data. Easily merge the intraoral and impression scan data with integrated scan.

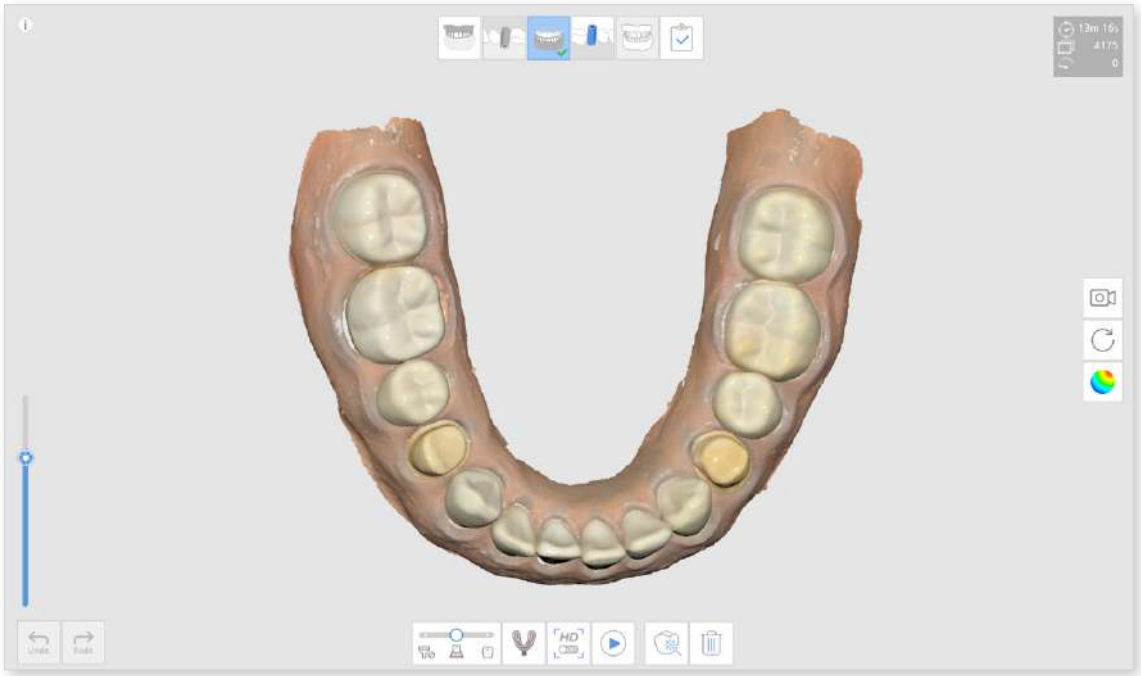
Toolbox

Various selection tools are provided to limit the scanning area. The impression scan data is acquired in the marked area only.

	Polyline Selection	Selects all the entities within a polyline shape drawn on the screen.
	Circle Selection	Selects all the entities within circular area drawn on the screen.
	Brush Selection	Selects all the entities on a freehand-drawn path on the screen. The brush comes in three different sizes.
	Selection	Selects the area using different tools.
	Deselection	Deselects the area using different tools.
	Clear All Selection	Clears selection of the entire area.

How to Use Impression Scan

① Acquire intraoral scan data.

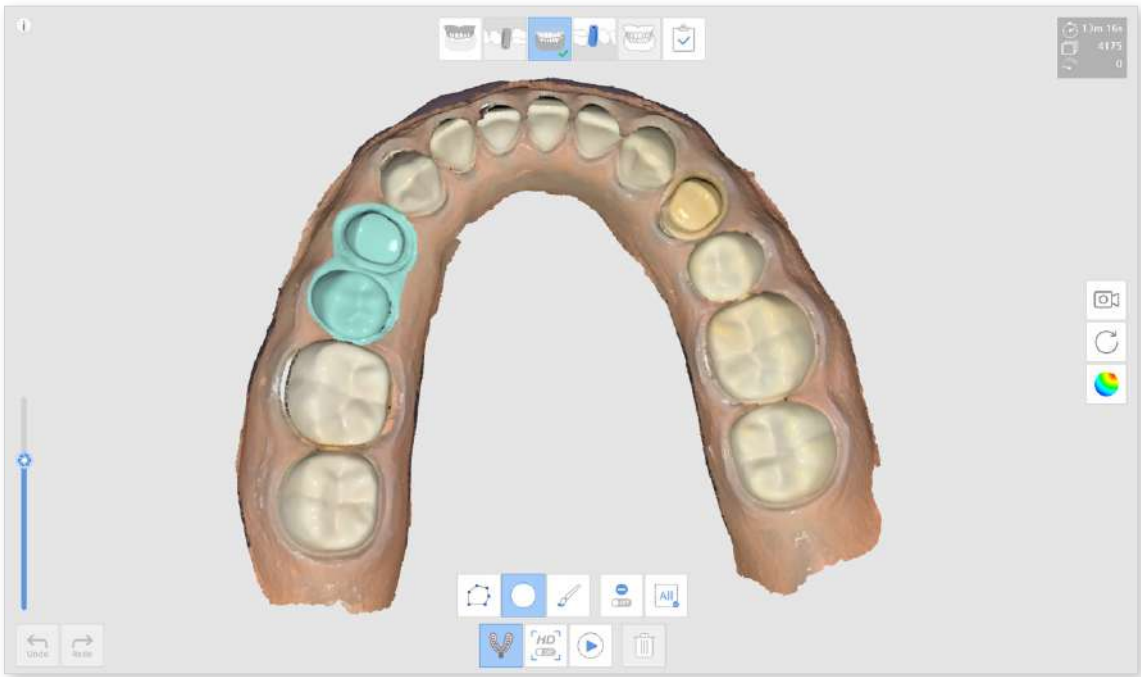


② Turn on “Impression Scan.”

③ Mark the area to replace intraoral data with impression data.

This function is useful to limit the area to be replaced.

If the user skips the marking process, the intraoral data will be replaced by the impression data.

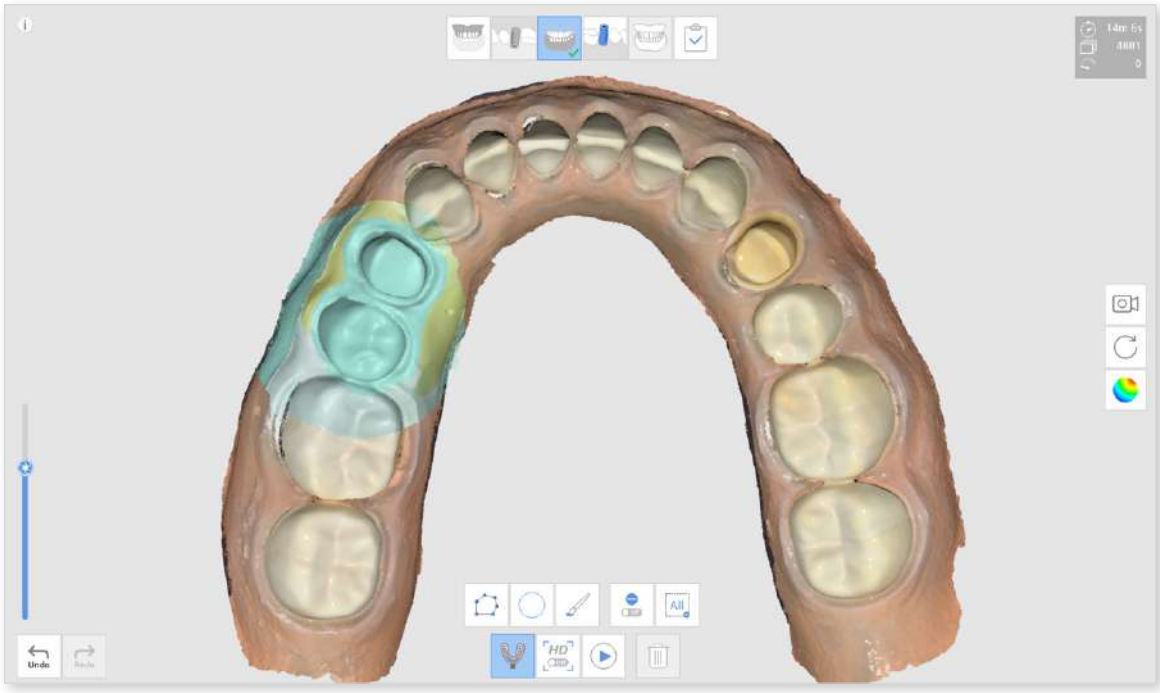


④ Scan the impression model the for marked area. The impression data will be aligned with intraoral data automatically.

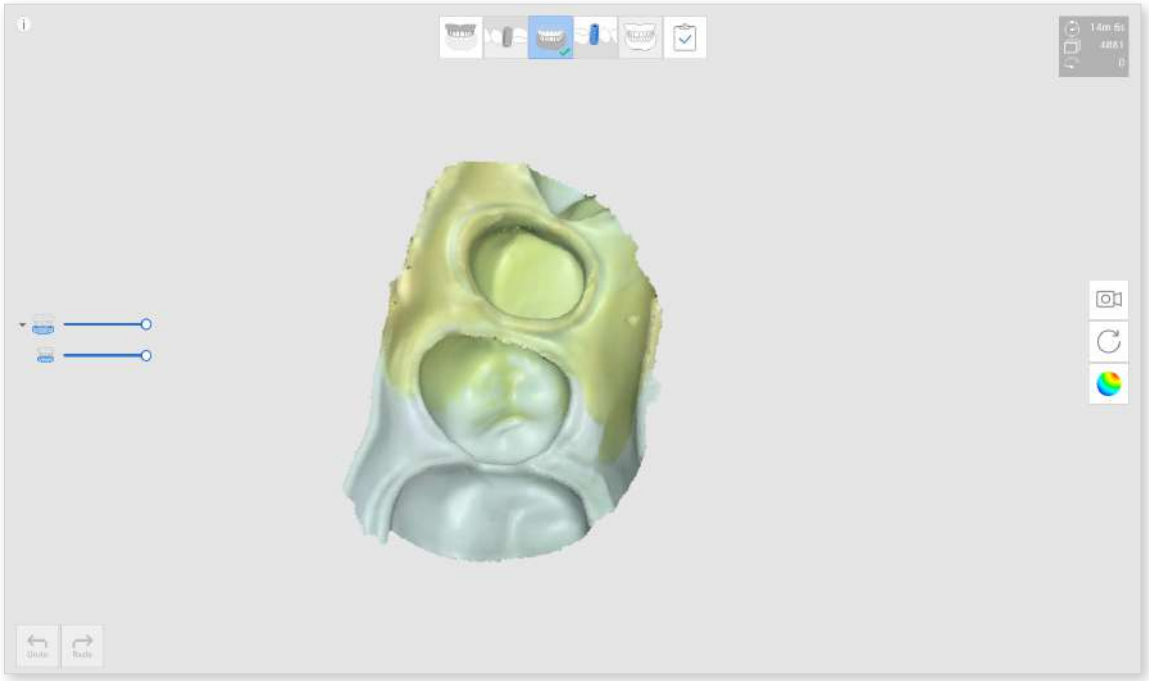
How to Edit Impression Data

When impression data is taken, the unnecessary area has to be removed before completing the case.

For example, if the impression data is taken like the image below, unnecessary data from the impression scan should be removed.



① Run the trimming function in impression scan mode. The impression data will be shown on the Model View screen.



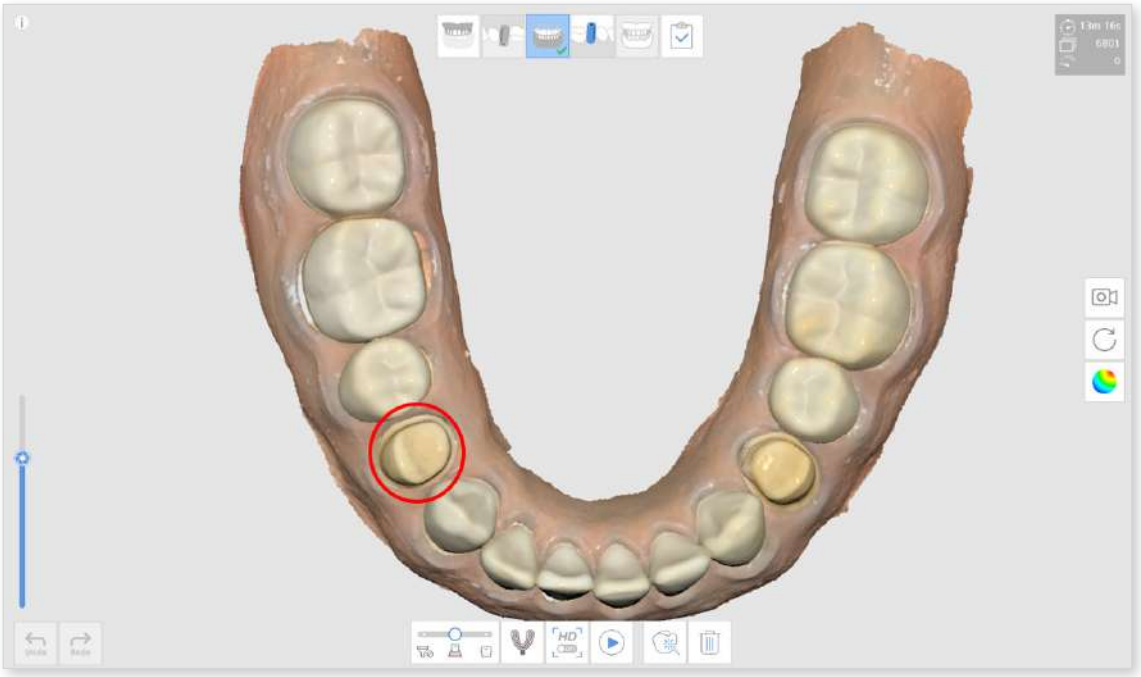
② Delete any unnecessary areas in the impression data.

③ The result will appear as shown below.

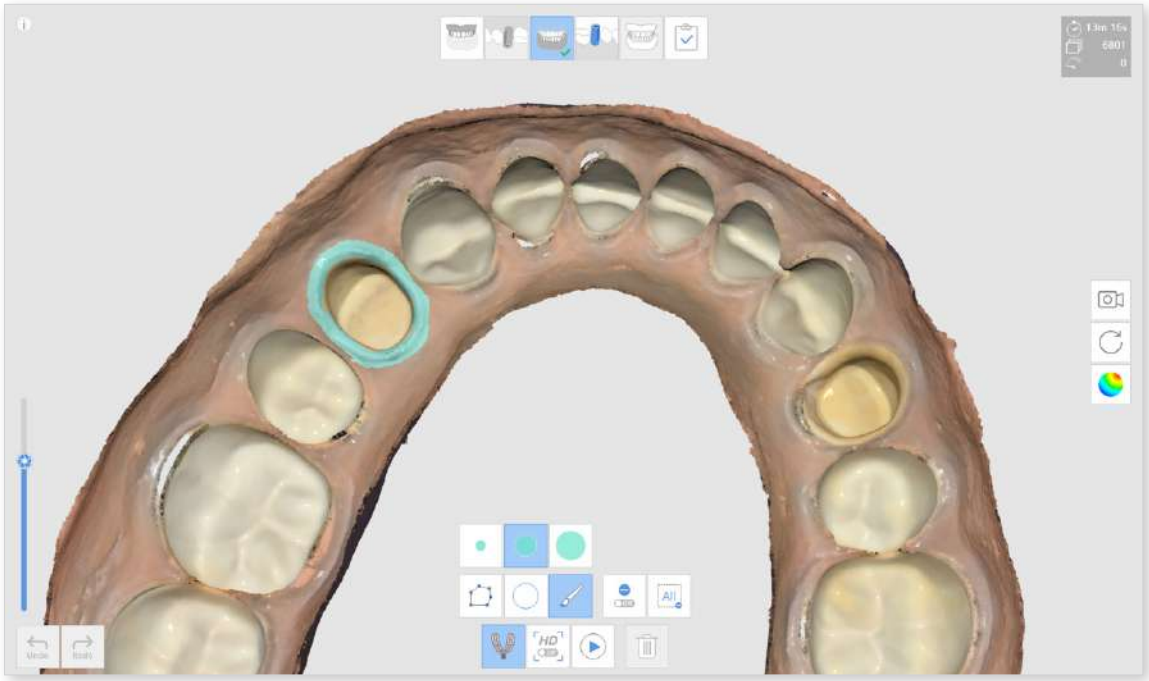
How to Use Impression Scan

① Replace the margin of intraoral data with impression data.

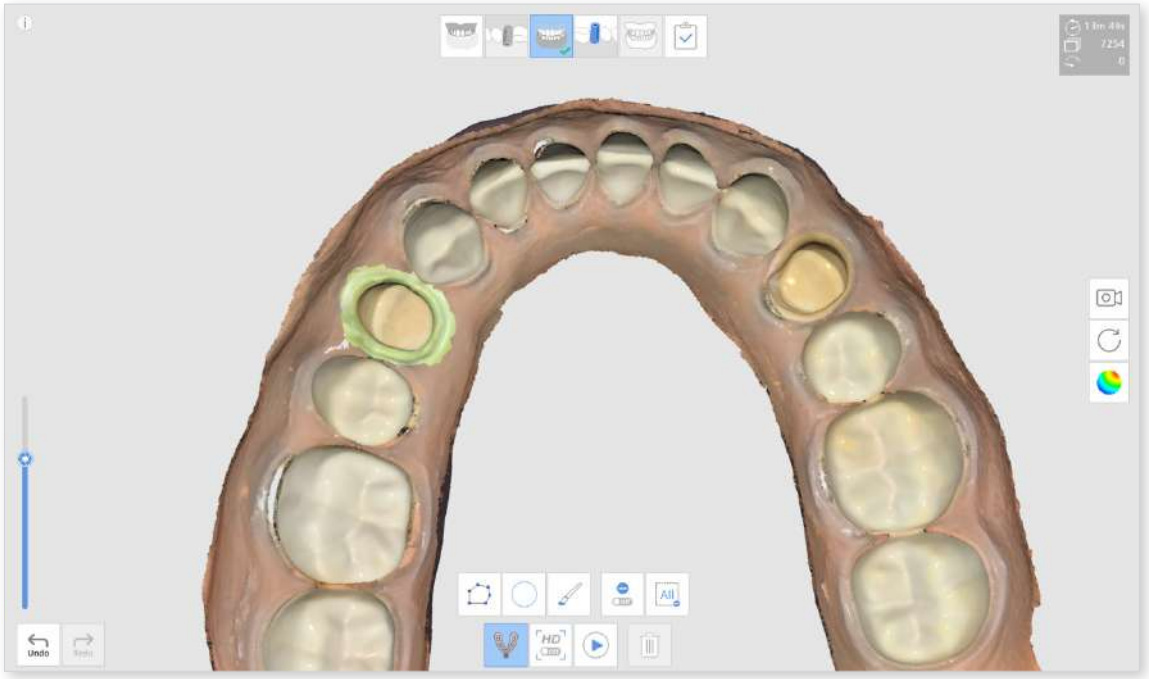
② Scan base model.



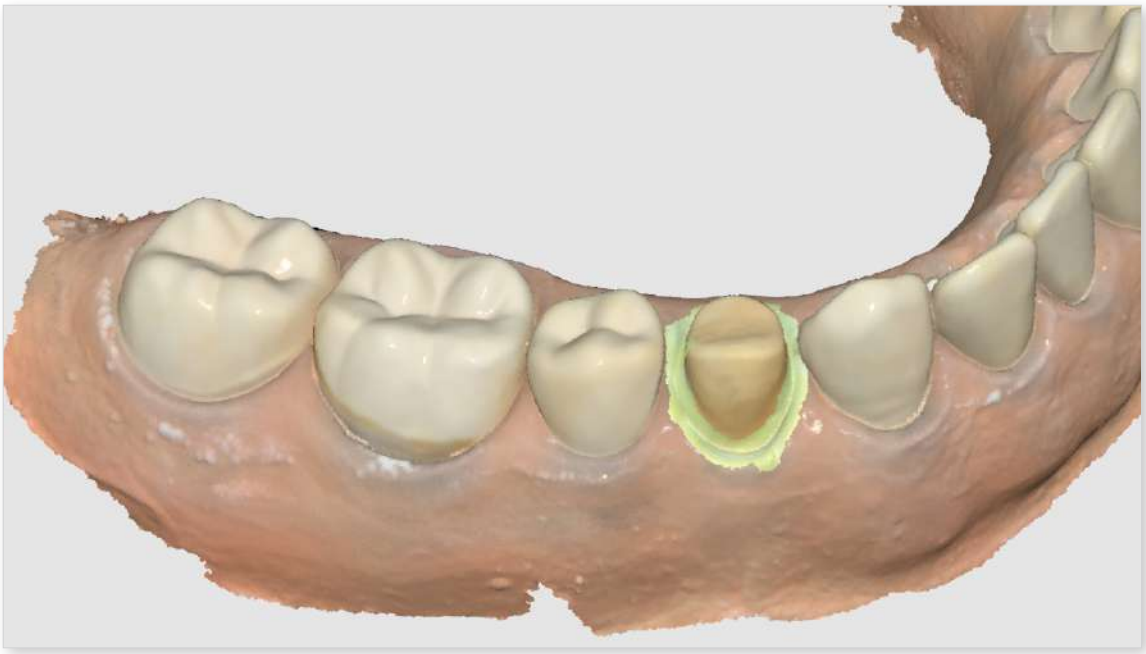
③ Turn on “Impression Scan.” Then, mark the area of interest. In this case, the margin area is marked.



④ Acquire the impression data.

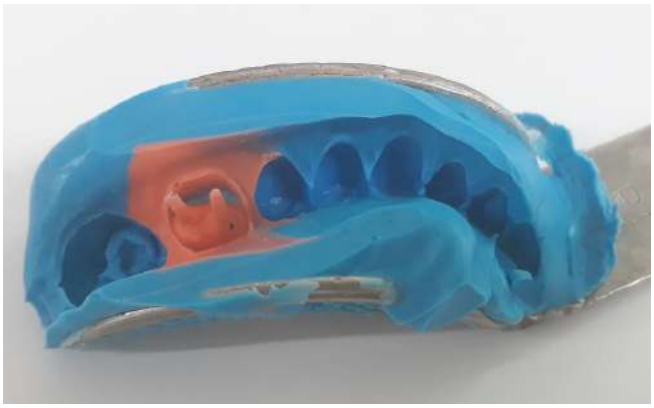


⑤ The result will appear as shown below.



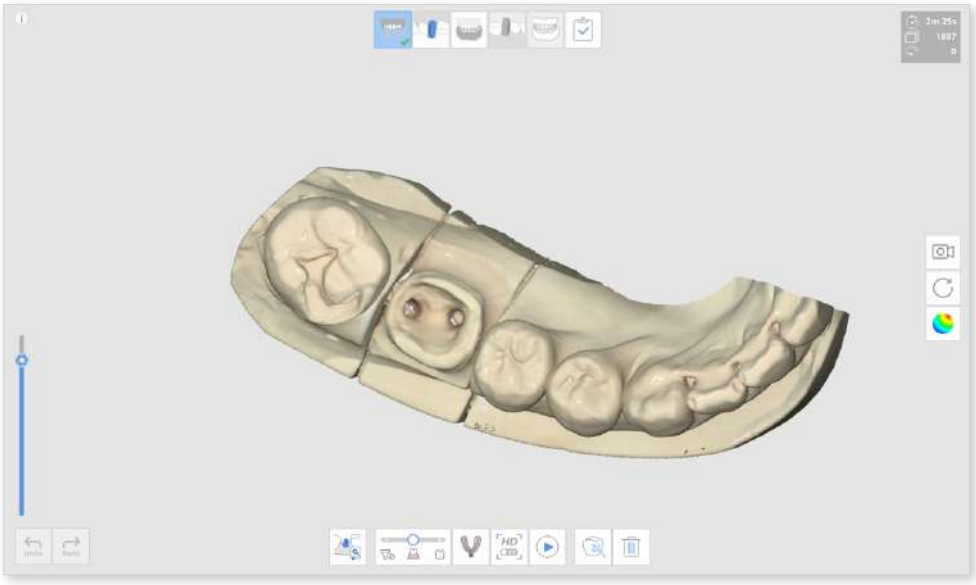
Post & Core Case

In some cases of Post & Core, it is very difficult to get the data for the post area due to the area being very deep and hard to scan. The “Impression Scan” is useful for these cases.

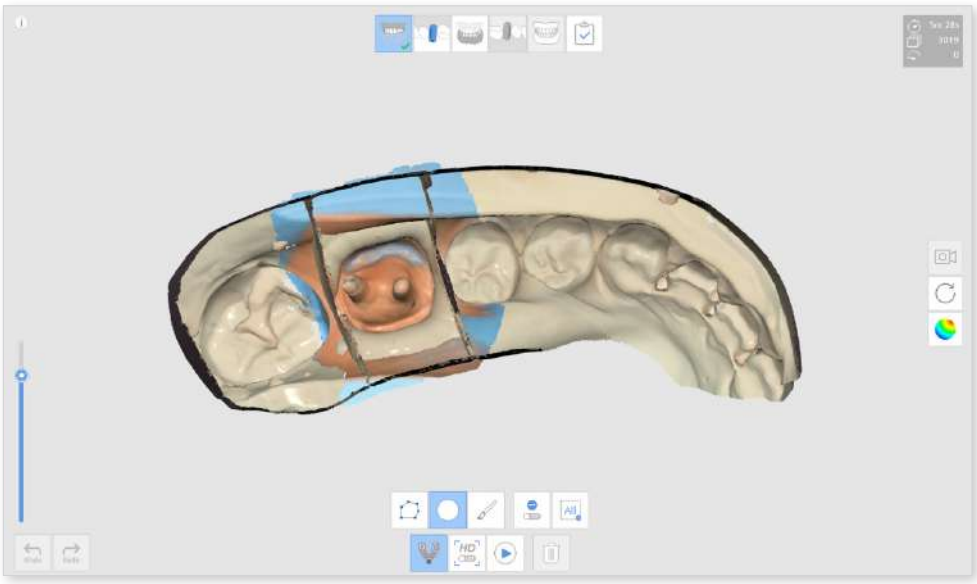
Base Model	Impression for Post
	

How to Use

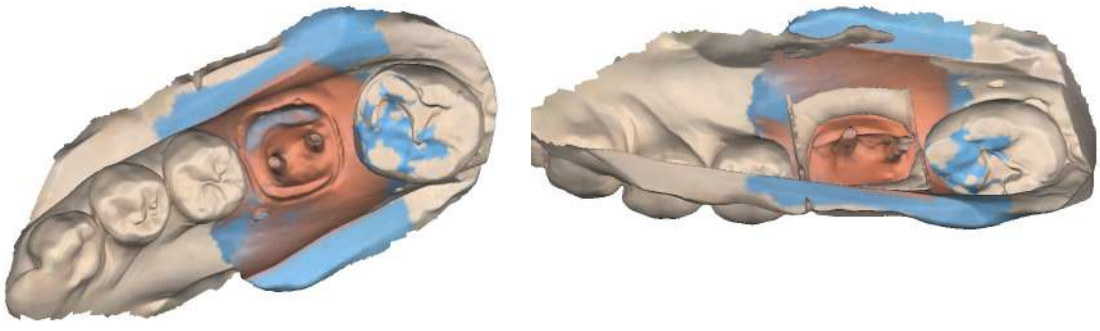
① Scan base model. The post area is deep and the scan did not proceed normally.



② Turn on “Impression Scan” and scan impression model.



③ The result will appear as shown below.

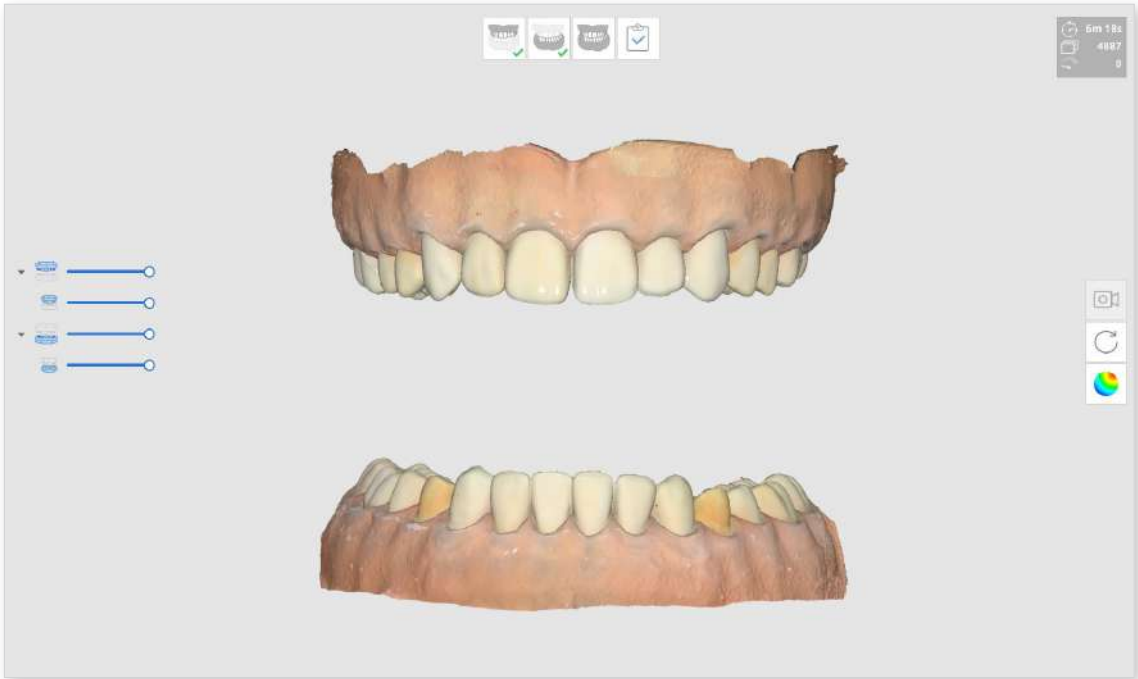


Occlusion Case

Use the “Impression Scan” for occlusion alignment.

How to Use

① Scan the maxilla and mandible.



② Turn on “Impression Scan” in the Occlusion stage. Then, get occlusion data using the impression model.

In this case, the user should take the impression model from all the angles for each bite.

High Resolution Scan is available during impression scan.

When impression data is acquired with high resolution, it will be shown with different colors if the model rendering is set to Texture Off.

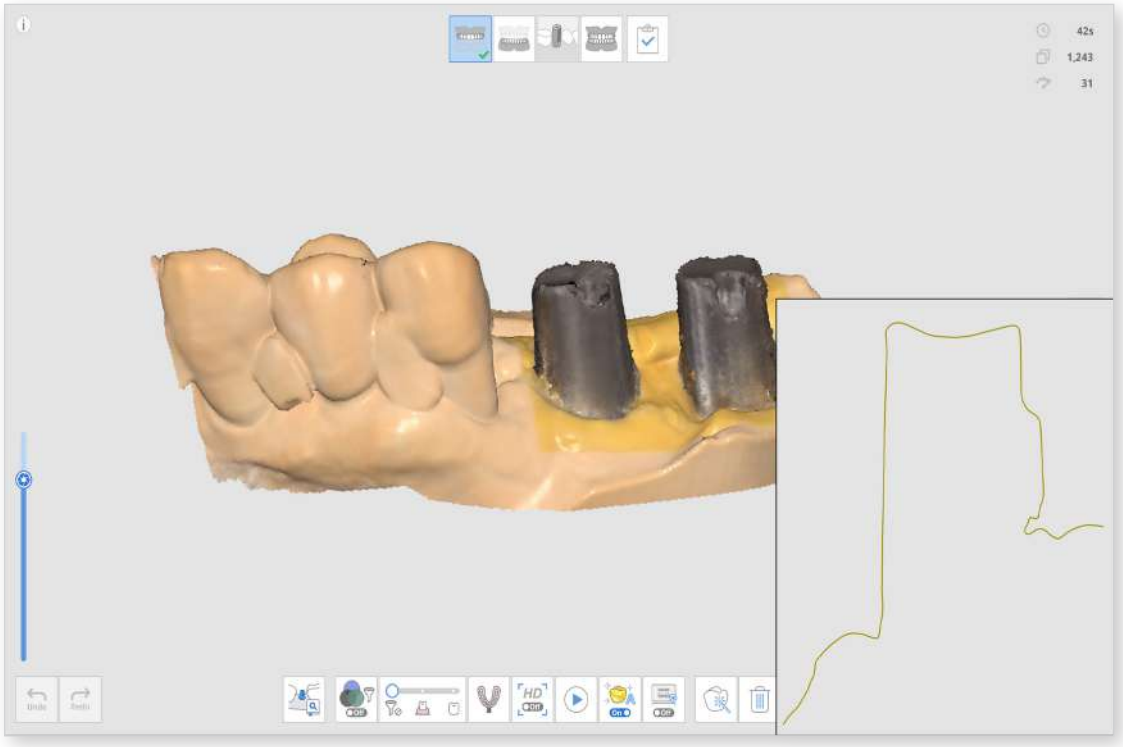
A.I. Abutment Matching

	Manages custom abutment libraries. This library data is aligned automatically with the scan data, minimizing the need to scan difficult-to-reach areas. The library data can be shared for further processes, such as design.

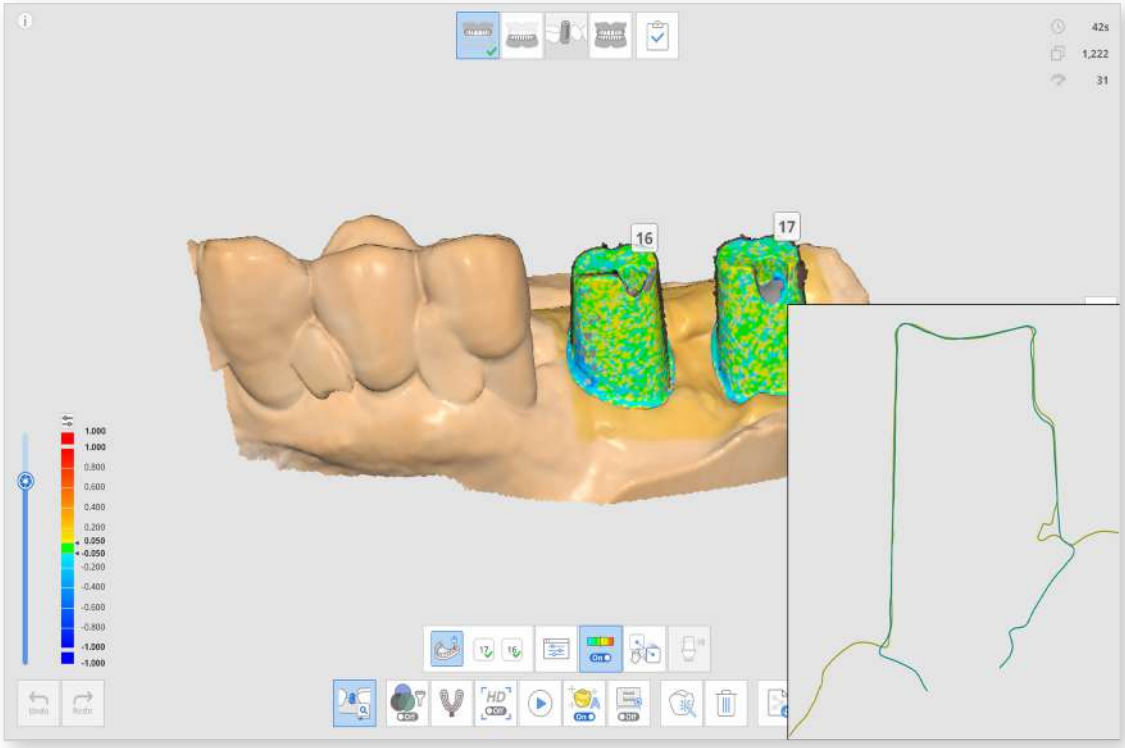
The “A.I. Abutment Matching” feature is located at the bottom of the maxilla/mandible scan stage screen.

You can register custom-made abutments or ready-made abutments with adjusted length, angle, etc., in the library to align or replace the scan data.

Use the library to substitute acquiring data for areas that may be difficult to reach, such as abutment margin areas located below the gingiva or areas too close to the adjacent teeth. You can acquire abutment scan data more accurately and comfortably this way.



<Abutment data without using **A.I. Abutment Matching>**



<Abutment data using “A.I. Abutment Matching”>

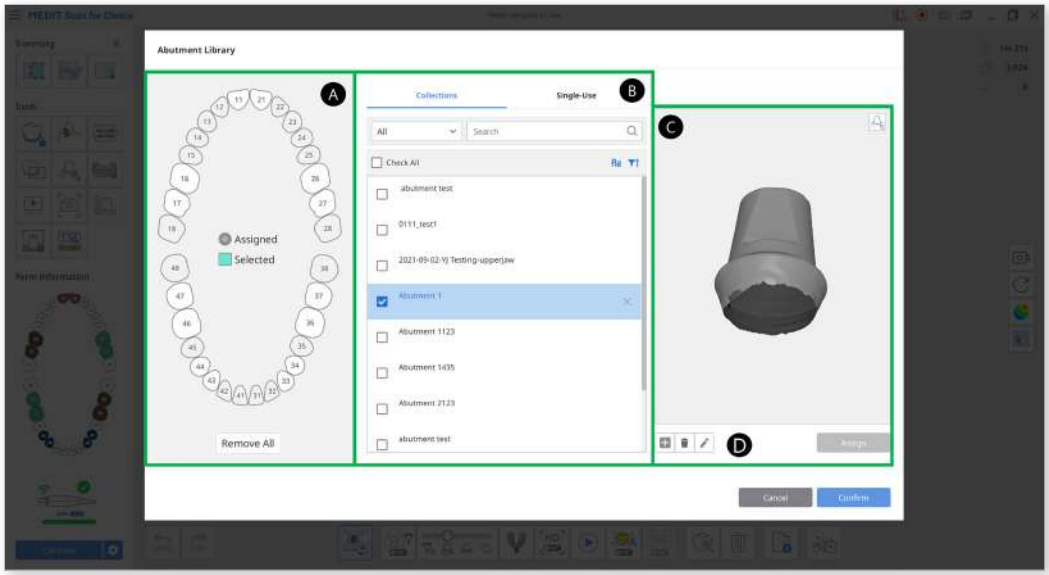
Toolbox

	Base	Selects the base for treatment.
	Tooth Number	Selects the tooth number for treatment.
	Manual Alignment	Performs the alignment between the library data and scanned data manually. One point and three point alignments are available.
	Define Library	Defines library data for each tooth and manages the library data.
	Cut Abutment Manually	Cuts the abutment to adjust the height manually.

Manage Abutment Library

	Provides various tools to manage the library.

Abutment Library Dialogue Window



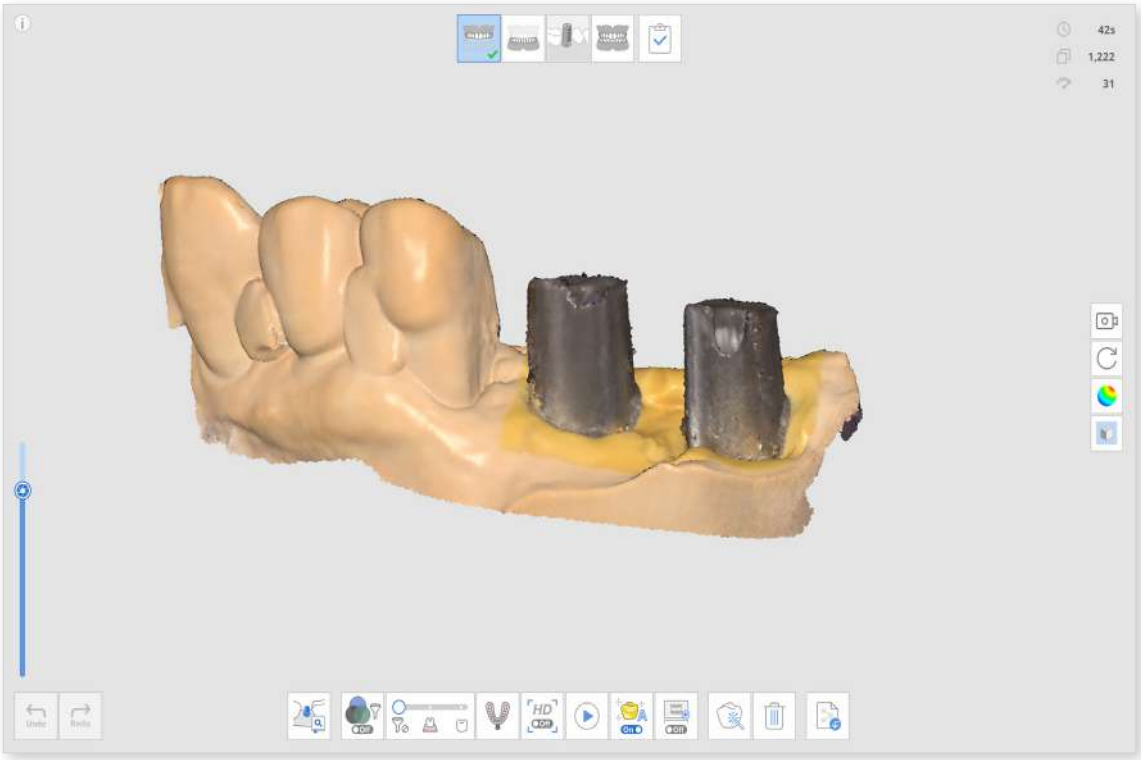
A. Select Teeth
B. Select Library
C. 3D Viewer
D. Management Tools

Toolbox

	Search	Allows the user to search for an item.
	Add Library	Adds a new library. .obj, .ply, and .stl are available.
	Delete Library	Deletes the selected library from the list.
	Rename	Changes the name of the library.
	Remove All	Unassigns the library for the all teeth.

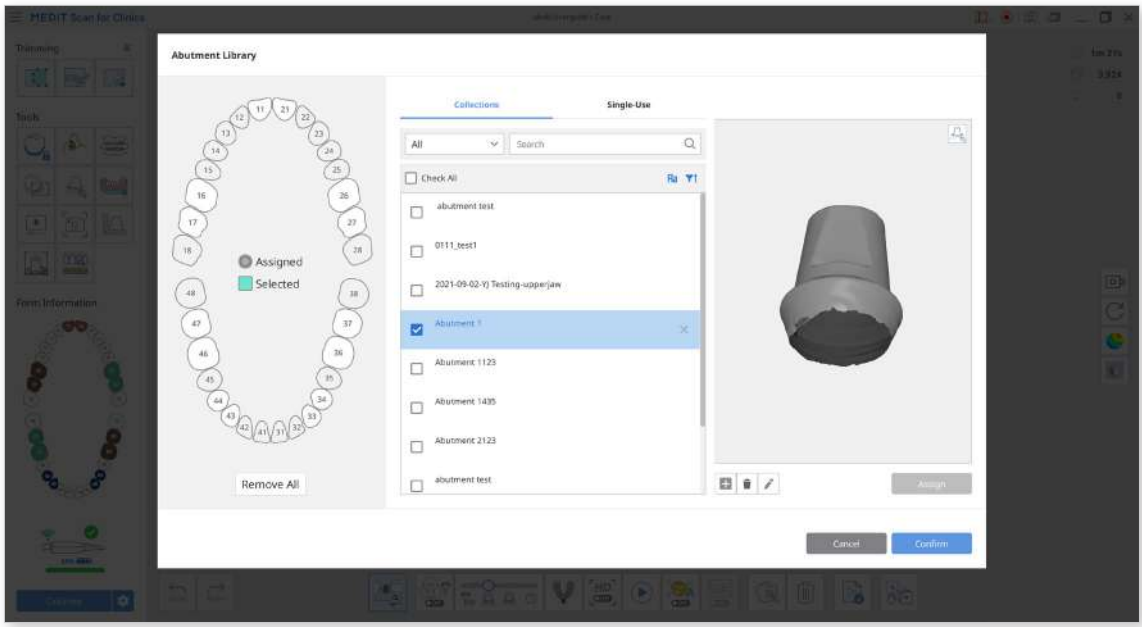
How to Use the A.I. Abutment Matching Feature

① Acquire data in the maxilla/mandible stage.



② Click the “A.I. Abutment Matching” button located at the bottom.

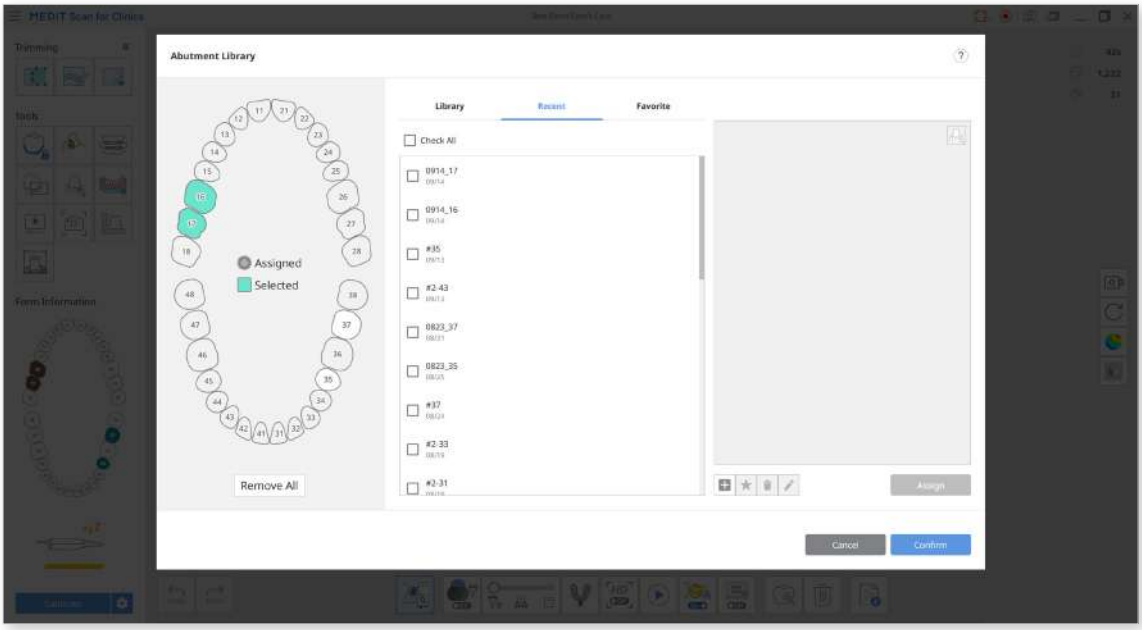
③ Select the tooth and library you wish to assign from the pop-up “Abutment Library” dialogue window. You can select multiple teeth by clicking or dragging the left mouse button.



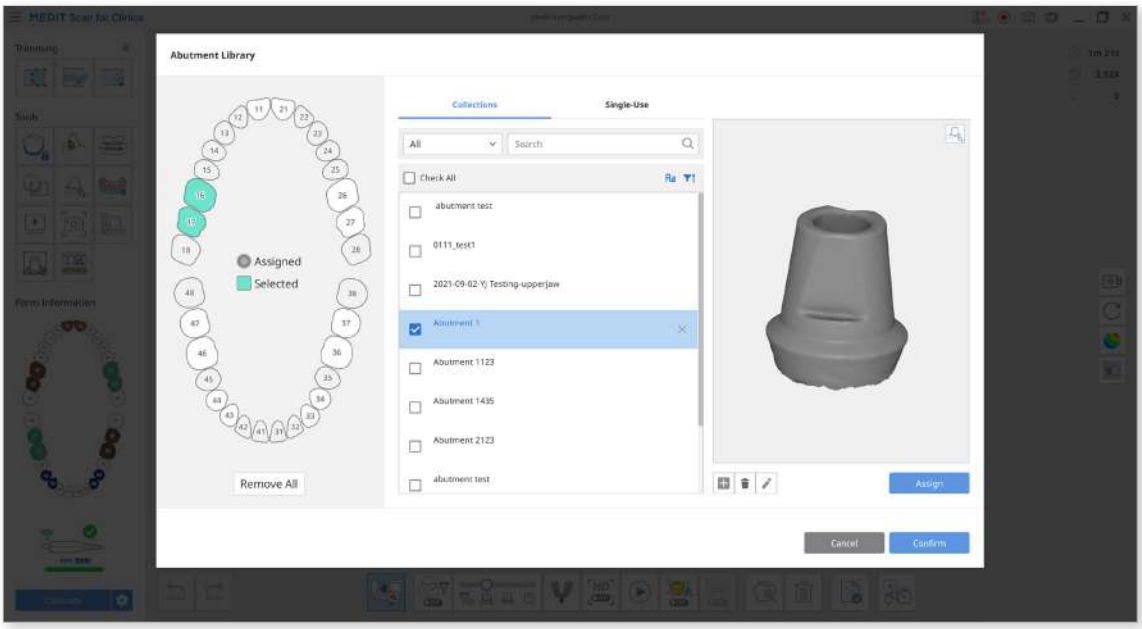
④ The following library tabs are as follows:

- **Collections:** This displays multi-use abutment libraries.
- Register abutments in “Register Abutments” or move Single-Use abutments to your Collections for reuse.
- **Single-Use:** This displays the library that will be used only for this case.

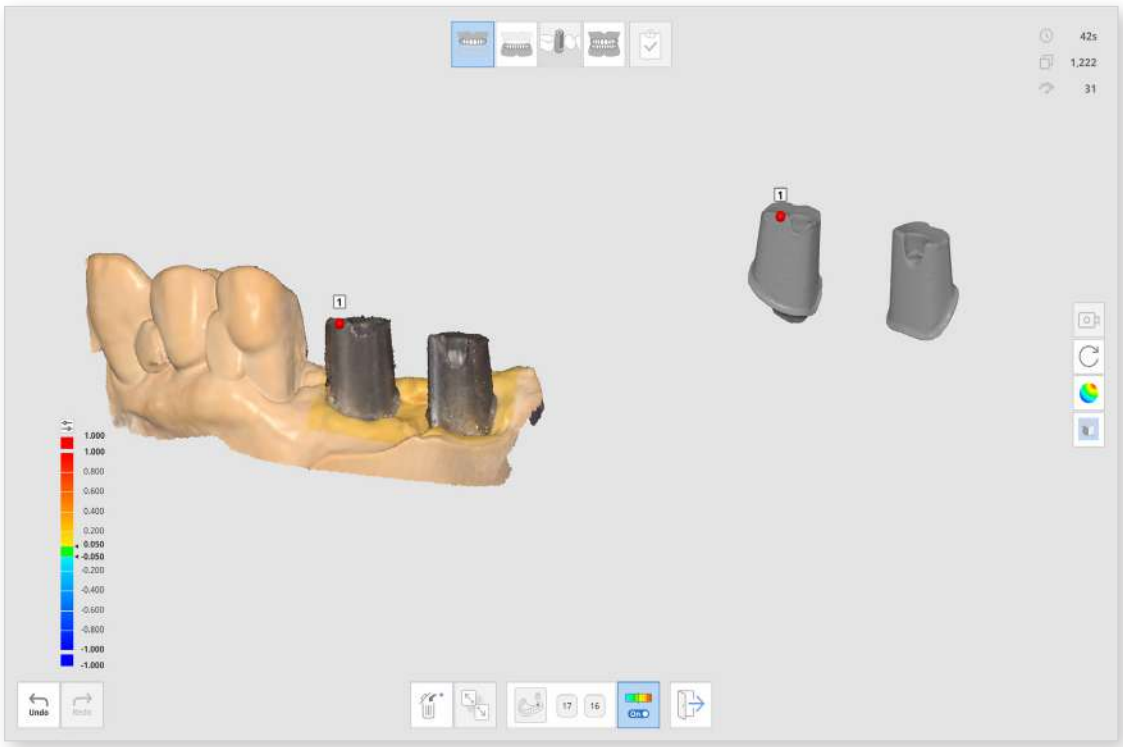
Library files that are included in this case can be viewed in Medit Link’s Case Converting Tool or viewed in other PCs via cloud synchronization.



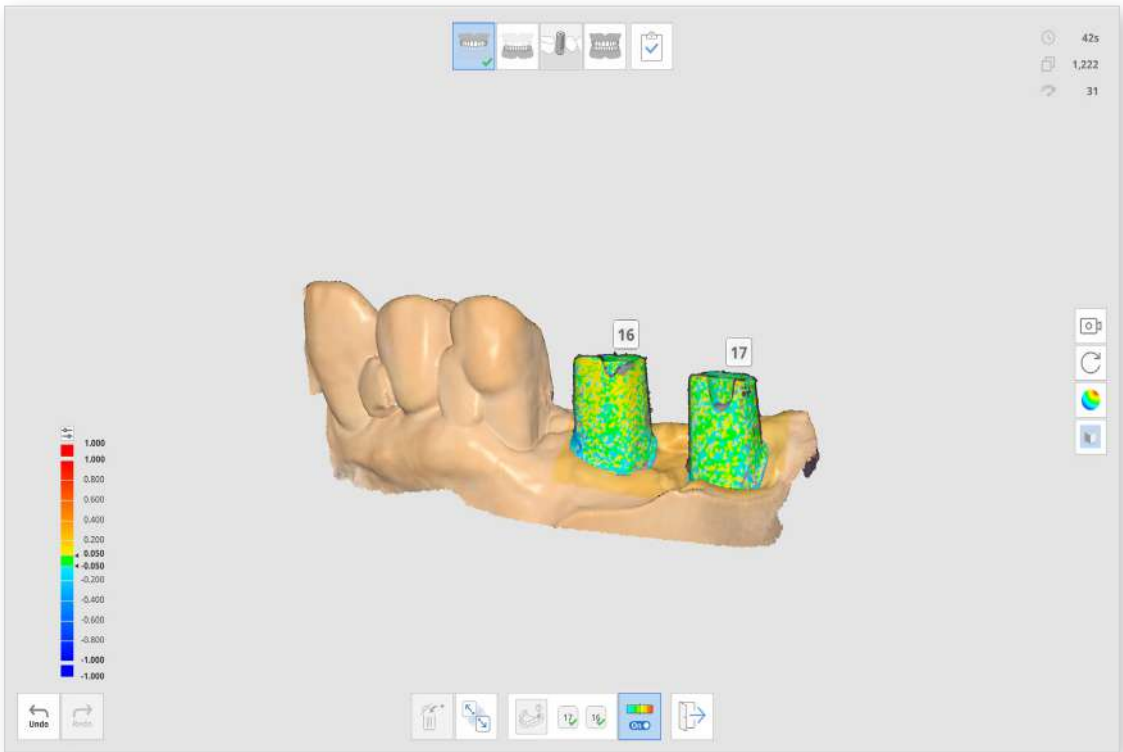
⑤ View the selected library on the 3D preview on the right side of the window. You can rotate, move, zoom in, and zoom out.



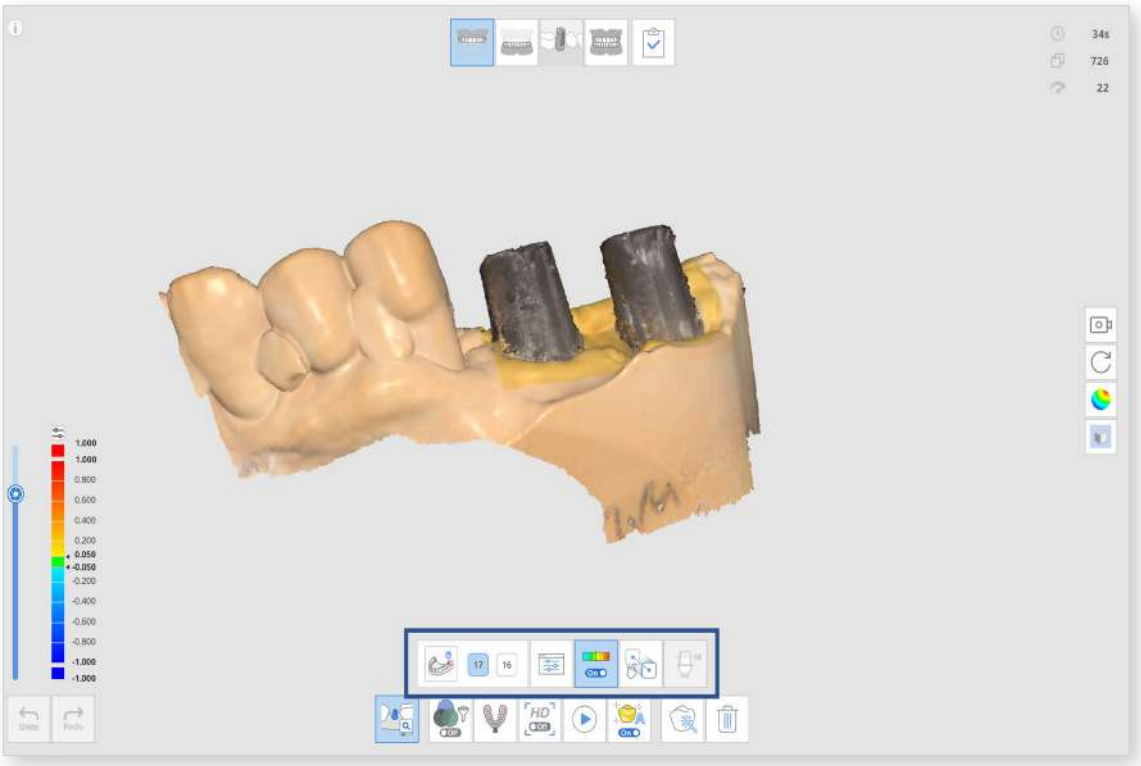
⑥ When you click the “Confirm” button, the dialogue window will close and the library assigned to the scan data and tooth number will be displayed on the screen. You can align the points on the scan data and library.



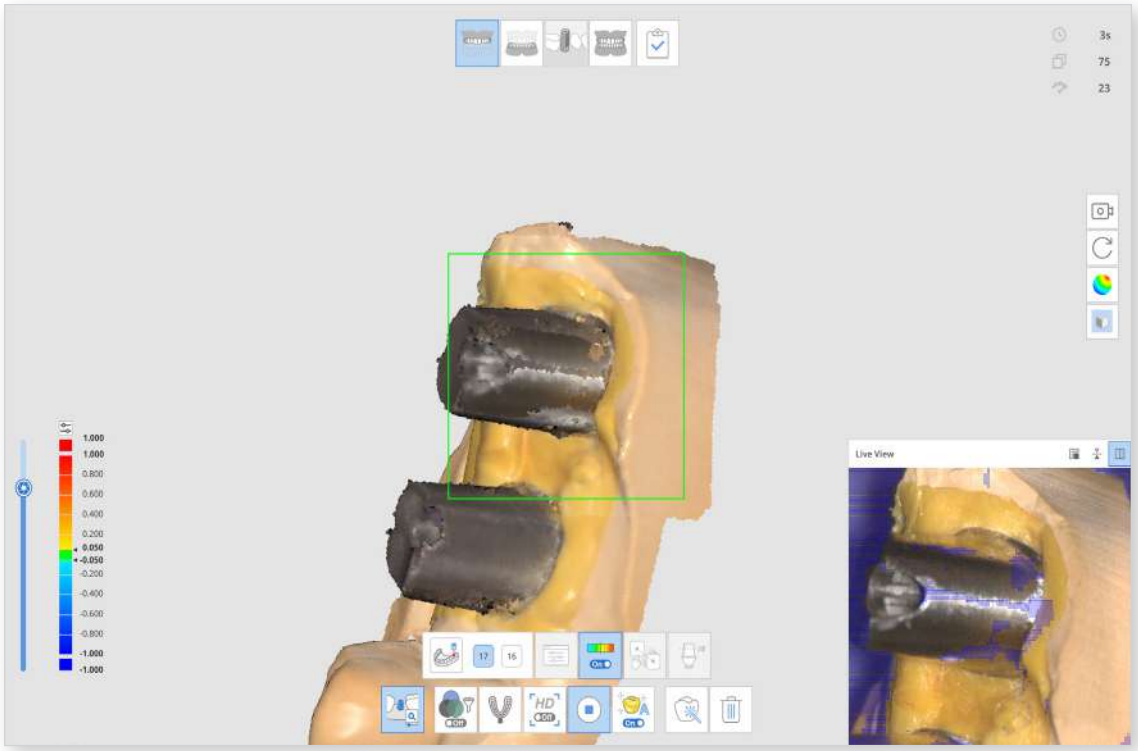
⑦ After aligning, you can check the deviation of the scan data and library through the color map.

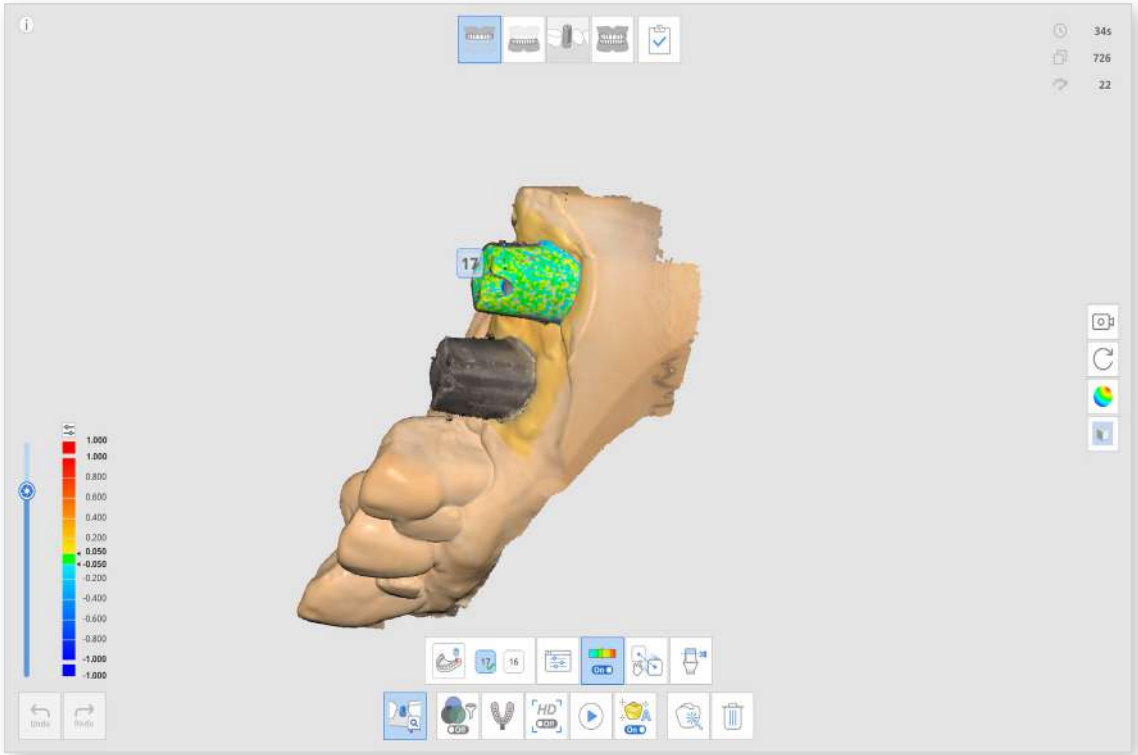


⑧ If you click **“Exit”** without specifying an alignment point, the screen will show as follows.



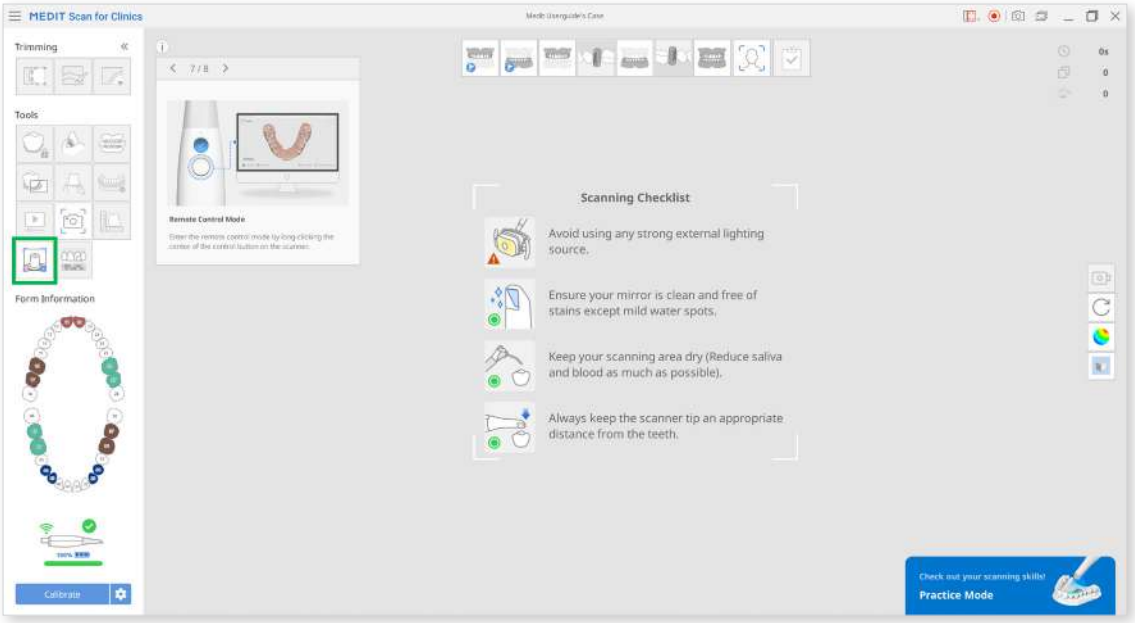
⑨ You can obtain scan data by specifying a base or tooth number. If you already have a library assigned, the library will be automatically sorted while scanning for tooth numbers.





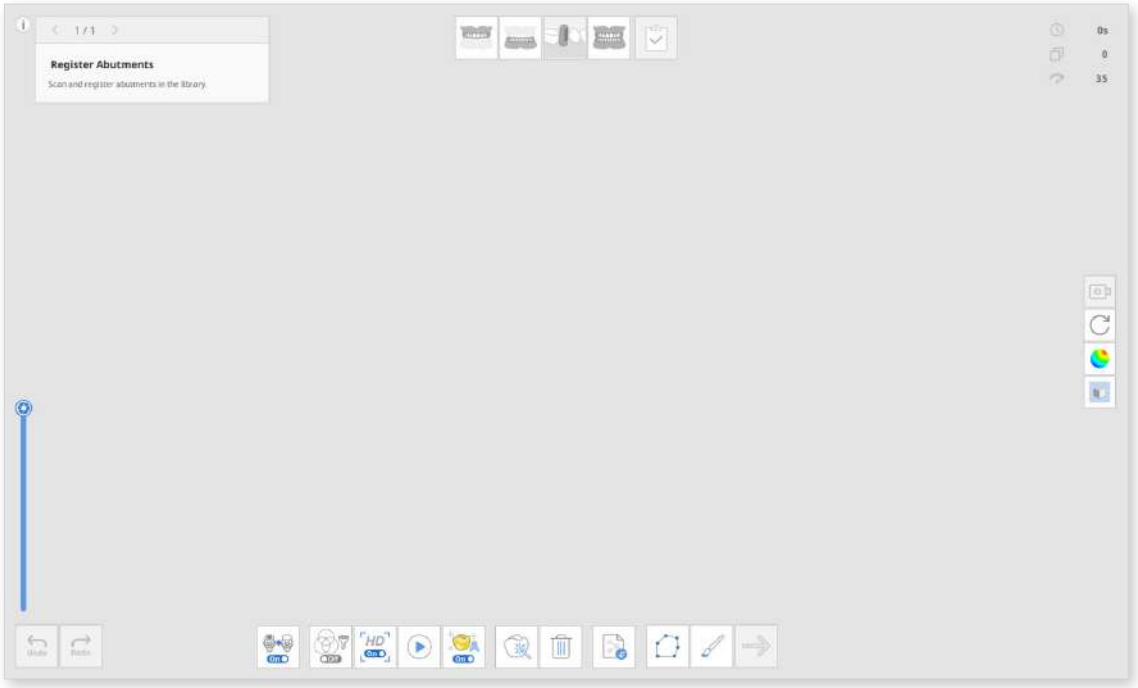
How to Use the Register Abutments

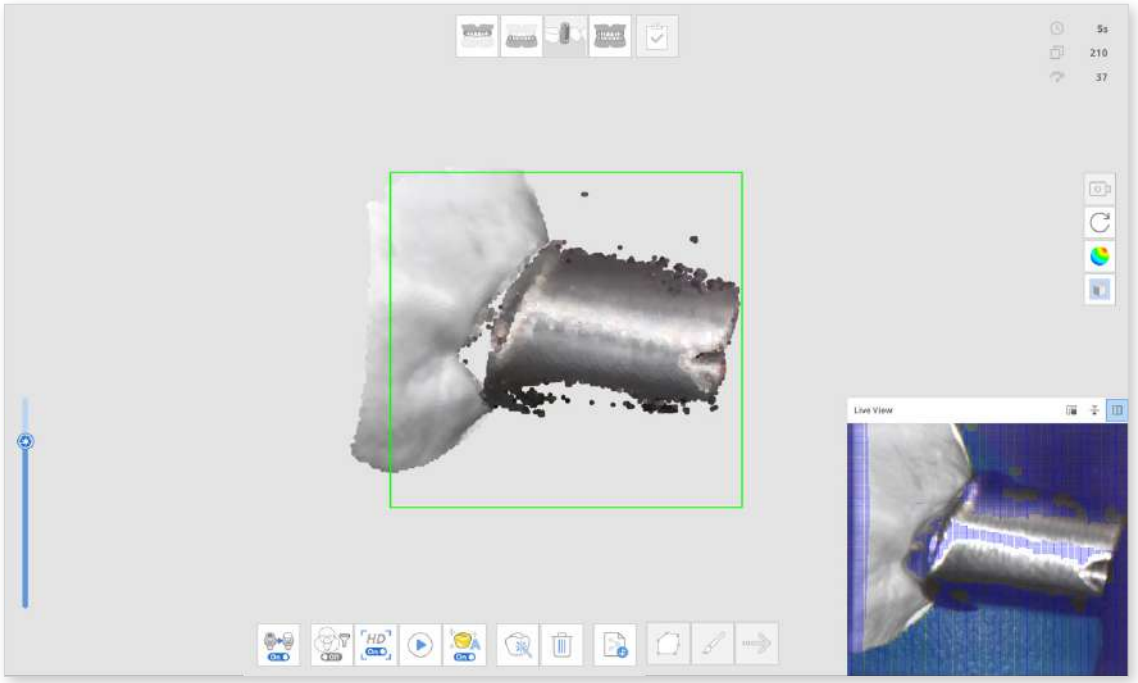
① Click “Register Abutments” located in Tools.



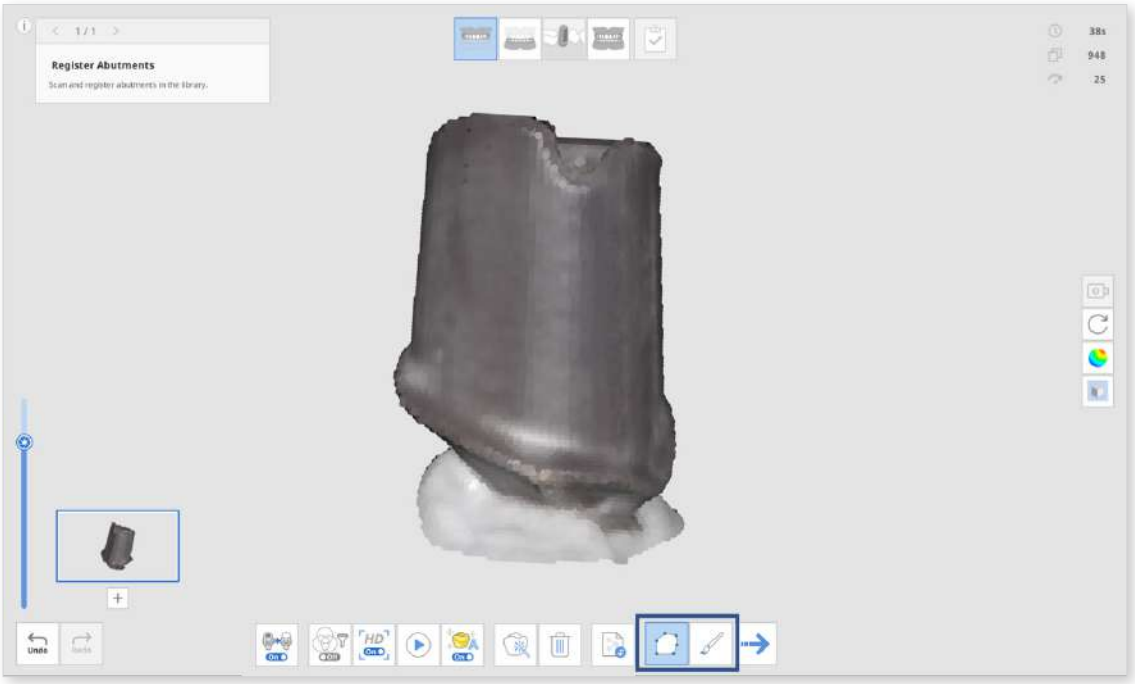
The abutment scan and edit function is located at the bottom of the screen.

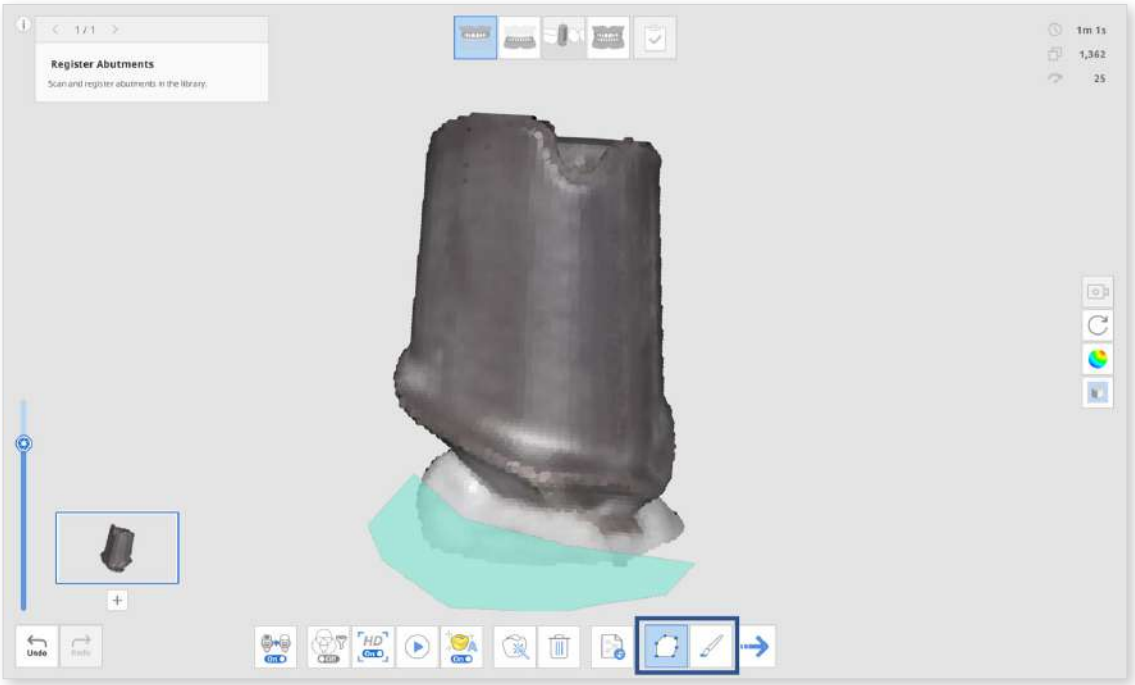
② Begin scanning the abutment.



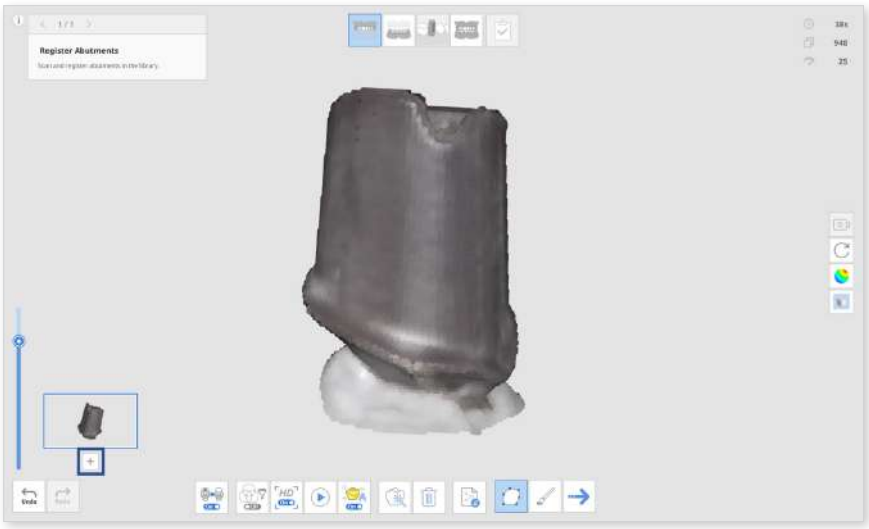


③ When you stop scanning, you can edit the data using the “Polyline” and “Brush Trimming Tools.”

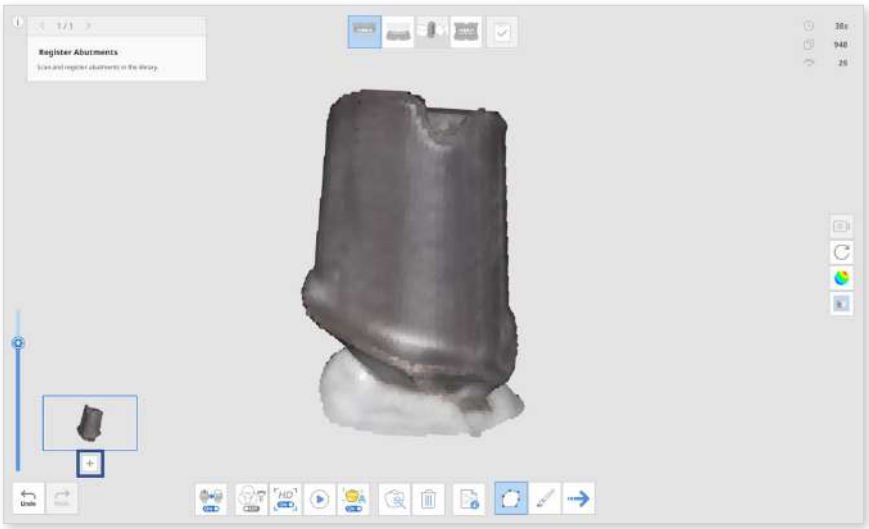


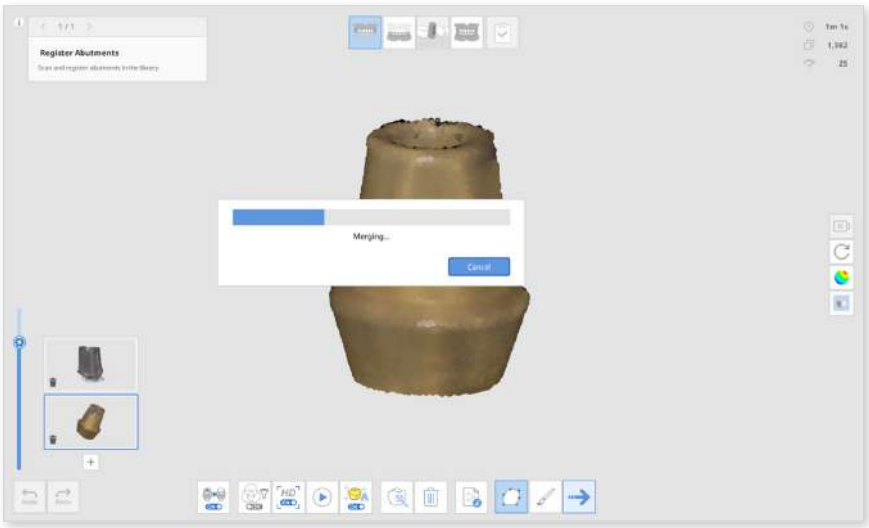


④ Click the “Add” button at the bottom of the scanned abutment thumbnail to scan an additional abutment. You can scan and register up to six abutments.

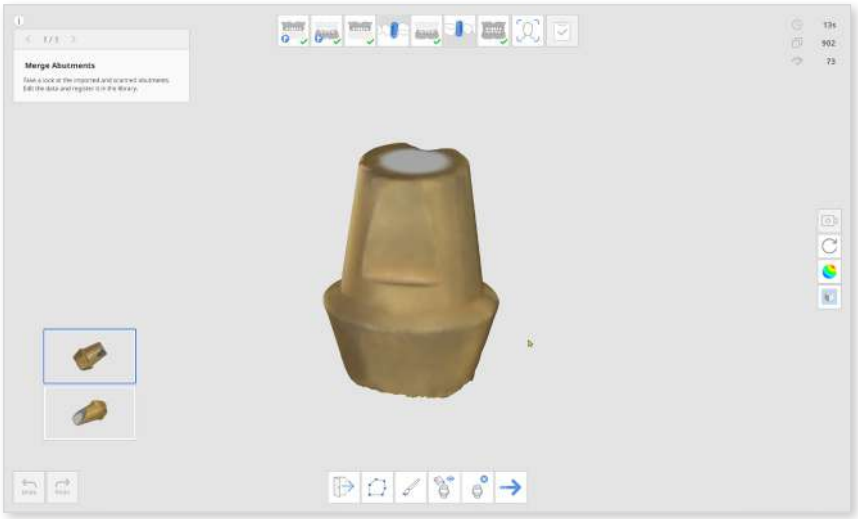


⑤ After scanning all the abutments, click “Merge Abutment” to merge the abutment data for library registration.

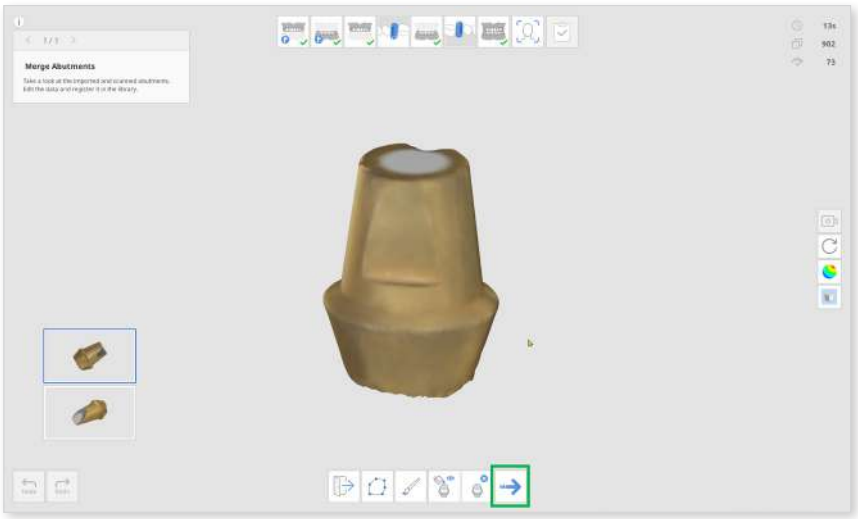


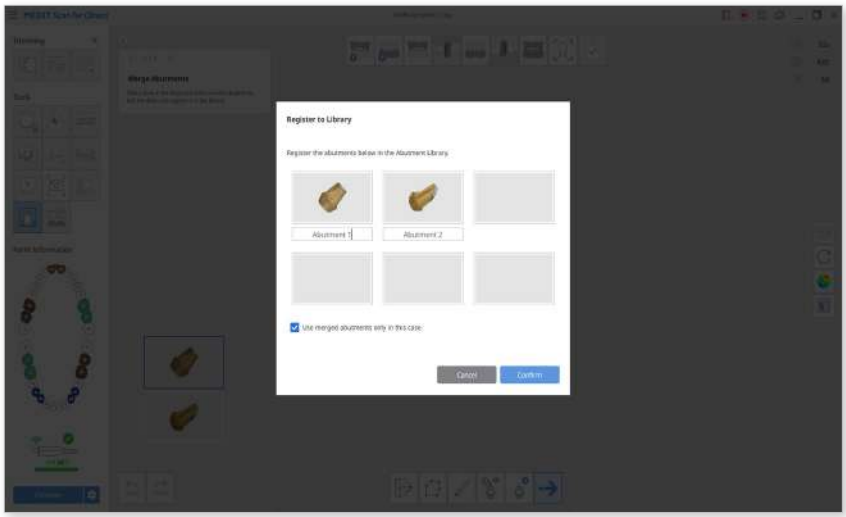


⑥ When the merge is complete, the abutment is displayed on the screen. If necessary, edit the data with “Polyline” and “Brush Trimming.”

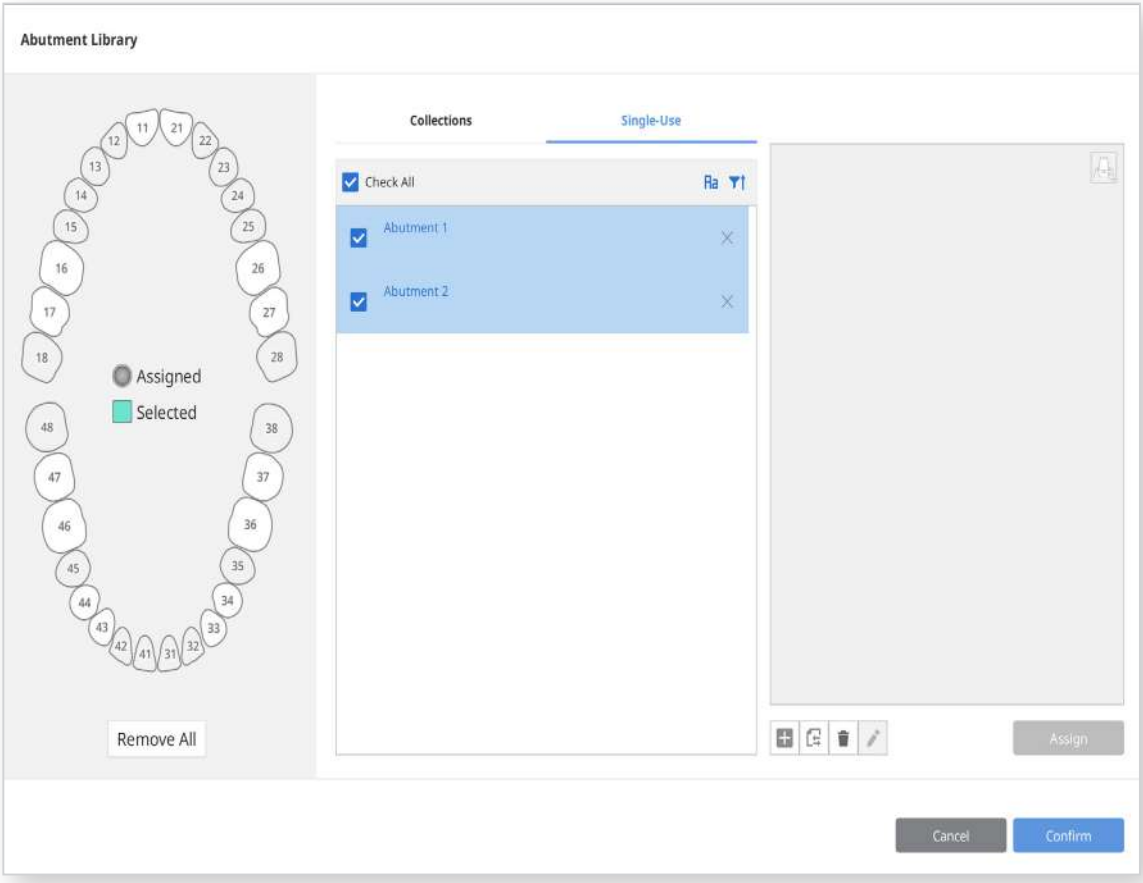


⑦ You can enter the name of each merged abutment by clicking the “Register Abutment” button.





⑧ When you have finished registering the abutments, the Abutment Library dialogue window will appear, and your abutments will have been added successfully to the library.



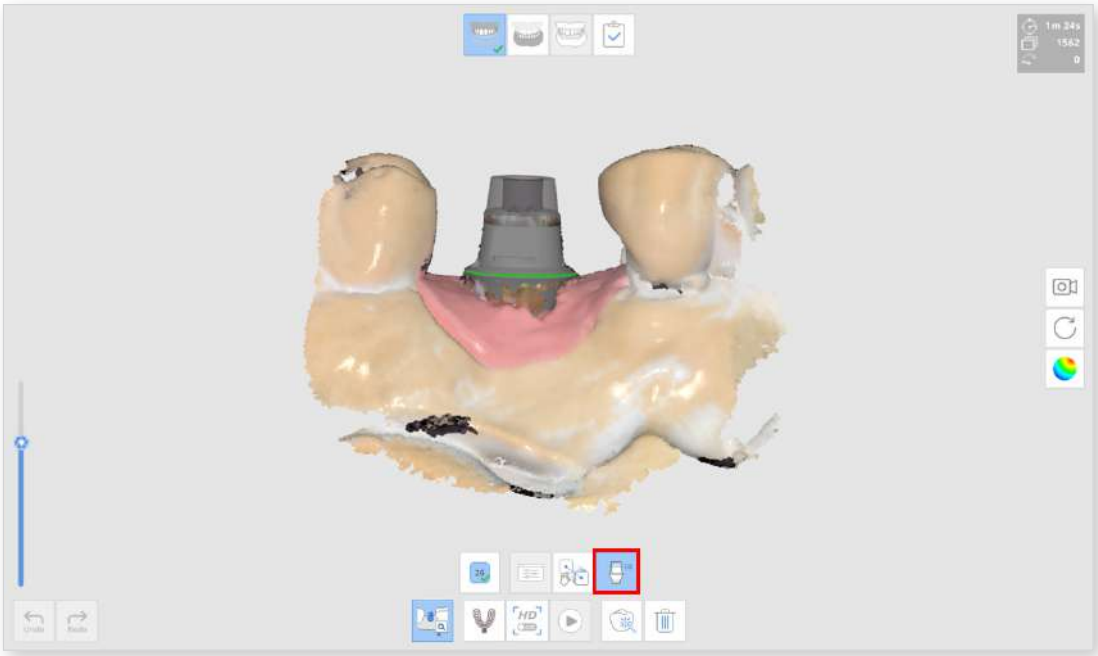
Abutment Library, Scan Data Alignment, and Margin Line Drawing

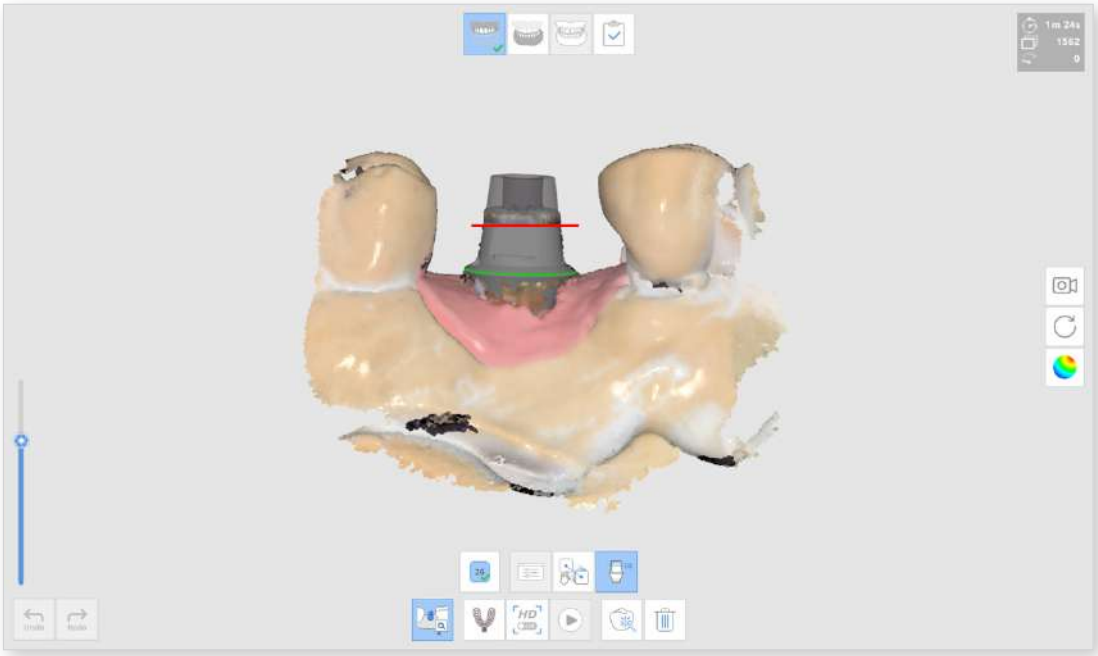
Adjust the height of registered stock abutment according to the abutment in the mouth easily. Once the margin line is drawn on the stock abutment, you can skip the margin line drawing in the lab or dental clinic.

Toolbox

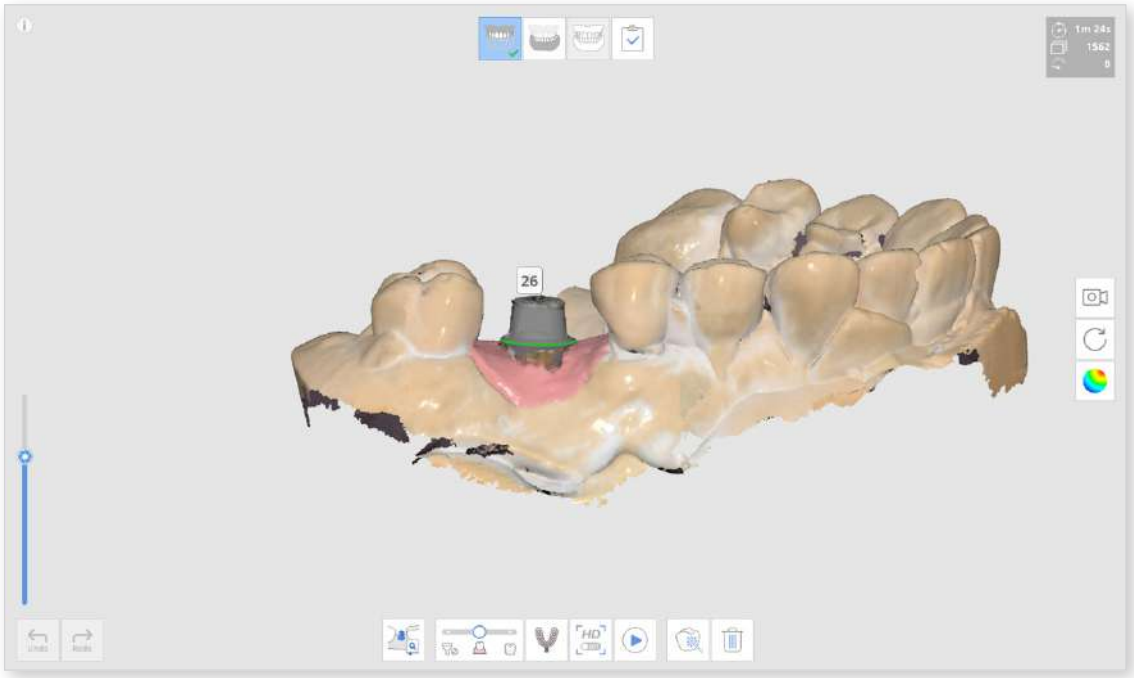
	Margin Line	Creates a margin line using tools such as “Auto Creation,” “Manual Creation,” and “Edit.”

① Adjust the height of the abutment by clicking “Cut Abutment.” The transparent data will be the abutment before cutting. You can cut the abutment again by selecting a point, dragging it to another point, and cutting the line.





② Check to see if the cut abutment is properly aligned by returning to the maxilla scan stage. You can also check the margin line.



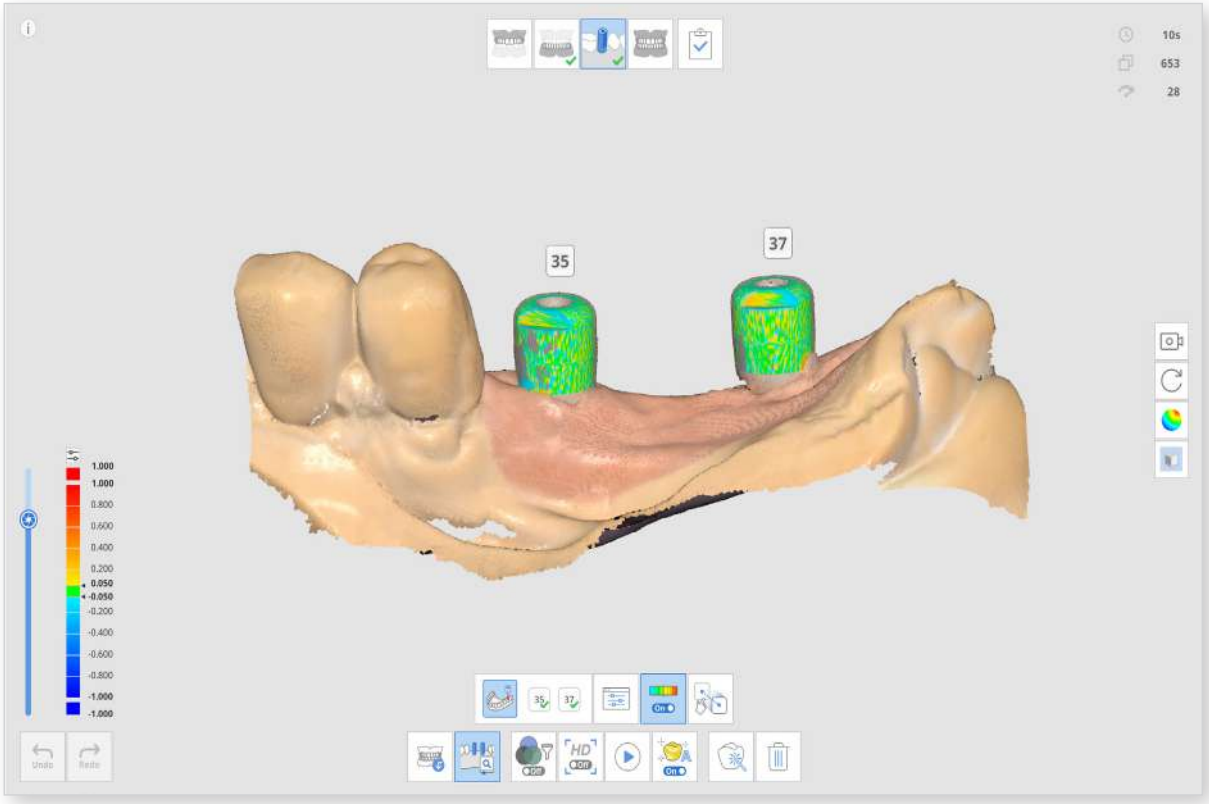
③ Click “Complete .” You user can check the processed data in Medit Link ensuring the upper and lower part of the 3D scan data and the margin line are aligned properly.

A.I. Scan Body Matching

	Manages pre-set and custom scan body libraries. This library data is aligned automatically with the scan data, minimizing the need to scan difficult-to-reach areas. The library data can be shared for further processes, such as design.

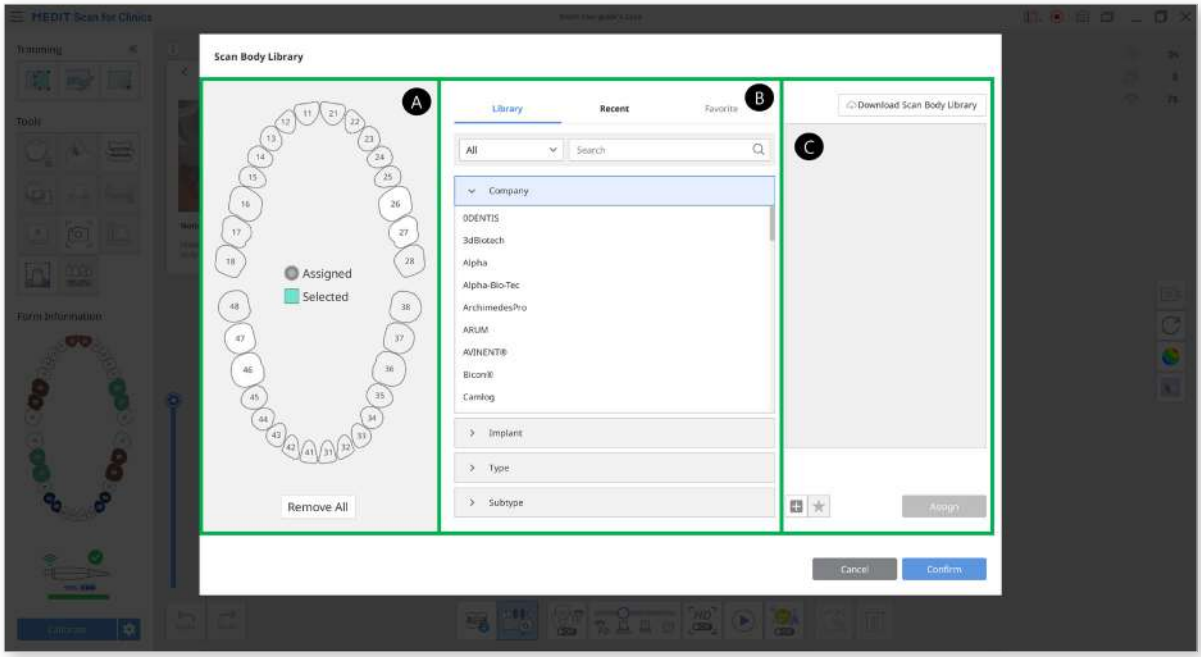
The “A.I. Scan Body Matching” feature is located at the bottom of the maxilla/ mandible scan stage screen.

Scan the scan body fastened to the implanted fixture. Arrange and replace that scan body data with the library data to reproduce the position and angle of the implanted fixture accurately.



Manage Scan Body Library

	Provides various tools to manage the library



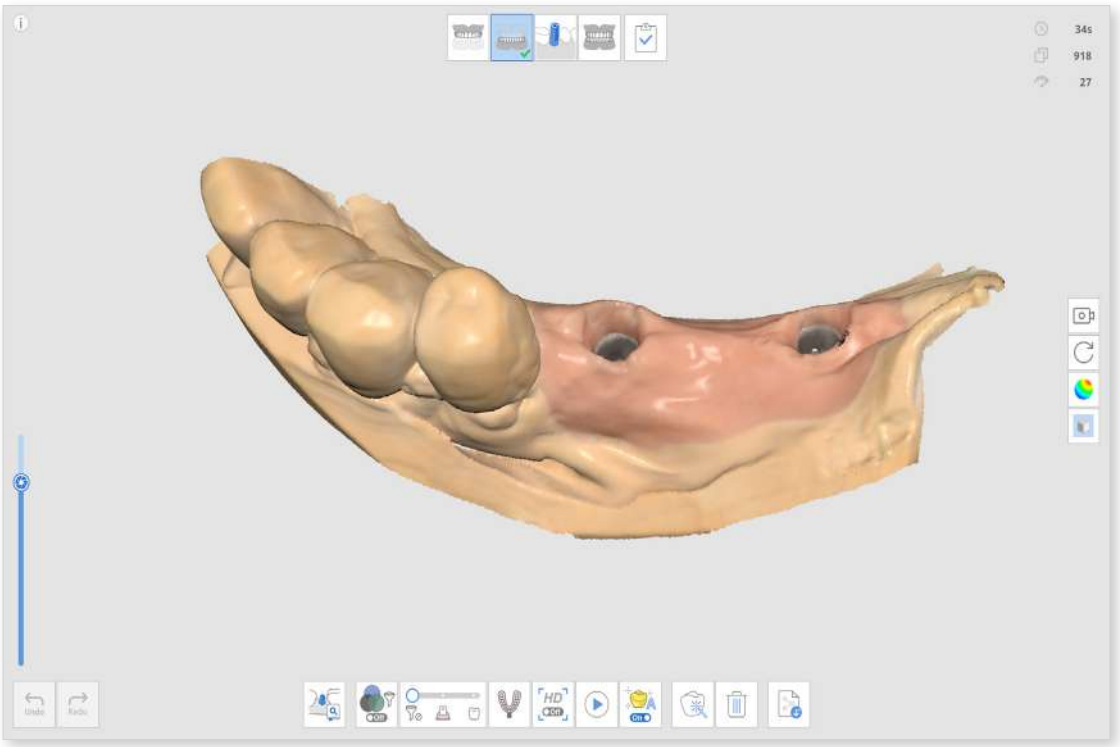
A. Teeth Select B. Select Library C. 3D Viewer

Toolbox

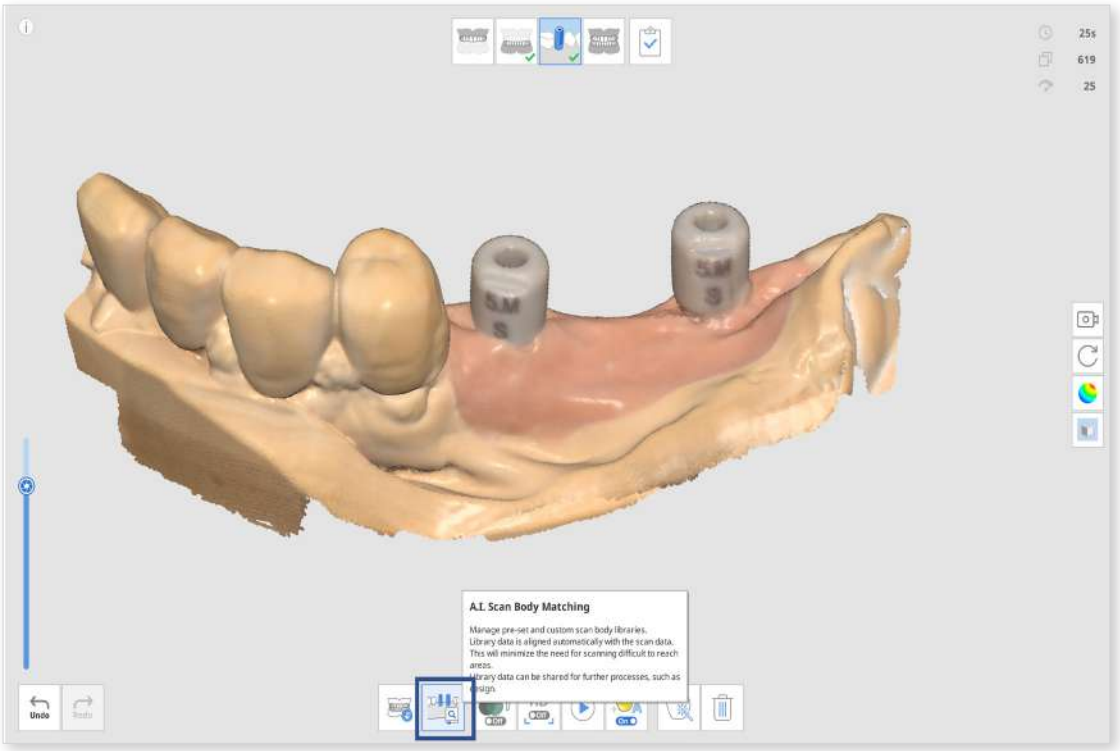
	Search	Searches for an item.
	Add Library	Adds a new library. Supports libraries which are provided as a folder.
	Delete Library	Deletes the selected library from the list.
	Add to Favorites	Adds the selected library to Favorites. User can easily find the most used items.
	Unassign All	Unassigns the library for the all teeth.

How to Use the A.I. Scan Body Matching Feature

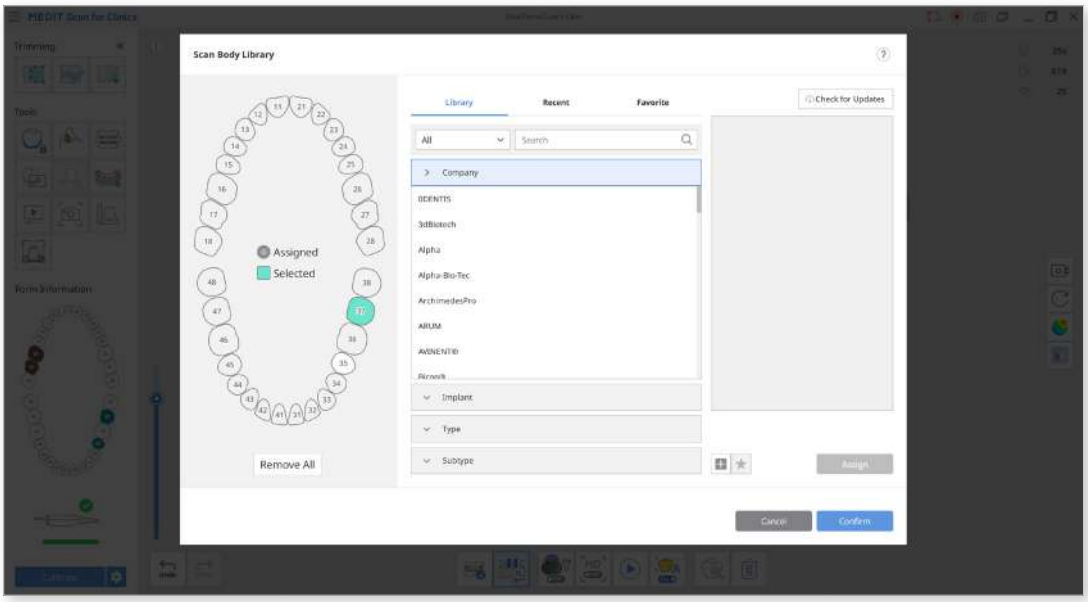
① Acquire data in the maxilla/mandible stage before fastening the scan body.



② Go to the scan body step, fasten the scan body, and obtain additional scan data. Click the “A.I. Scan Body Matching” feature located at the bottom.

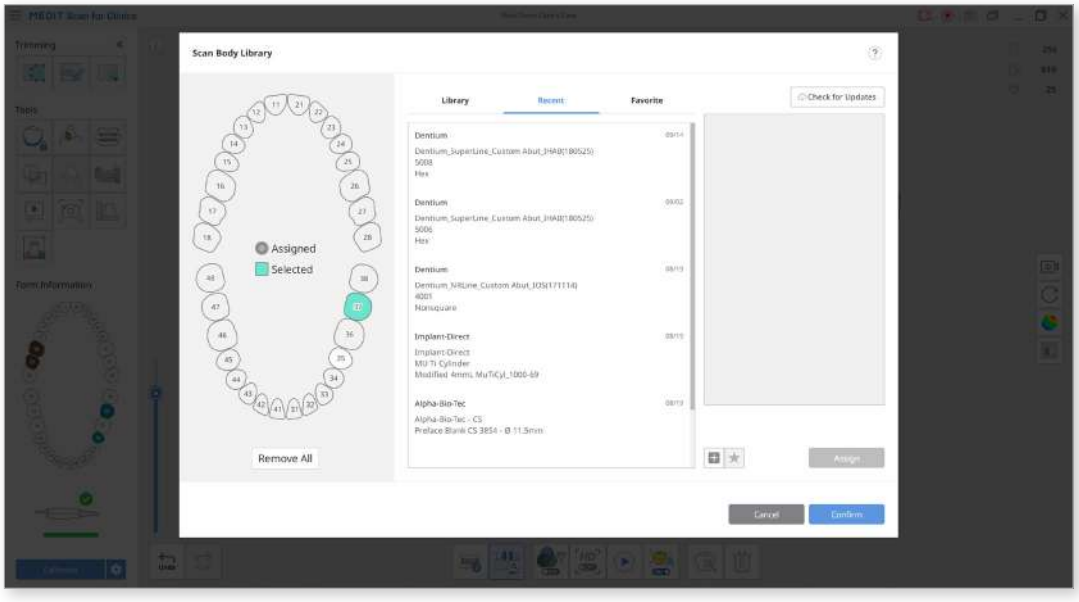


③ Select the tooth and library you wish to assign from the pop-up “Scan Body Library” dialogue window. You can select multiple teeth by clicking or dragging the left mouse button.



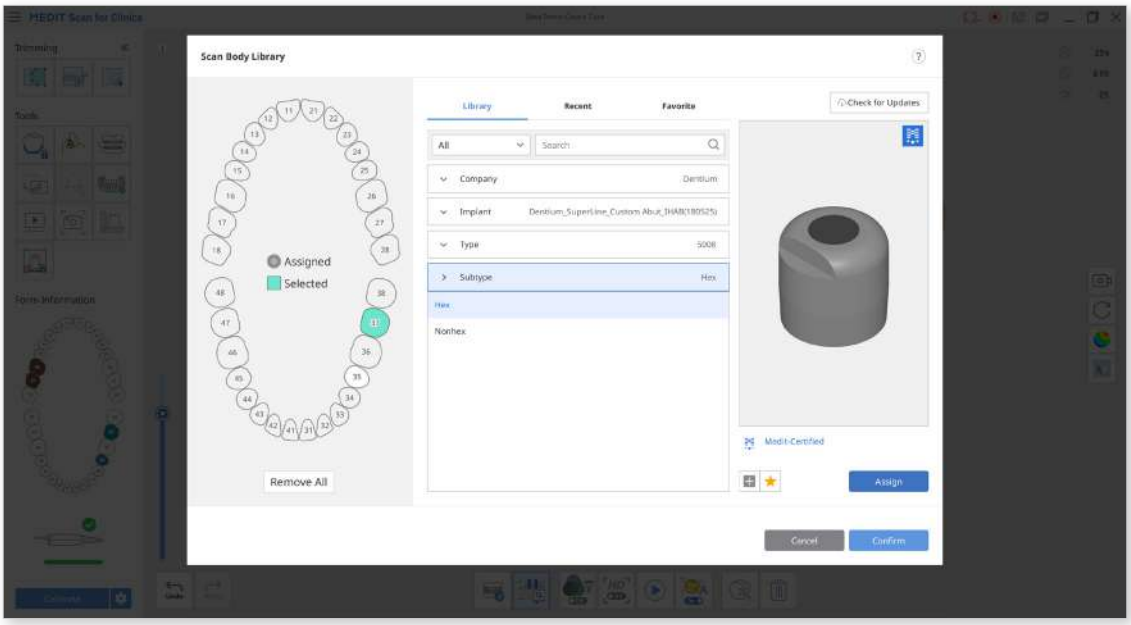
④ The following library tabs are as follows.

- **Library:** The “Library” tab displays registered scan body libraries. You can search for scan bodies by entering their registered name and delete individual or multiple abutments.
- **Recent:** The “Recent” tab shows the scan body you have used the most recently. The date underneath indicates when you have last used it.
- **Favorite:** The “Favorite” tab shows scan bodies you have favorited in either the “Library” or “Recent” tabs. Add abutments you frequently use to the “Favorite” tab for easy access.

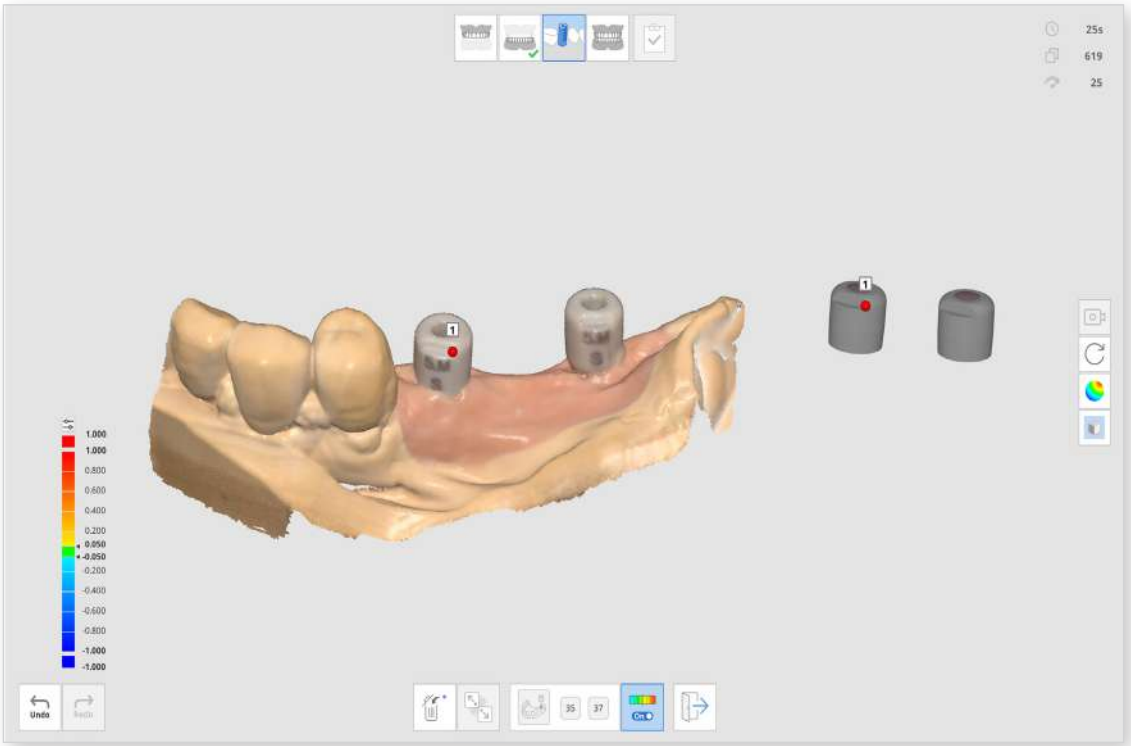


⑤ View the selected library in the 3D viewer on the right side of the dialogue window. You can rotate, move, zoom in, and zoom out the scan body.

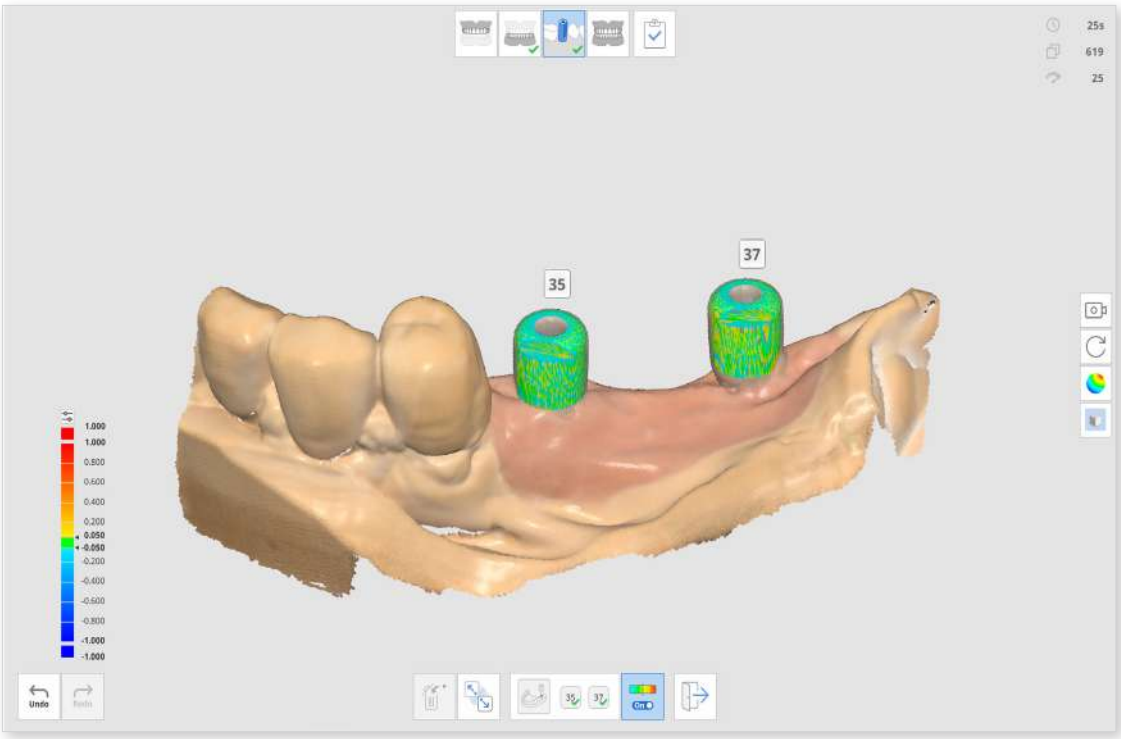
Medit-Certified: This scan body library applies an algorithm optimized for scan body library alignment to minimize the impact of scan error due to the processing and material of the scan body manufacturer.



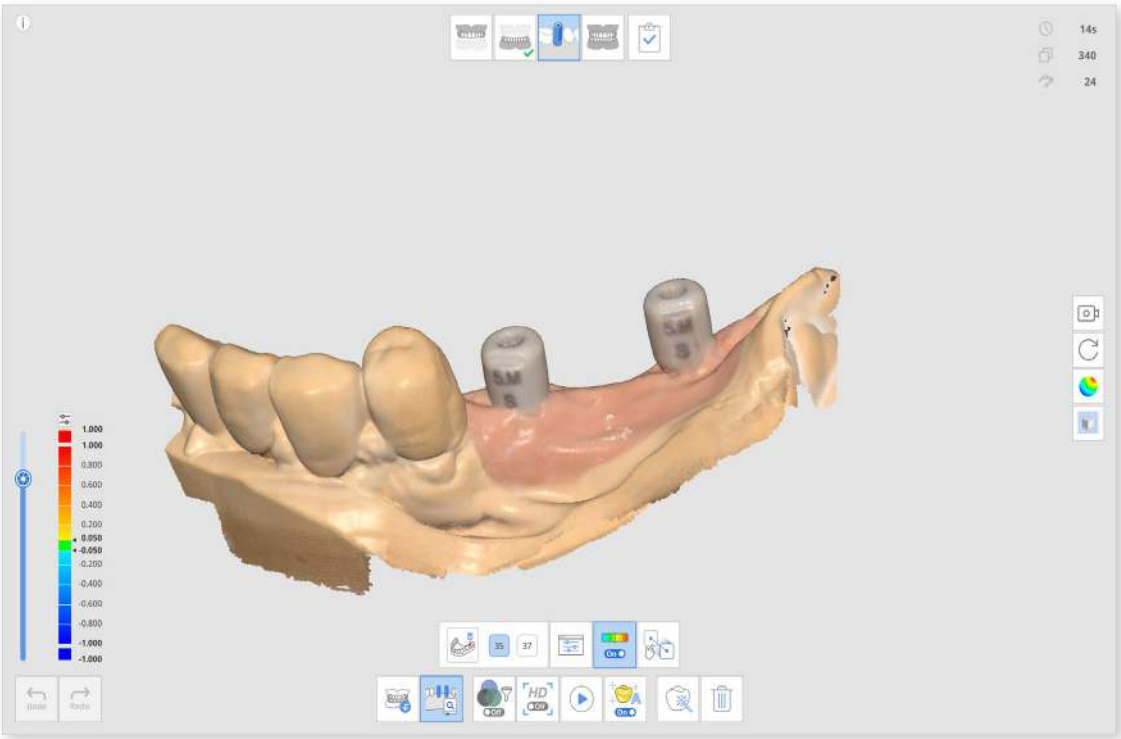
⑥ When you click the “Confirm” button, the dialogue window will close and the library assigned to the scan data, and tooth number is displayed on the screen. You can align the points on the scan data and library.



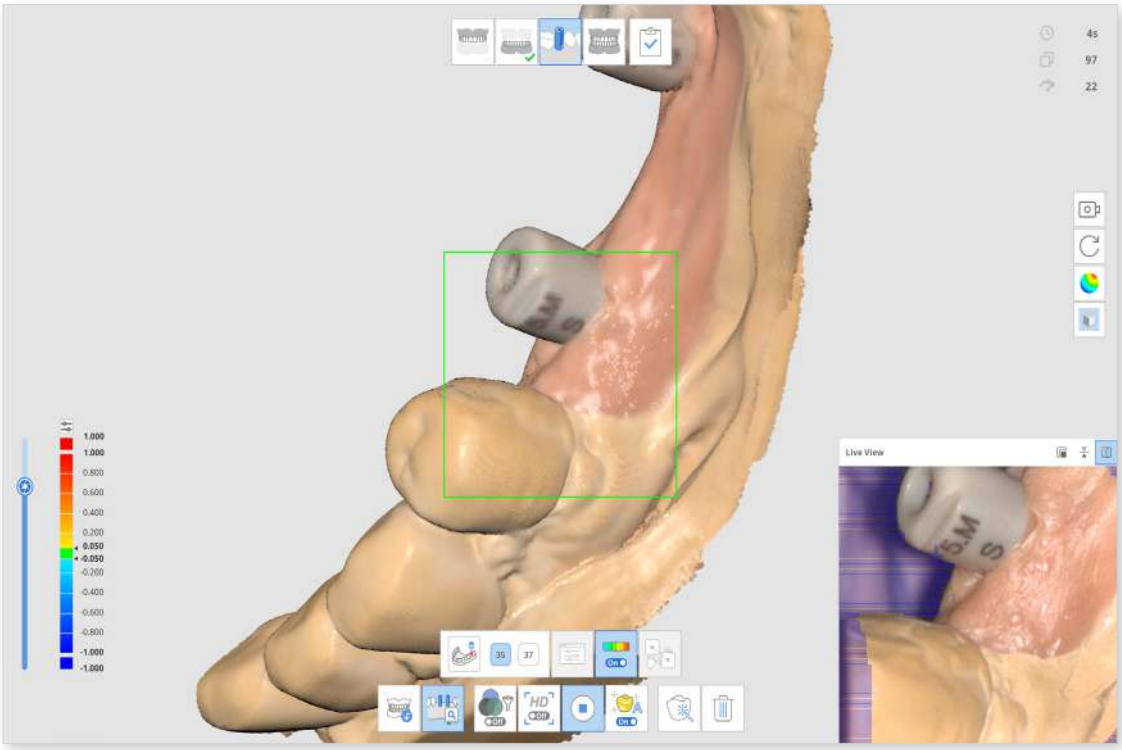
After aligning, you can check the deviation of the scan data and library through the color map.

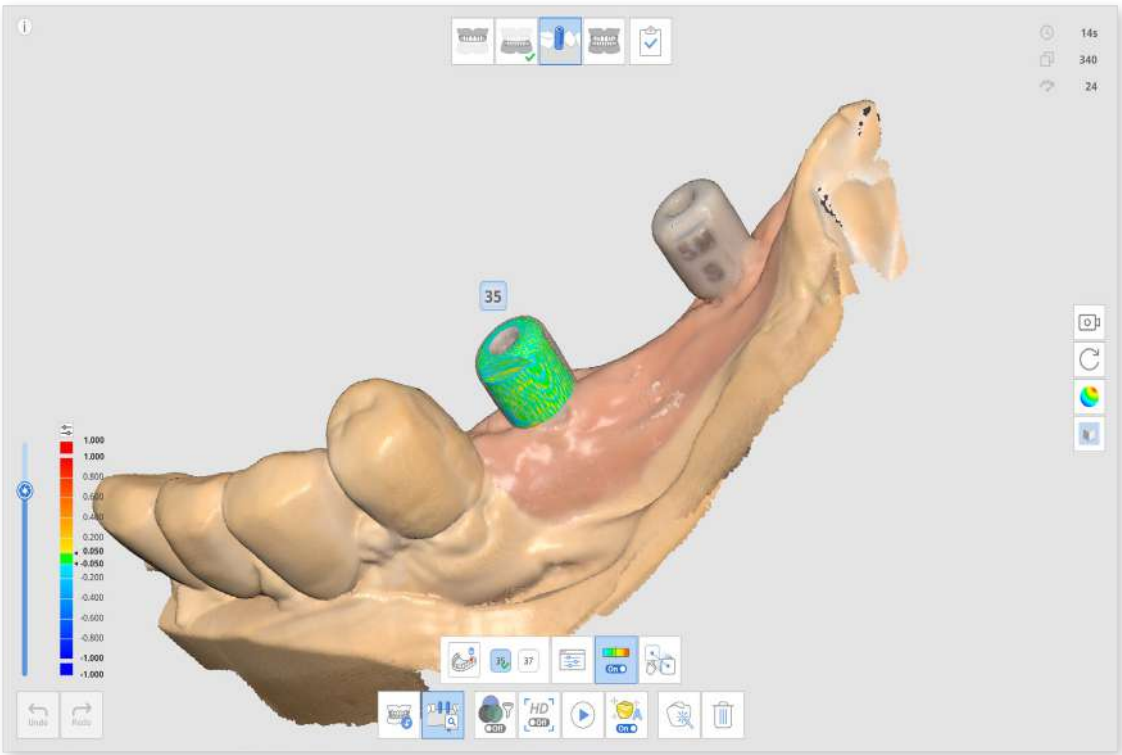


⑦ If you click “Exit” without specifying an alignment point, the screen will show as follows.



⑧ You can obtain scan data by specifying a base or tooth number. If you already have a library assigned, the library will be automatically sorted while scanning for tooth numbers.





Replicate Data to Scan Body Stage

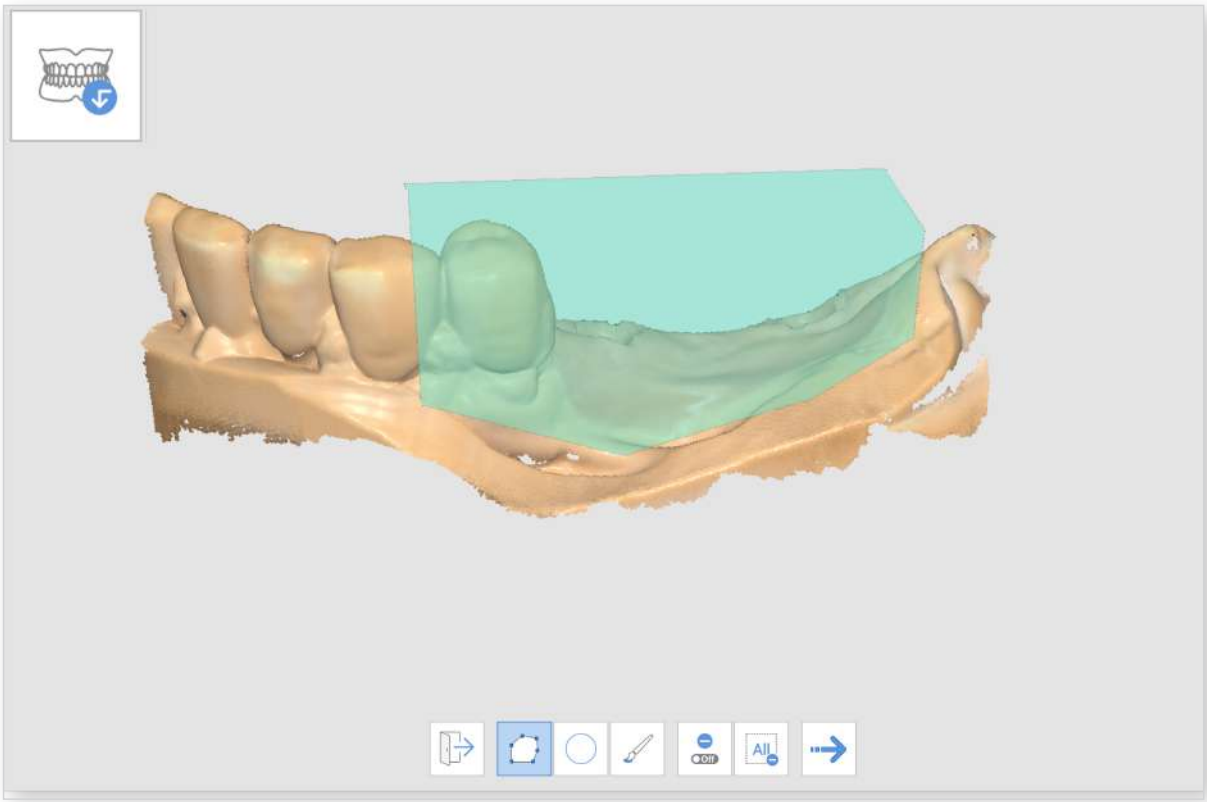
The usual method consisted of scanning the gingiva area without the scan body fastened on in the maxilla/mandible stage. Then in the scan body stage, the area would be rescanned with the scan body fastened.

However, some users scan the maxilla/mandible stage with the scan body fastened. In this instance, the user must erase or edit the maxilla/mandible data, unfasten the scan body, and rescan.

Additionally, there are instances where scanning is performed only during the maxilla/mandible stage using products that integrate the Healing Abutment and Scan Body.

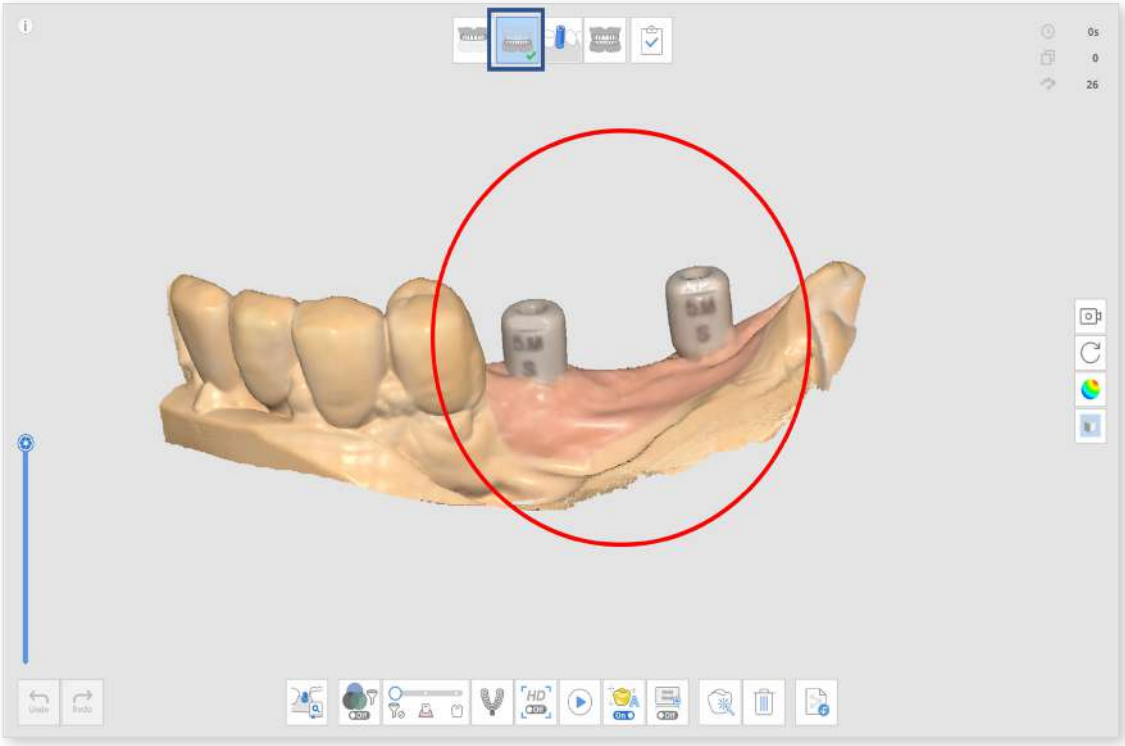
The newly added “Replicate Data to Scan Body Stage” function allows you to select the scan data in the maxilla/mandible scan stage and replicate it to the scan body stage.

However, the gingiva scan data obtained during maxilla/mandible stage is essential to form abutment’s profile during the CAD process. Additional scans should be made for the gingiva area after using this replicate function.

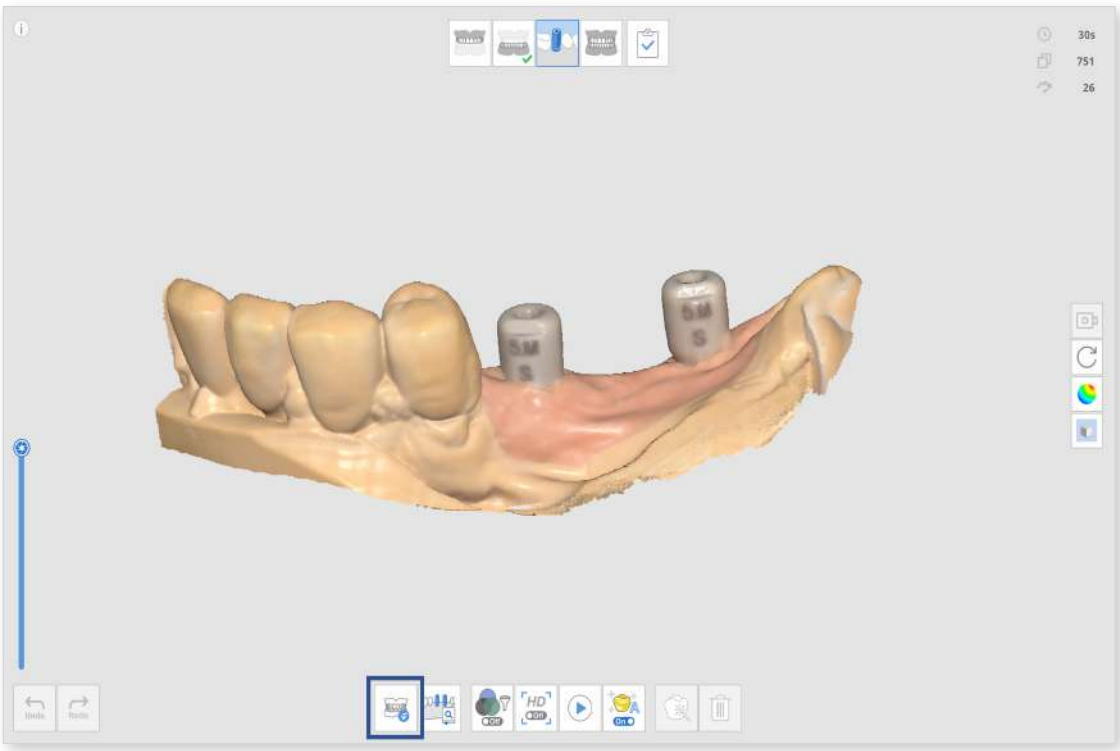


How to use Replicate Data to Scan Body

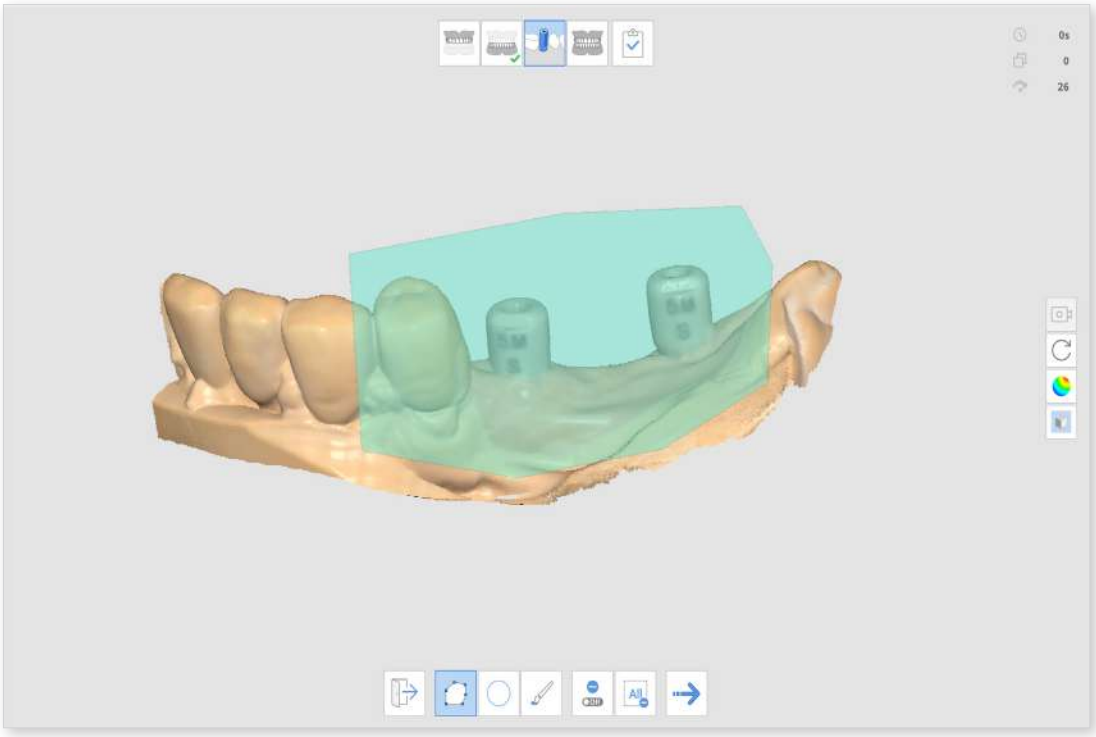
① Move to the scan body stage after obtaining the data in the maxilla/mandible scan stage.



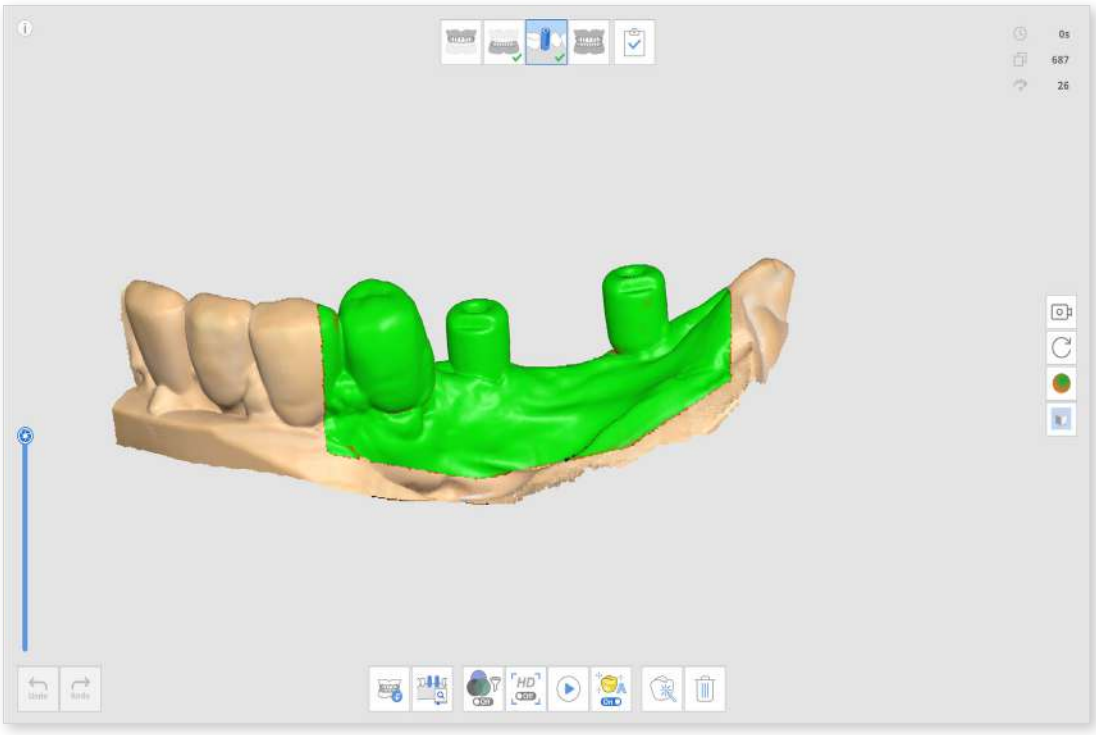
Click the “Replicate Data to Scan Body” function at the bottom of the screen.



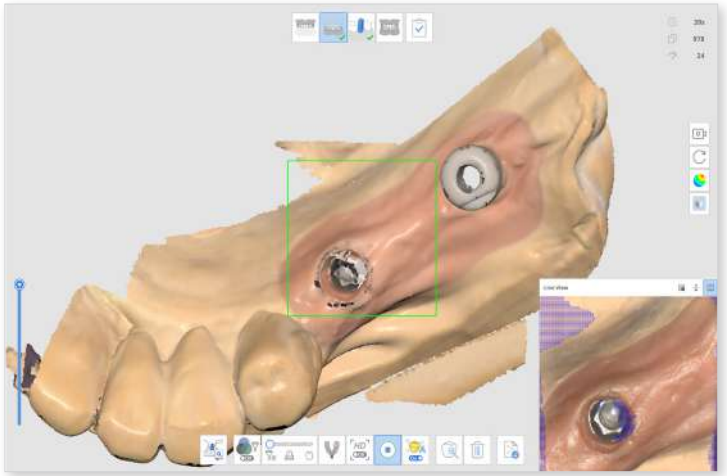
② Use the “Selection Tool” shown at the bottom to select data areas obtained during the maxilla/mandible scan stage.



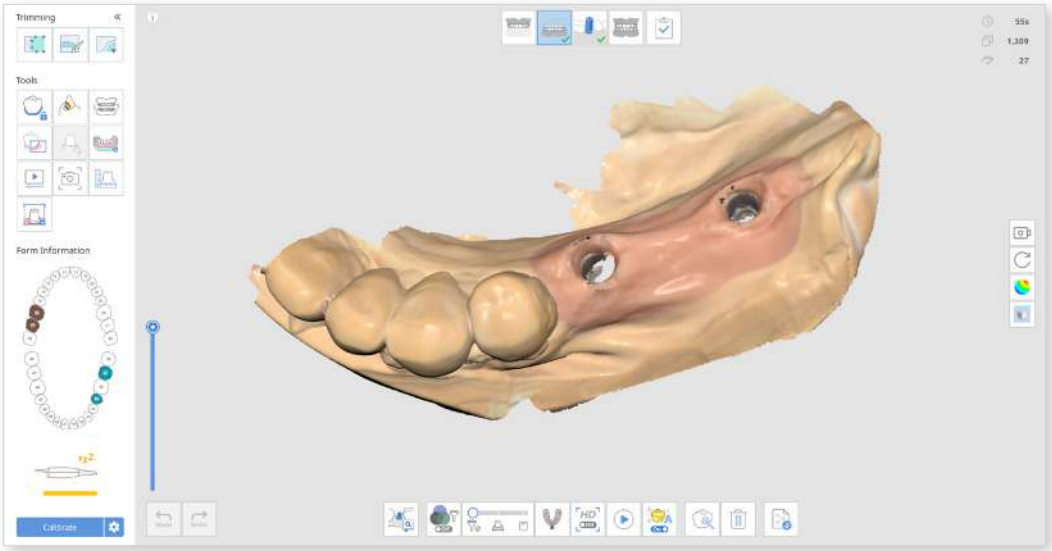
③ When you click “Next Step,” you will receive a message that guides you to scan the gingiva area maxilla/mandible scan stage. When you press “Confirm,” replication with the scanned body base data is complete.

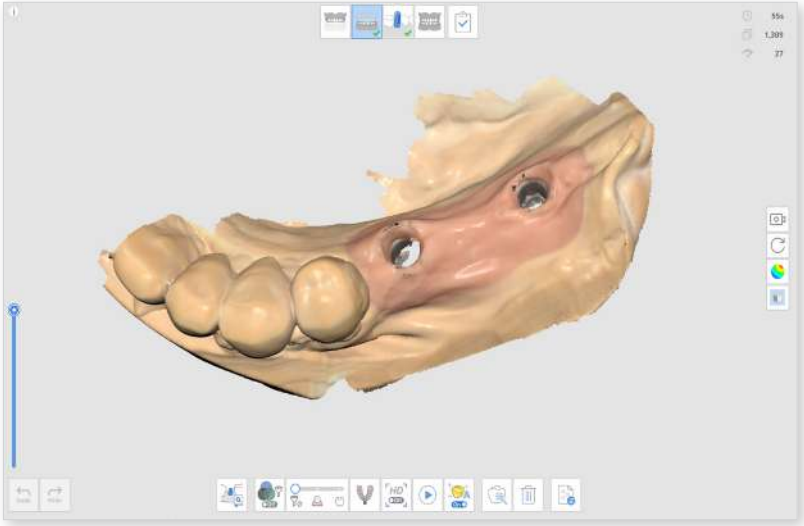


④ After data replication is completed, you must return to the maxilla/mandible scan stage to undo the fastened scan body and obtain scan data of the gingiva area.



<Additional gingiva scan after scan body is unfastened>





<Gingiva area scan completed>

Manual Alignment

In the existing “A.I. Matching,” libraries could only be aligned to scanned data after they have been classified to tooth numbers.

Users have reported that despite sufficient base data acquisition, the align button was disabled.

To solve this inconvenience, we improved the manual alignment function so users can use it more freely.

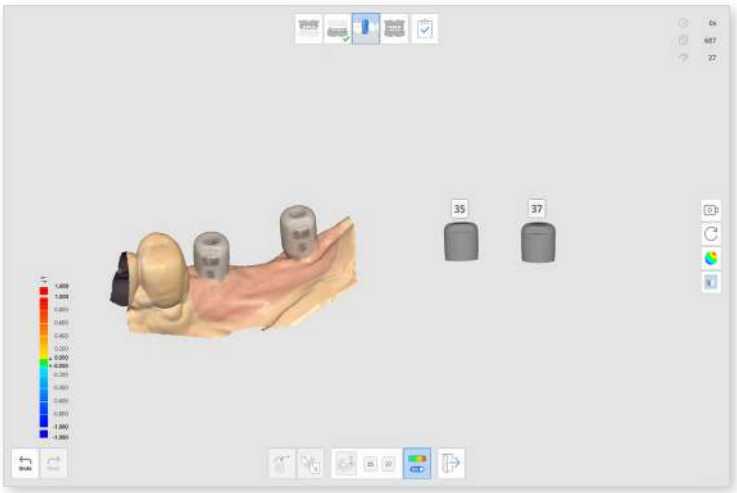
The improvement allows users to align libraries to existing data scanned to teeth numbers, base scan data, abutments, and scan body data.

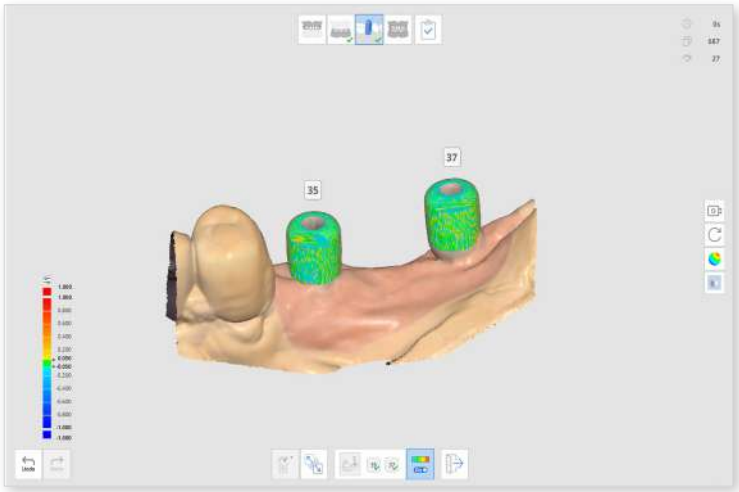
Regardless of the acquired data, it can be freely aligned if displayed on the screen.

Acquire and Align Only Base Scan Data

Base scan data on display screen can be aligned to the “Library.”

All align functions at the bottom of the screen will be disabled.

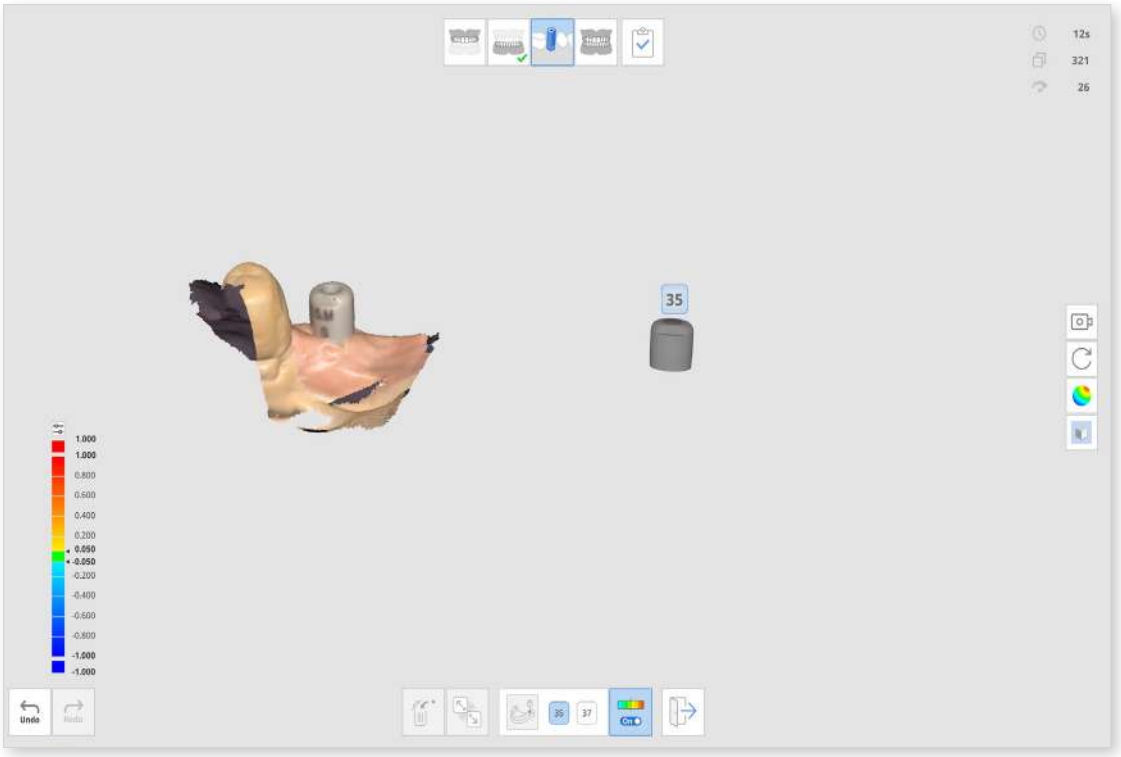


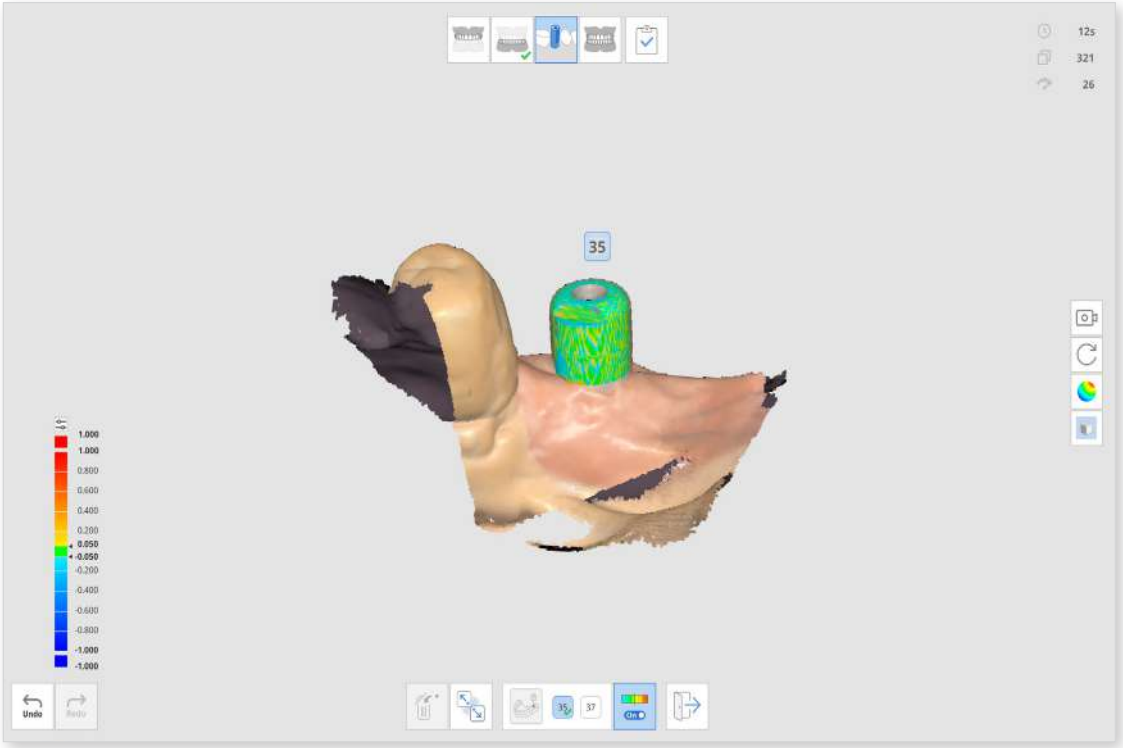


Acquire and Align Only Teeth Number Scan Data

Teeth number scan data on display screen can be aligned to the “Library.”

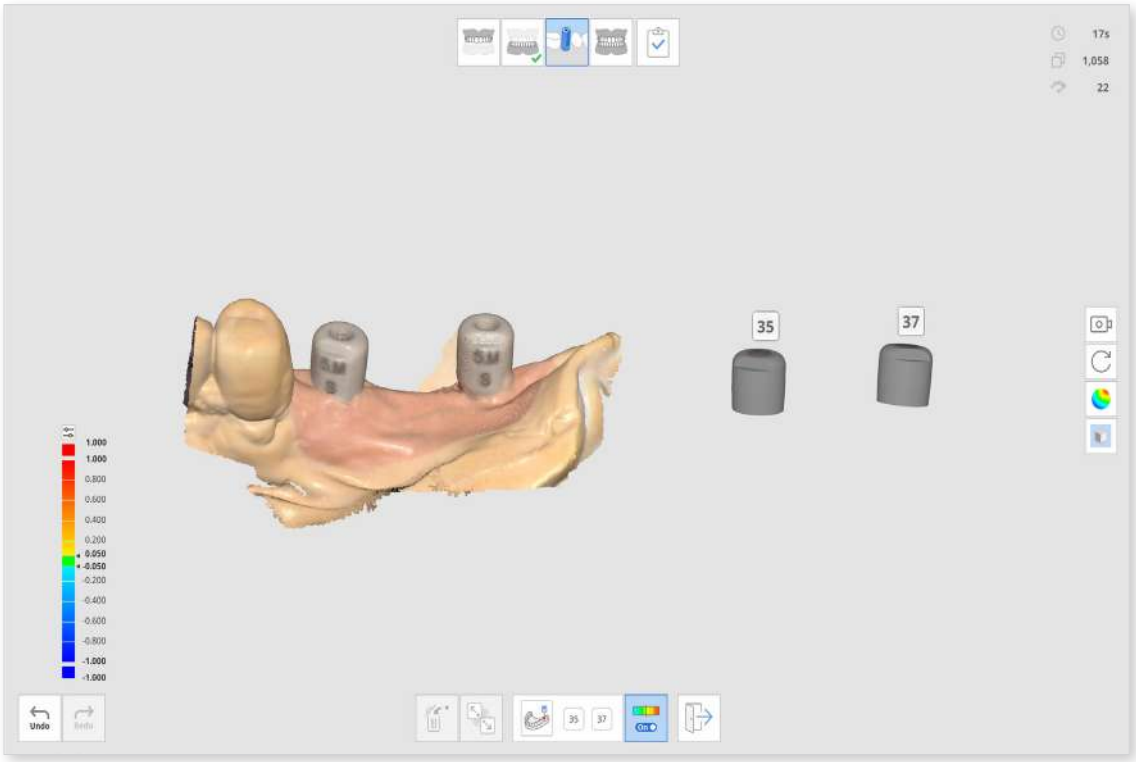
The teeth number option is activated in the options below. You can select and align each of them.

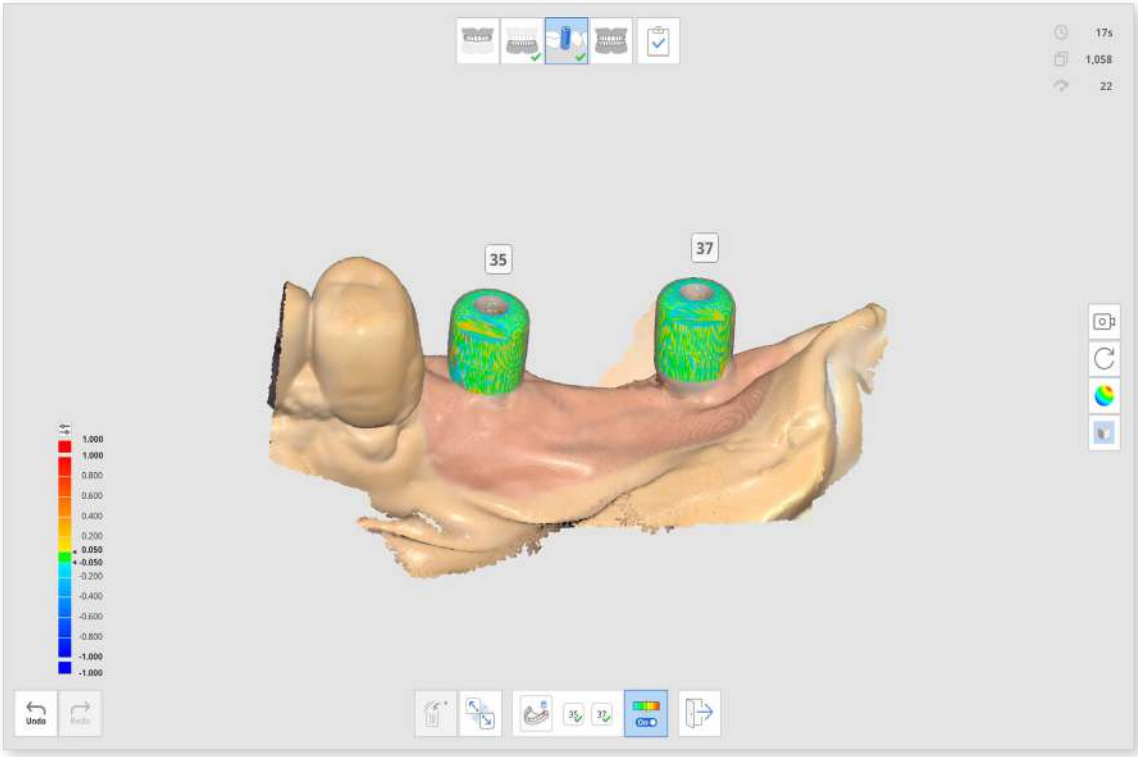




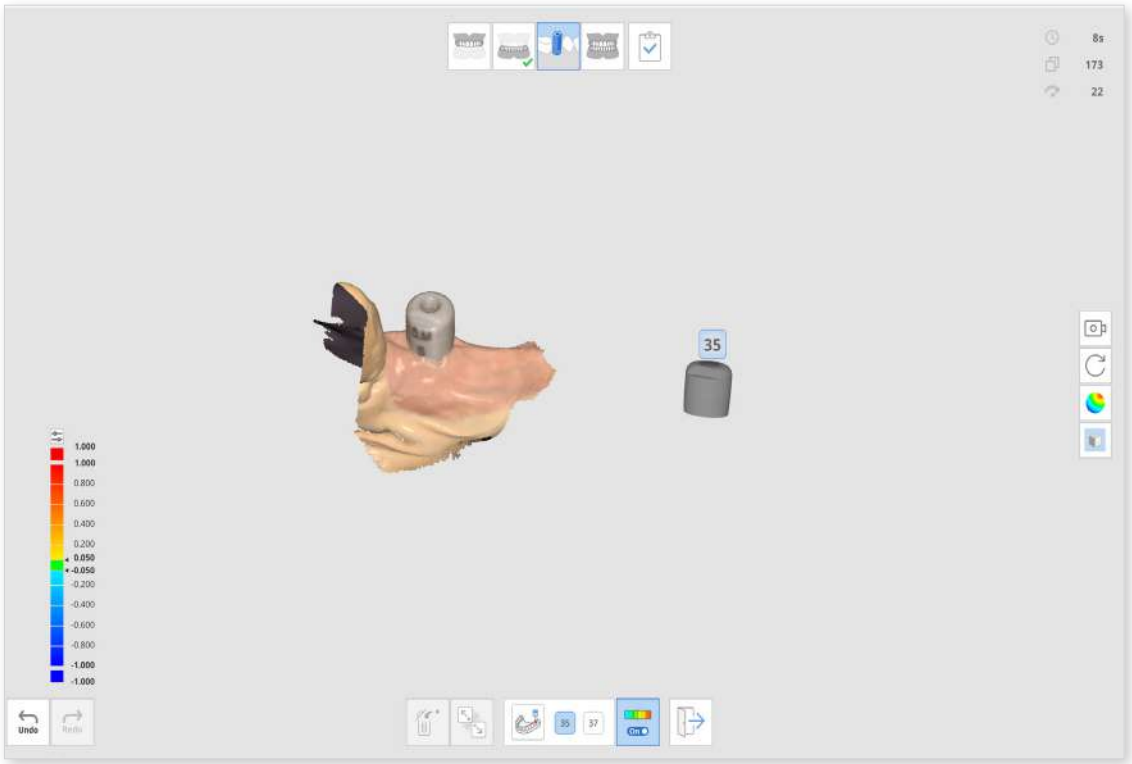
Acquire and Align Base Scan Data and Teeth Number Data

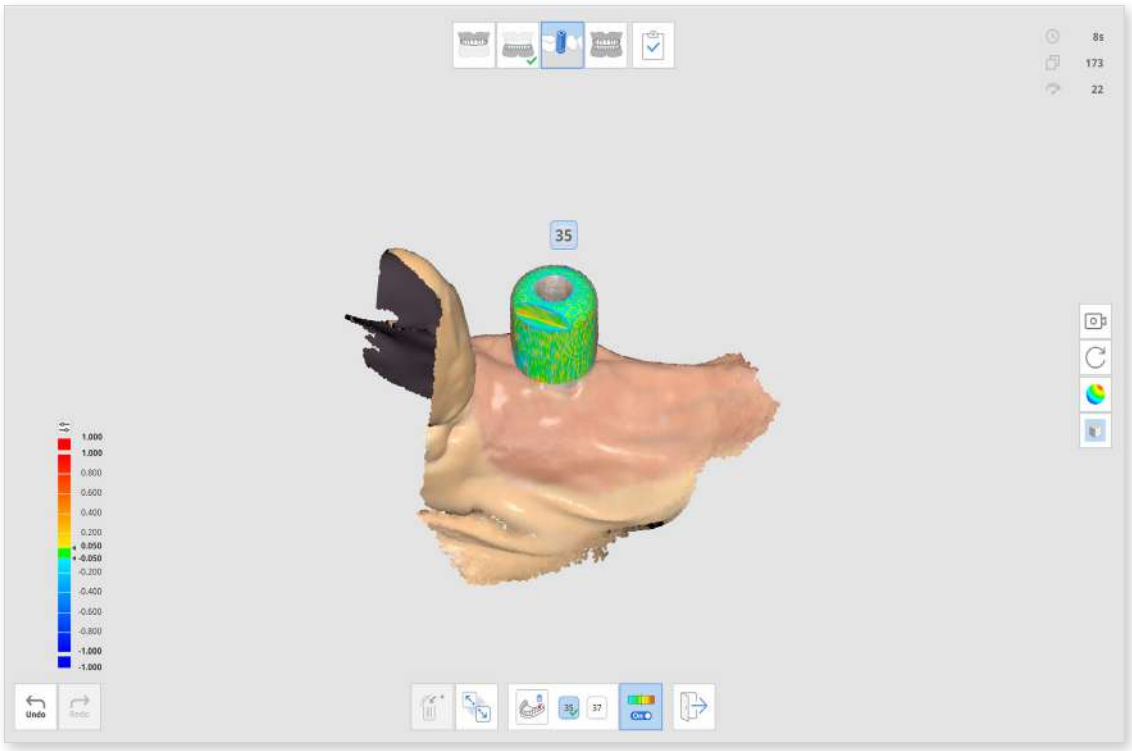
All scan data on display screen can be aligned to the “Library.”





If necessary, the base or teeth number can be selected and aligned.





Align with Occlusal Plane

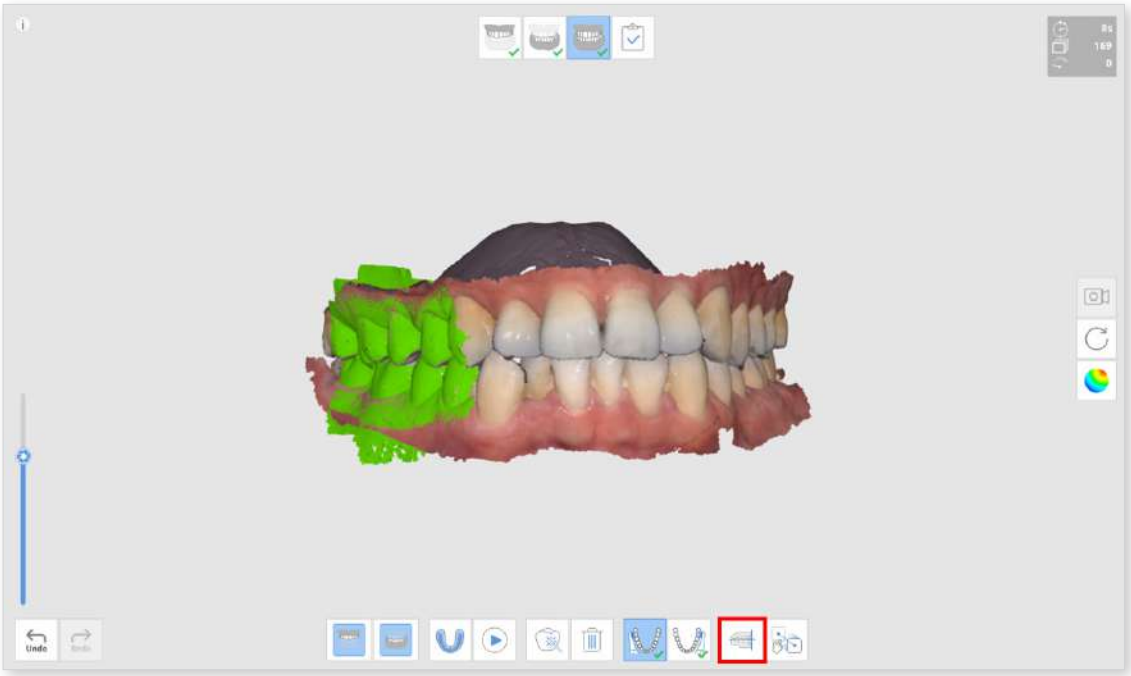
Adjust the position of scanned data on the occlusal plane in Medit Scan for Clinics and make it compatible with virtual articulator in exocad.

Toolbox

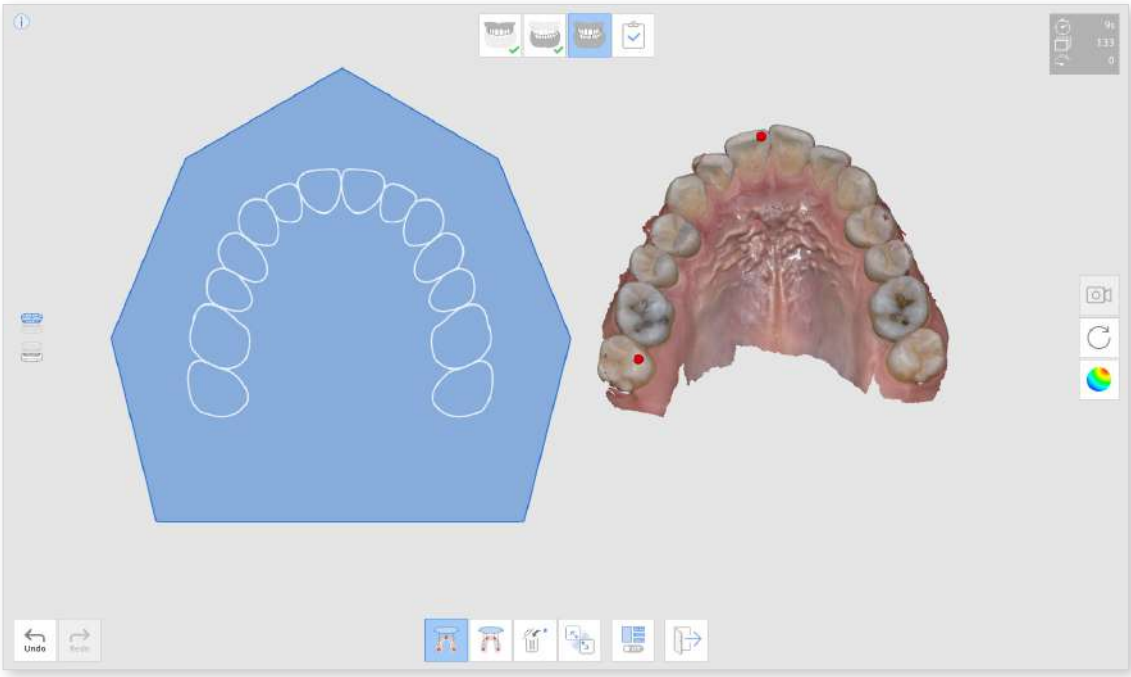
	Align With Occlusal Plane By Three Points	Selects three points on the maxilla or mandible to align with the occlusal plane.
	Align With Occlusal Plane By Four Points	Selects four points on the maxilla or mandible to align with the occlusal plane. It is beneficial when there are no anterior teeth.
	Delete Marker Point	Removes points which were selected for alignment.
	Detach Data	Separates the aligned data and moves it to the original position.
	Multi-View	3D scan data can be viewed from four sides.
	Exit	Takes the user to the previous step.

How to Use

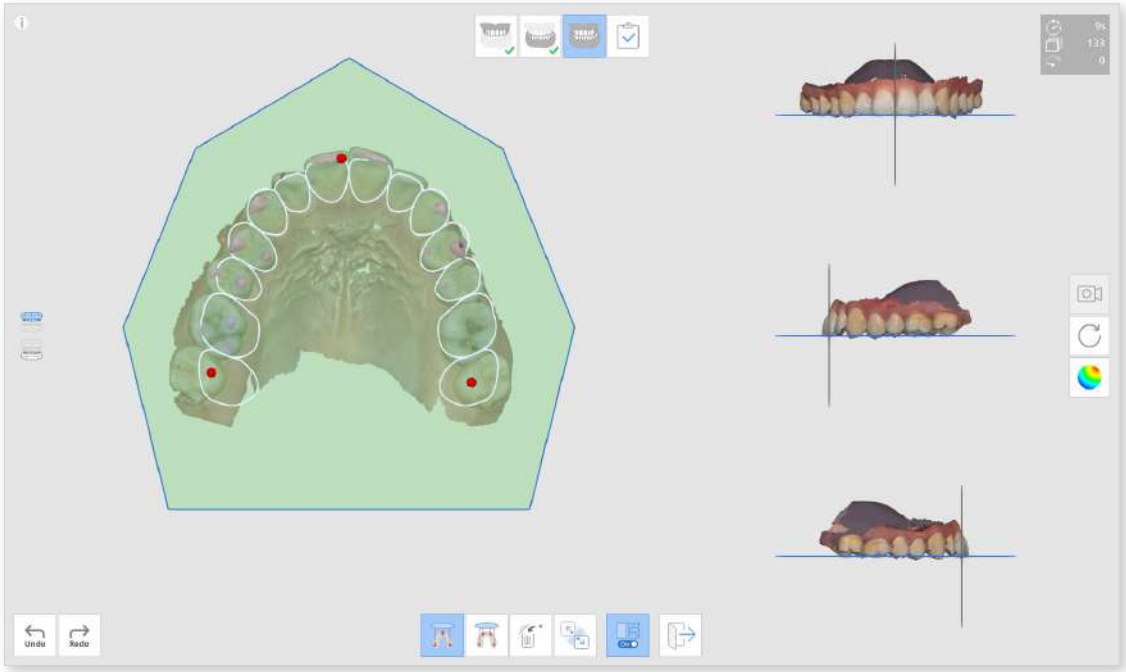
① Click “Align with Occlusal Plane” after the occlusion alignment is complete.



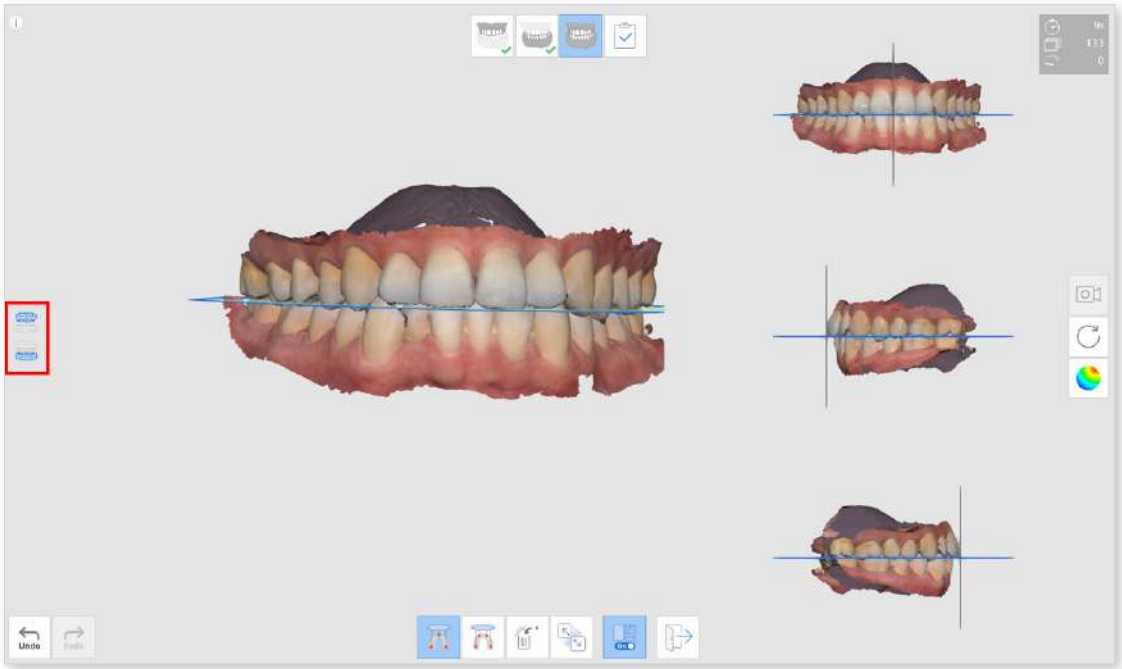
② Select three or four points on the maxilla or mandible. If there are no anterior teeth, select four points on the corresponding teeth on both sides.



③ Move the arch data on the right side to adjust the position on the occlusal plane. The user can adjust it from different angles.

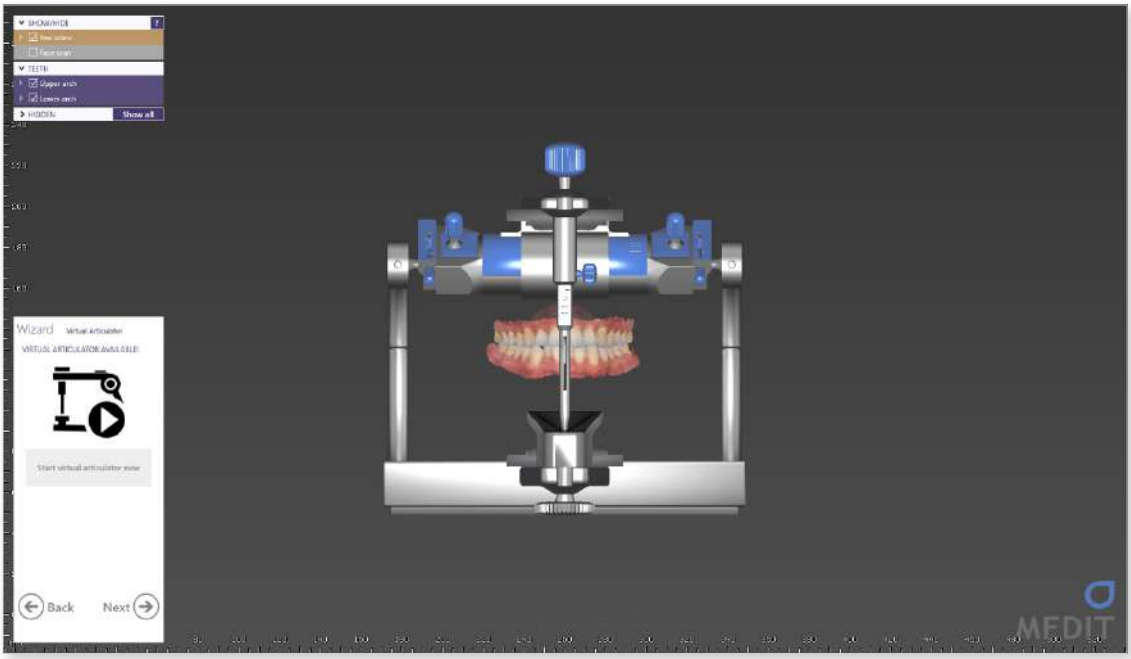


④ Select the maxilla, mandible, or both by using the buttons on the left. This allows the user to see the maxilla and mandible scan data individually or together.



⑤ The user can also turn off “Multi-View.”

⑥ When the data is loaded from exocad after completion, the scan data will be positioned at the same location as the virtual articulator.



Mandibular Movement

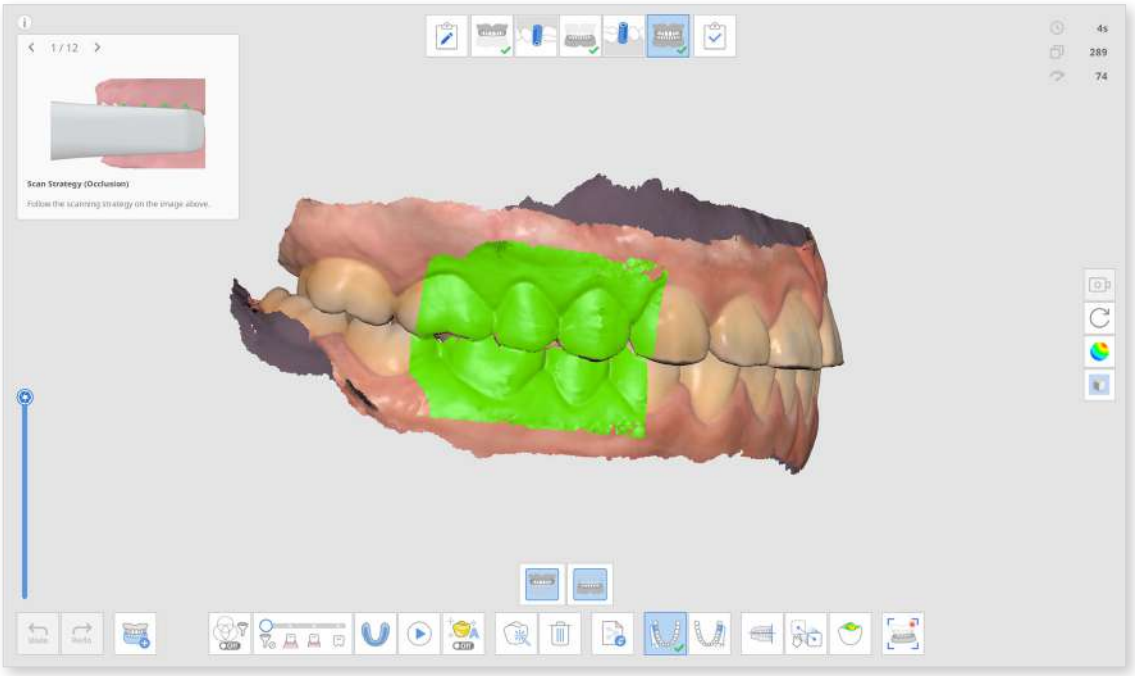
To diagnose patients with acquired scan data, establish treatment plans, and make dental prostheses and devices, the mandible and the maxilla need to be aligned with each other. We have supported our users in aligning the mandibular and maxillary occlusion targets based on the first and the second occlusion data to show the positional relationships. However, it only presents the position of the maxilla and the mandible when they stay still without any motion.

We need to consider not only the center occlusion but also the mandibular movement of the patient caused by the TMJ motions to manufacture more accurate prostheses and devices. With this Mandibular Movement feature, you can record the actual movements of the mandible based on the maxillary data and use the simulation data for prosthetic manufacturing.

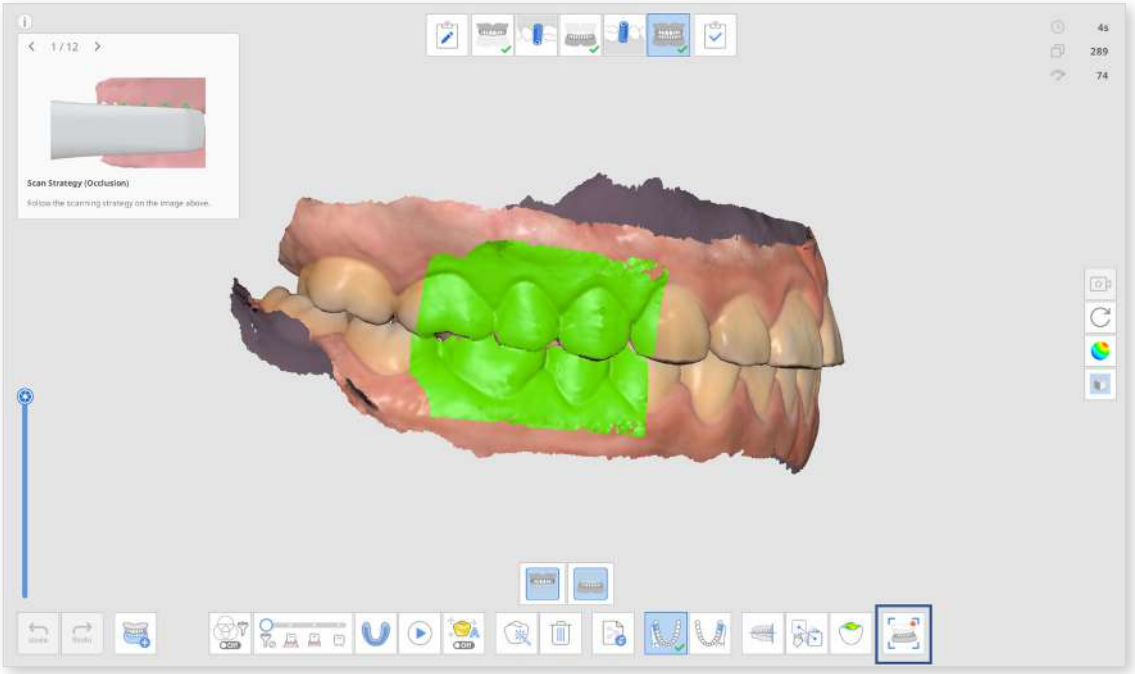
How to Use

① Acquire maxillary and mandibular data first to enter the Occlusion stage.

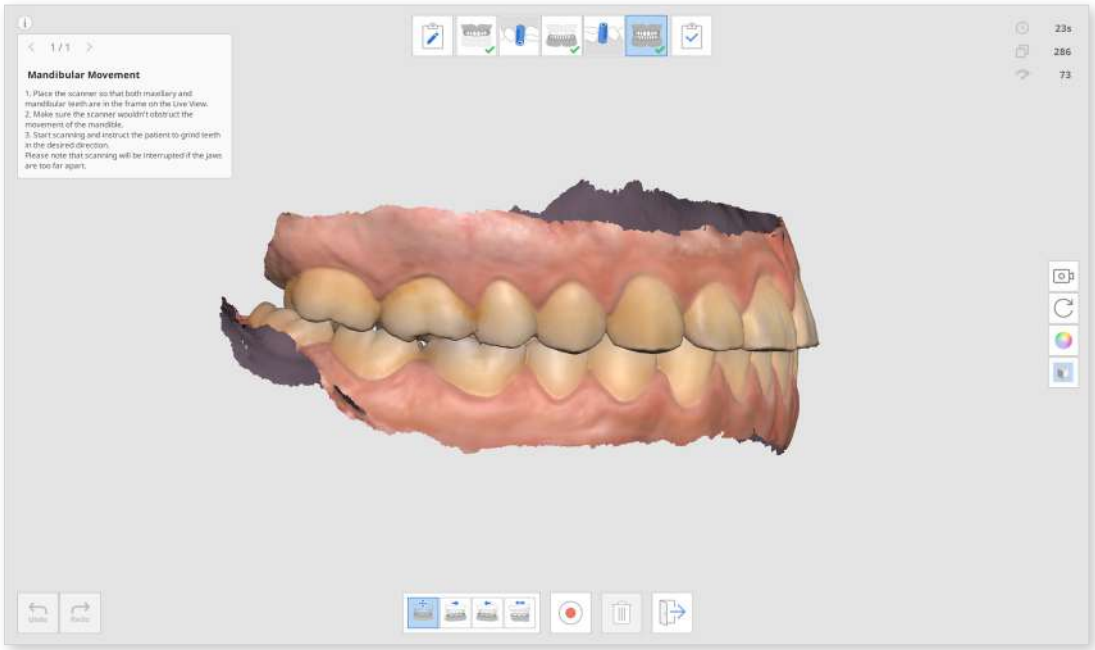
② Acquire the first (and the second) occlusion scan data and proceed with alignment.



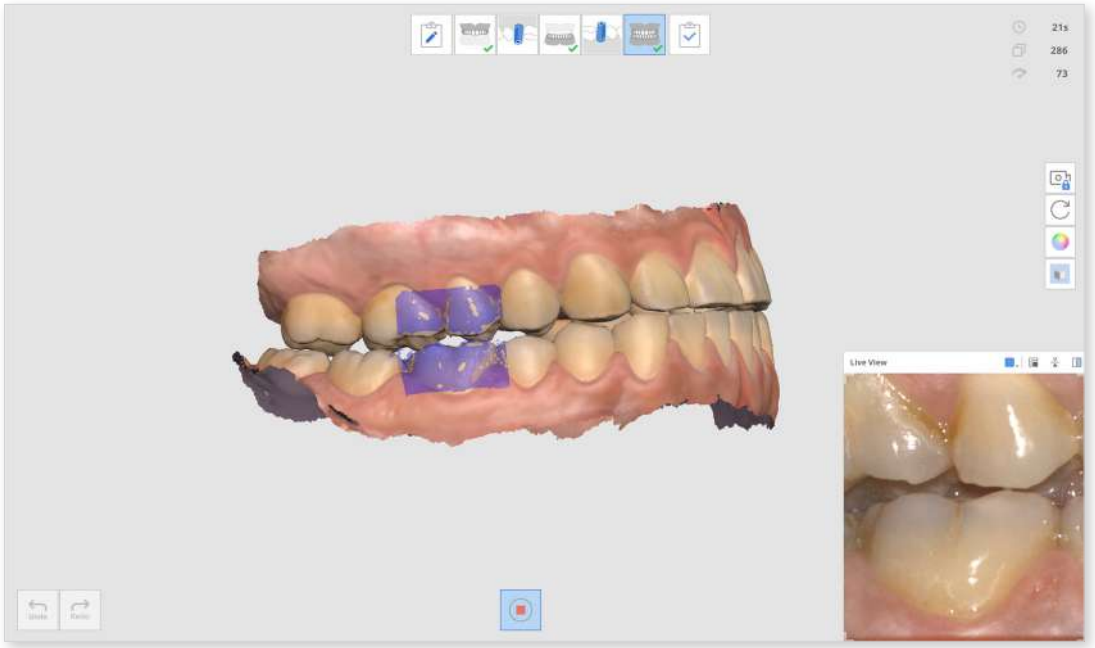
③ Click the Mandibular Movement icon at the bottom of the screen when it is activated.



④ Select an icon of desired movement direction at the bottom from Free, Right Lateral, Left Lateral, and Protrusive.

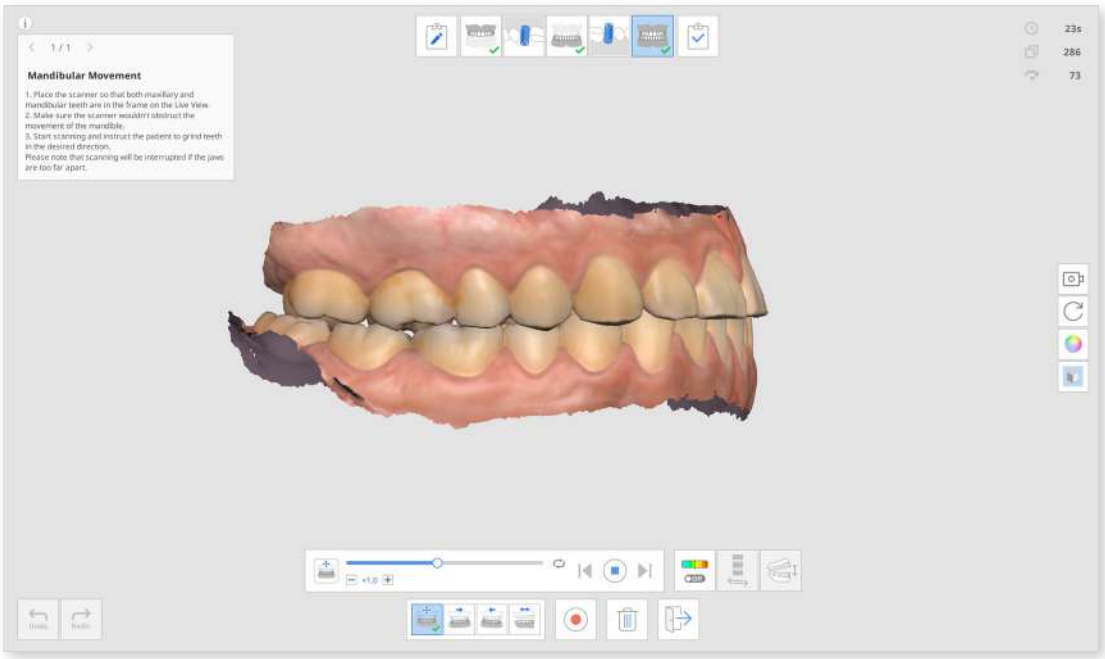


⑤ Place the scanner tip where the maxillary and mandibular meet while the patient keeps contact between the jaw.

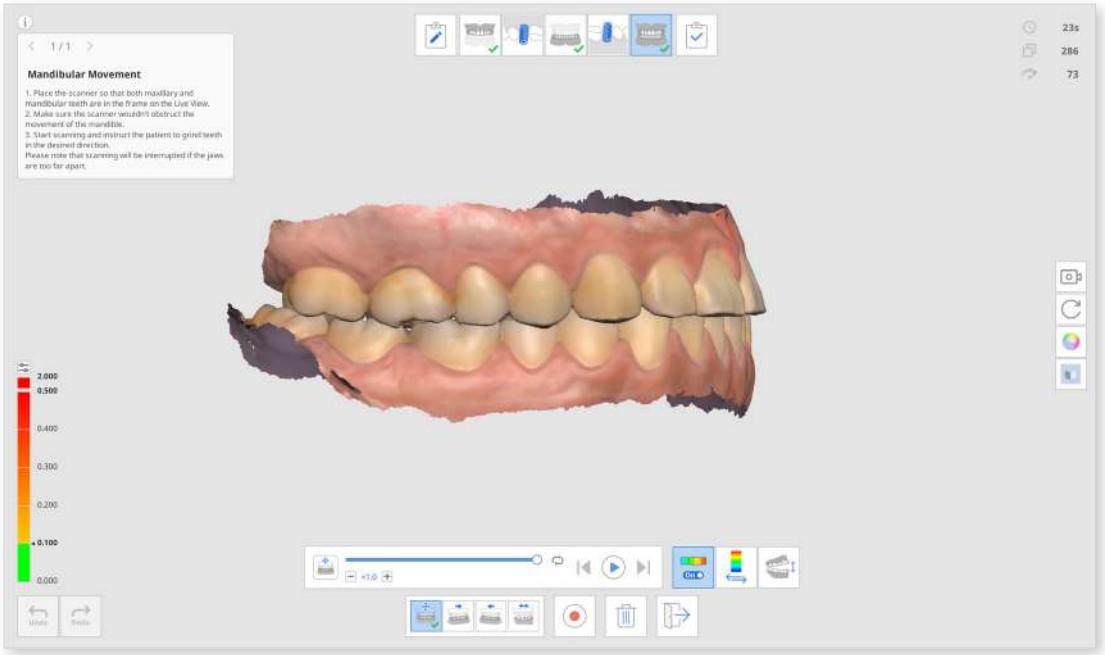


⑥ The Live View window appears on the screen when the scanner starts recording. Then instruct the patient to move the mandible according to the selected movement direction. Make sure both the mandibular and maxillary teeth appear on the Live View. Scanning will be interrupted if the jaws are too far apart, and the movement is no longer reflected on the screen.

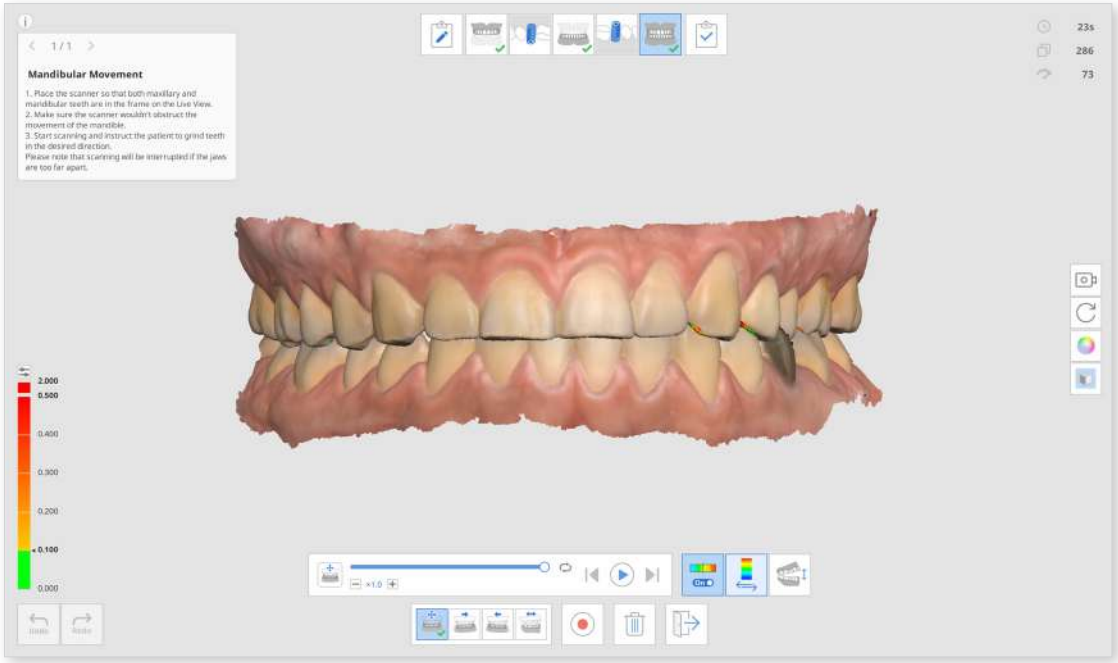
⑦ The play bar and icons regarding mandibular movement simulation appear on the screen once you finish recording. You can play the movement recording by clicking the Start button. You can also adjust the speed of movement or turn on repeat.

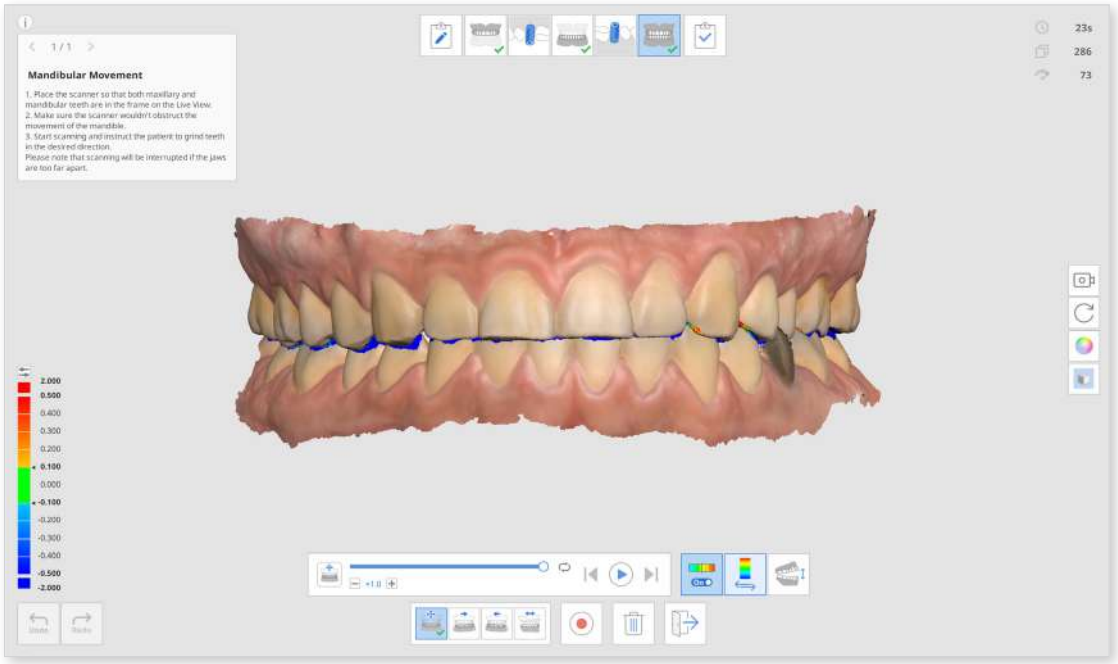


⑧ Click the Deviation On/Off icon to show or hide the interference areas while the mandible is moving. Analysis to represent colors may take some time.

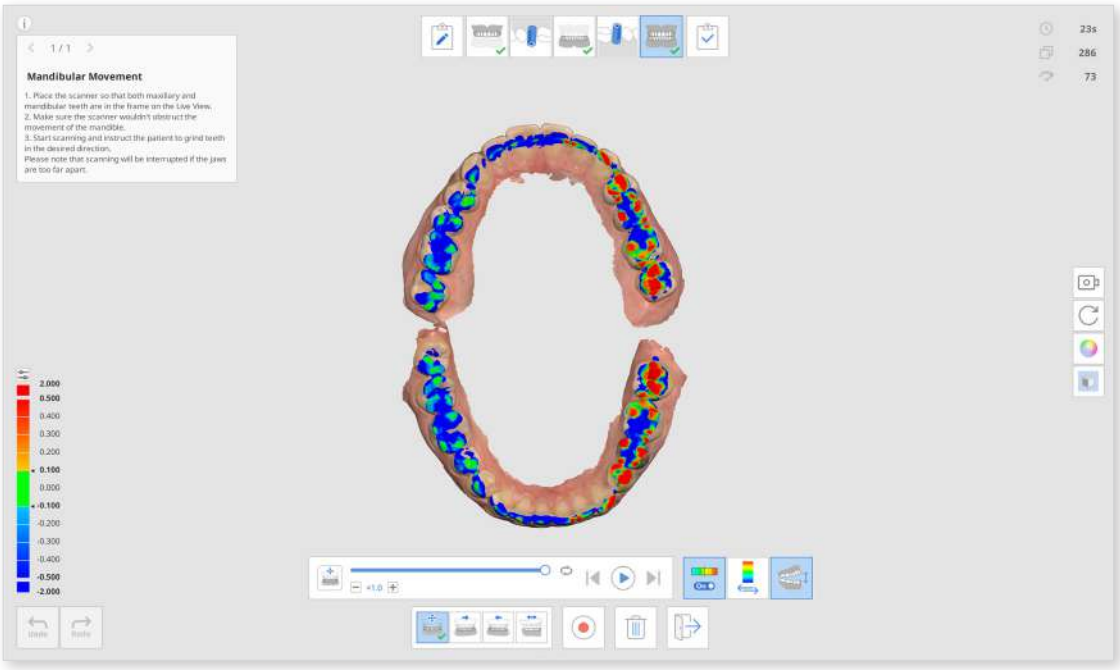


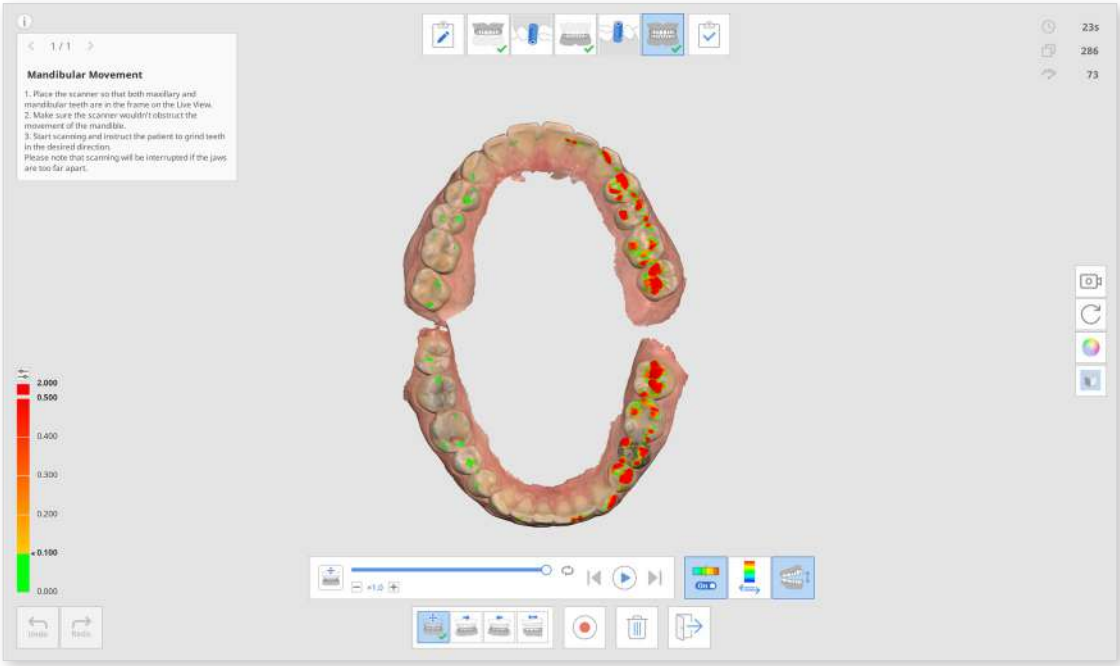
⑨ Click the Switch Deviation Display Area to display the scale for all data or contact area only.





⑩ Click the Switch View Style to change the view style between Opened Jaws and Closed Jaws.



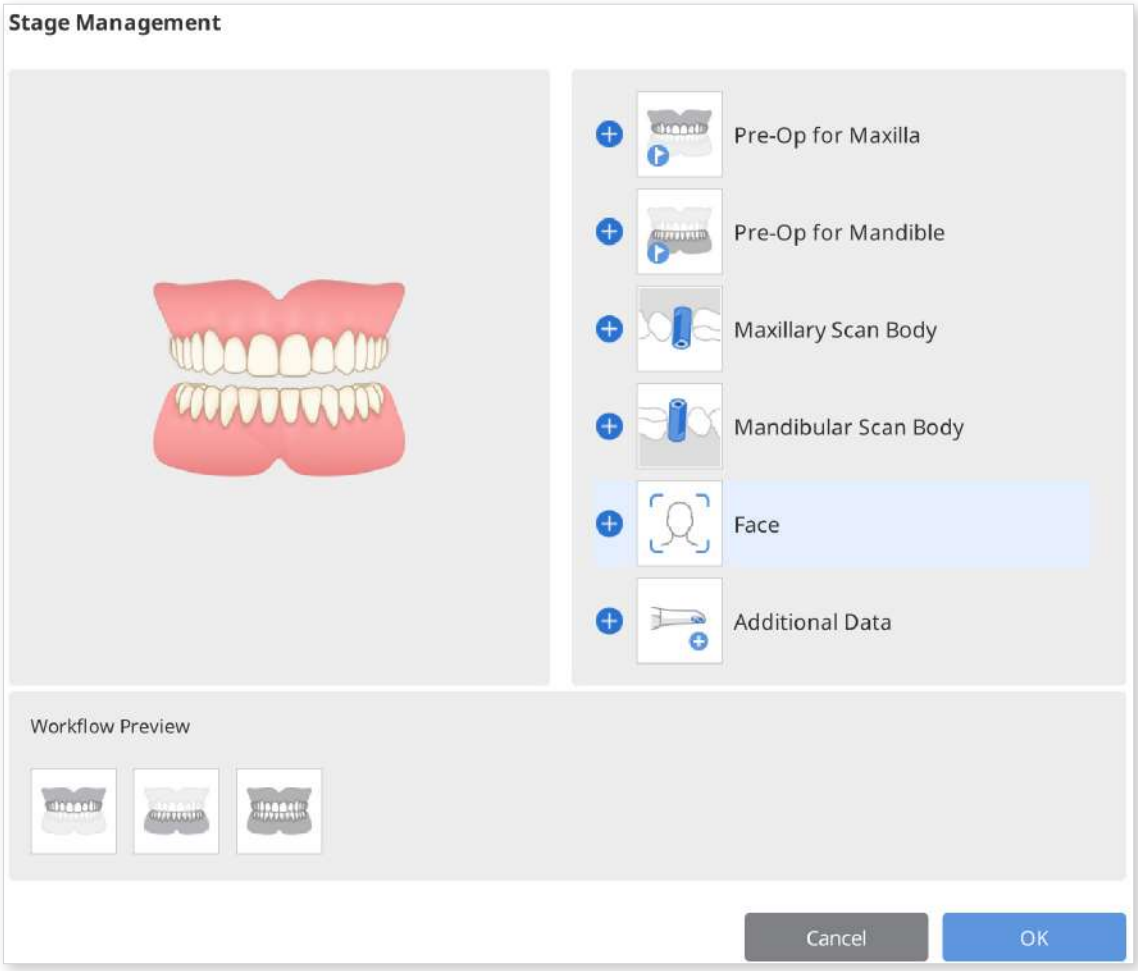


⑪ Click Exit to return to the Occlusion stage, and the mandibular movement recording will be added to the data tree in Medit Link.

Scan Stage Management

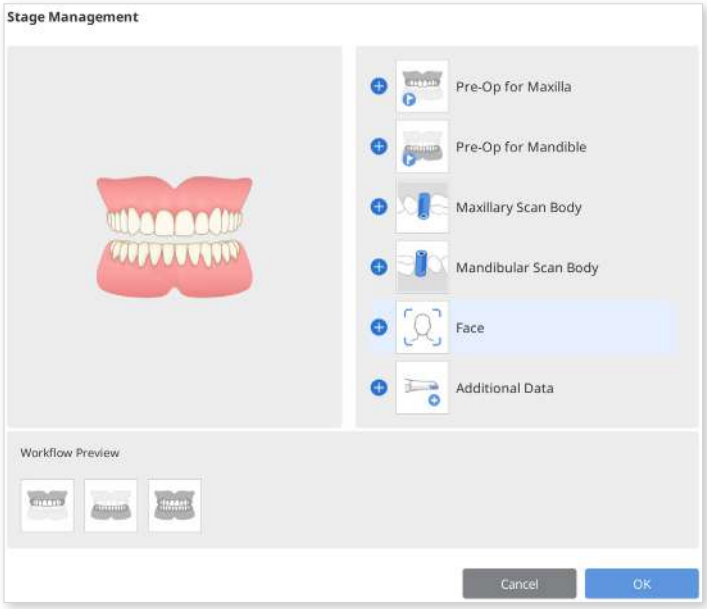
Scan stage management allows you to add or remove scan stages regardless of form registration status in Medit Link. You can edit the following stages:

- Analysis model
- Scan body
- Face
- Denture (only when the form is registered as an arch type in Medit Link)
- Additional data

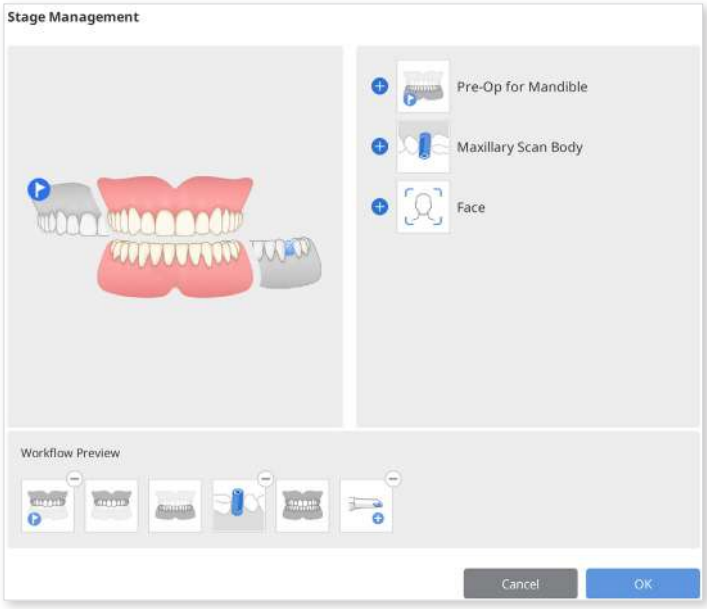


Add Scan Stage

① Click the Scan Management icon to run the dialog below.



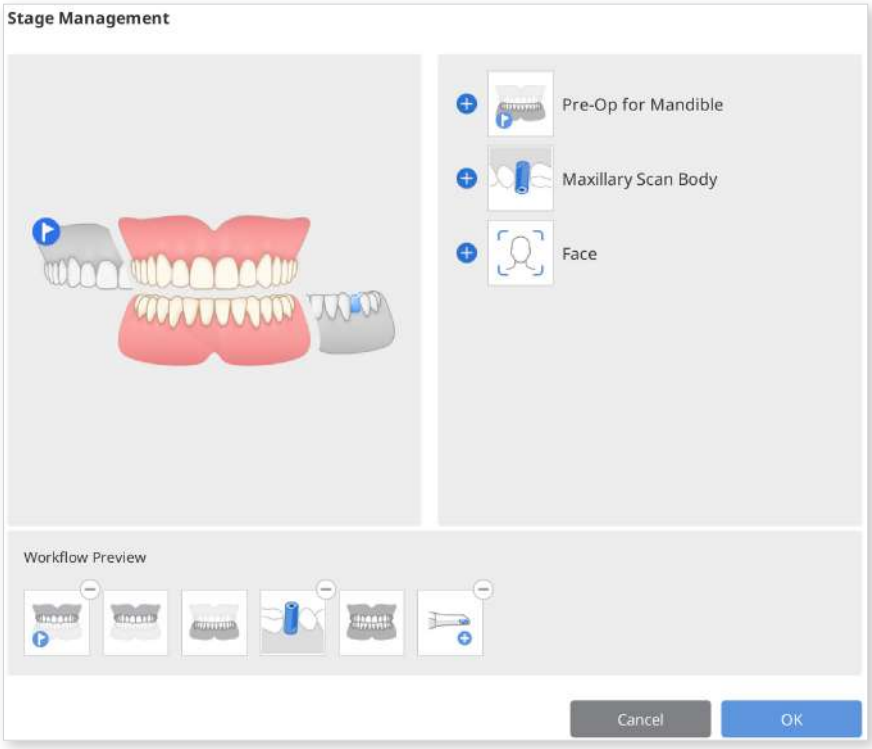
② Click the scan stage from the list on the right. The stages added to your workflow are shown on the Workflow Preview, and you can change the order of stages on the preview.



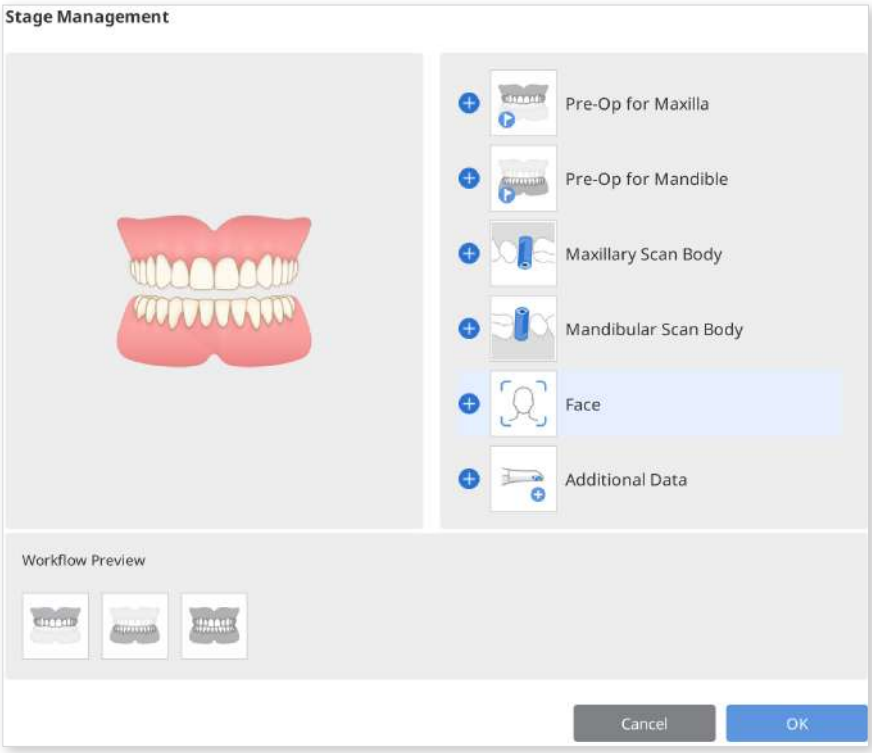
③ Click OK on the dialog and you will see the changed scan stages as below.

Remove Scan Stage

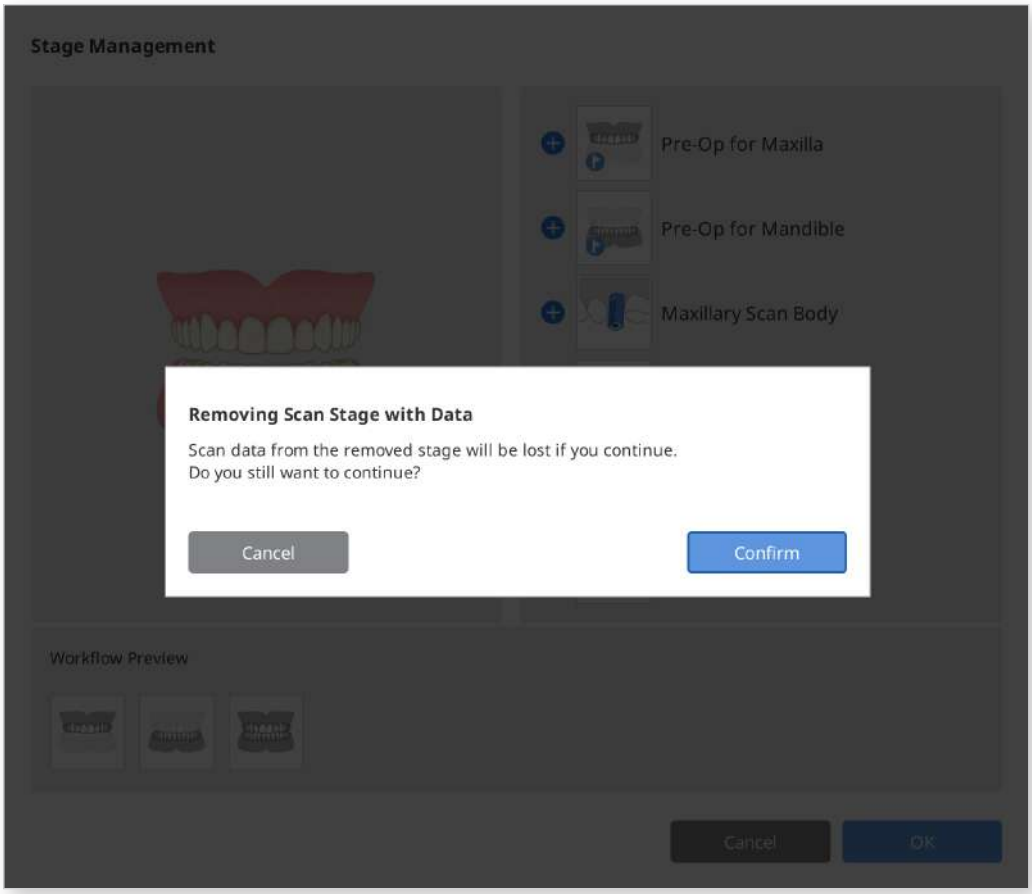
① Click the Scan Management icon to run the dialog below.



② Click the (-) button of the stage you want to remove from the Workflow Preview. The stages to be removed are shown on the list on the right.



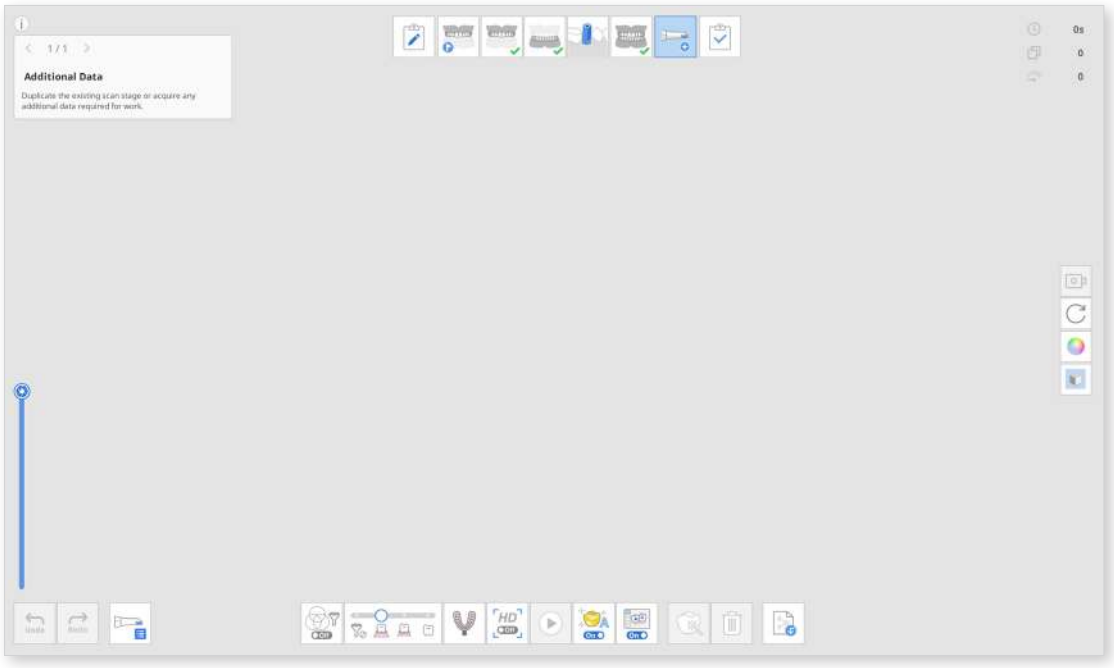
③ Click OK to apply changes. The following message appears when some data exists on the stage to be removed.



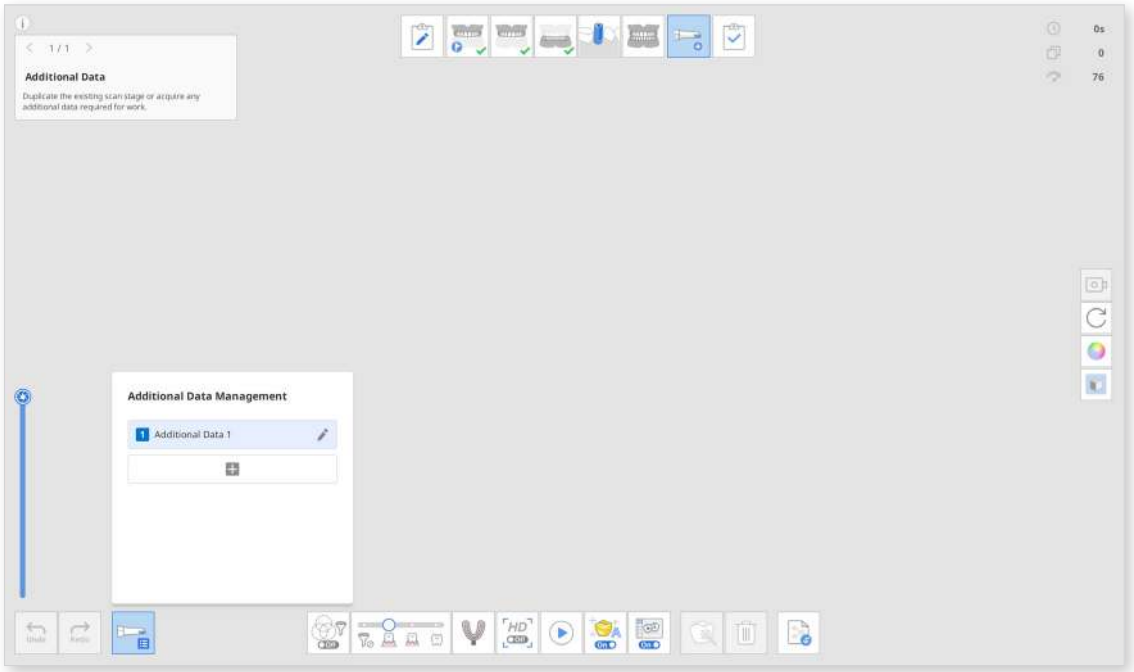
④ Click OK to apply changes and you will see the changed scan stages as below.

How to Use the Additional Scan Stage

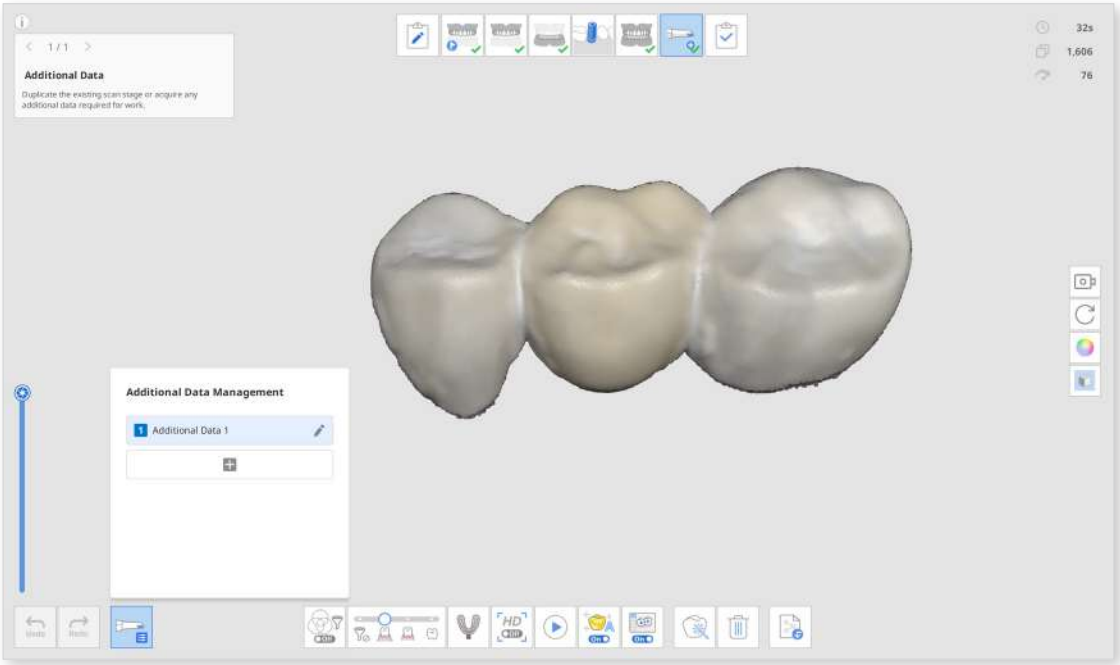
① Add the Additional Data stage from the Stage Management (See **Add Scan Stage**).



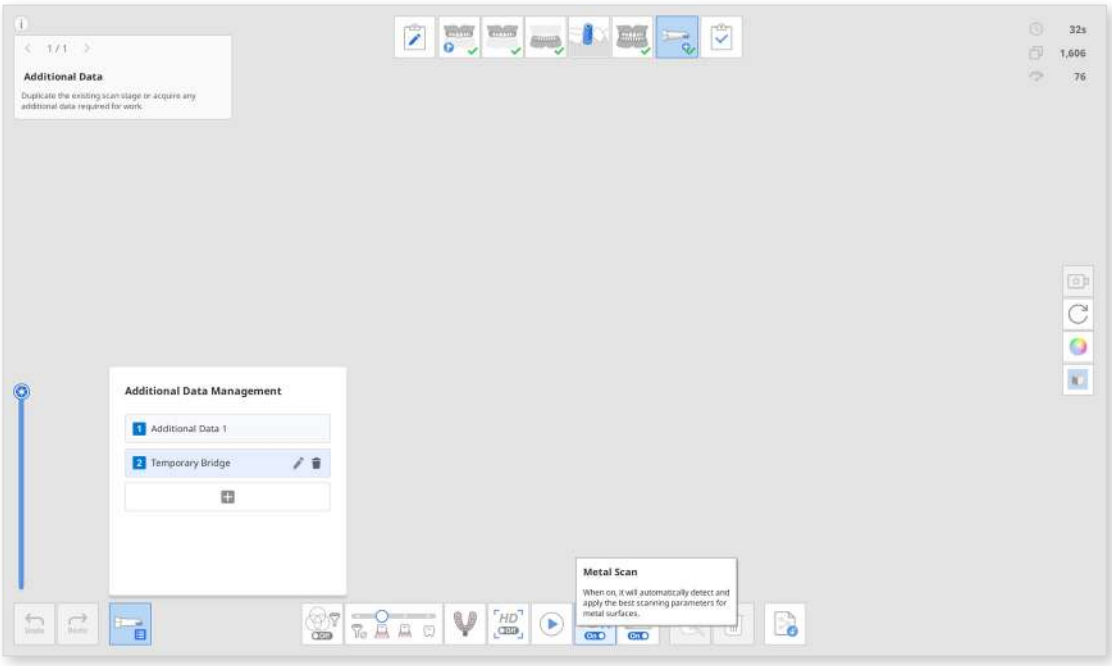
② Click the “Additional Data Management” icon at the bottom of the screen. You can add a new data and delete or rename additional data on the list in the Additional Data Management dialog.



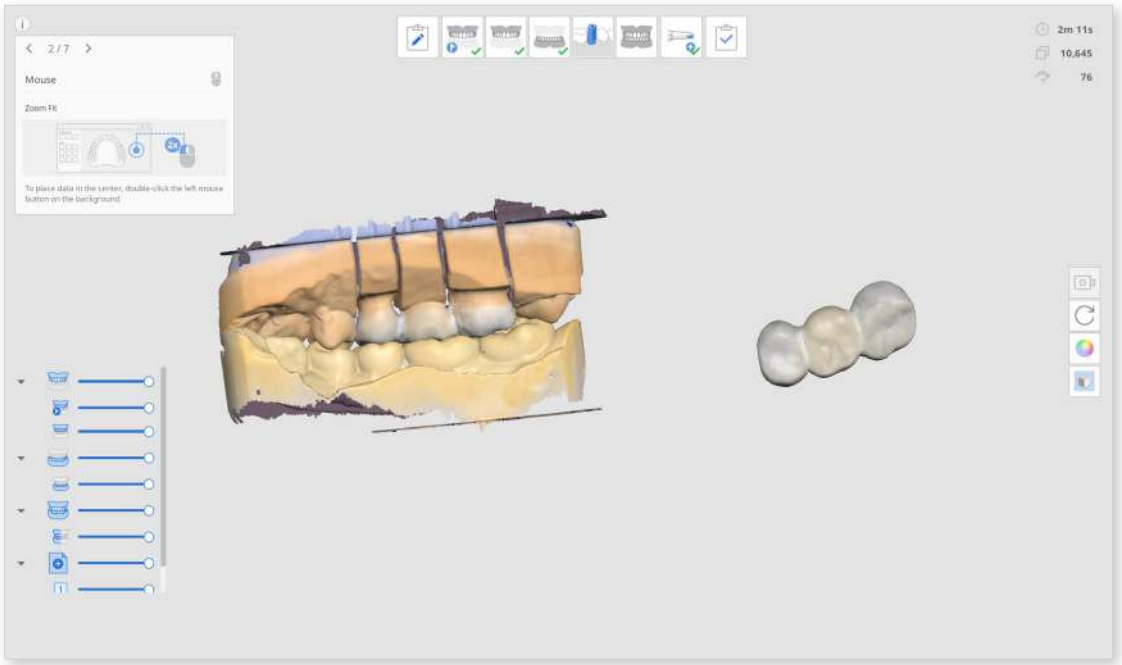
③ Acquire the first additional data.



④ Click the + button on the Additional Data Management dialog and acquire another scan data for the added one.

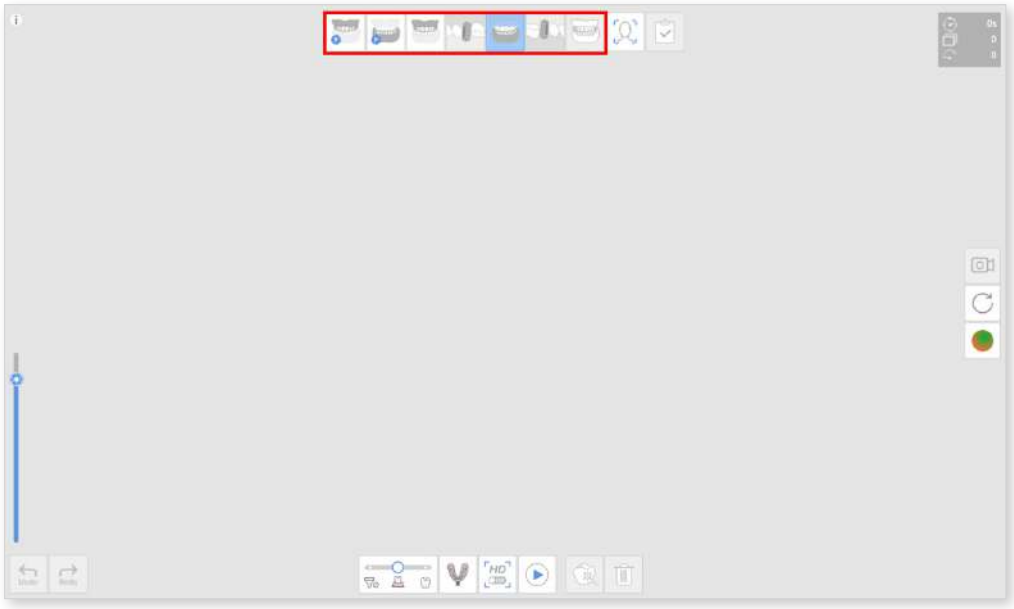


⑤ When you return to the Overview after data acquisition, you can view the additional scan data displayed in a separate area from other data.

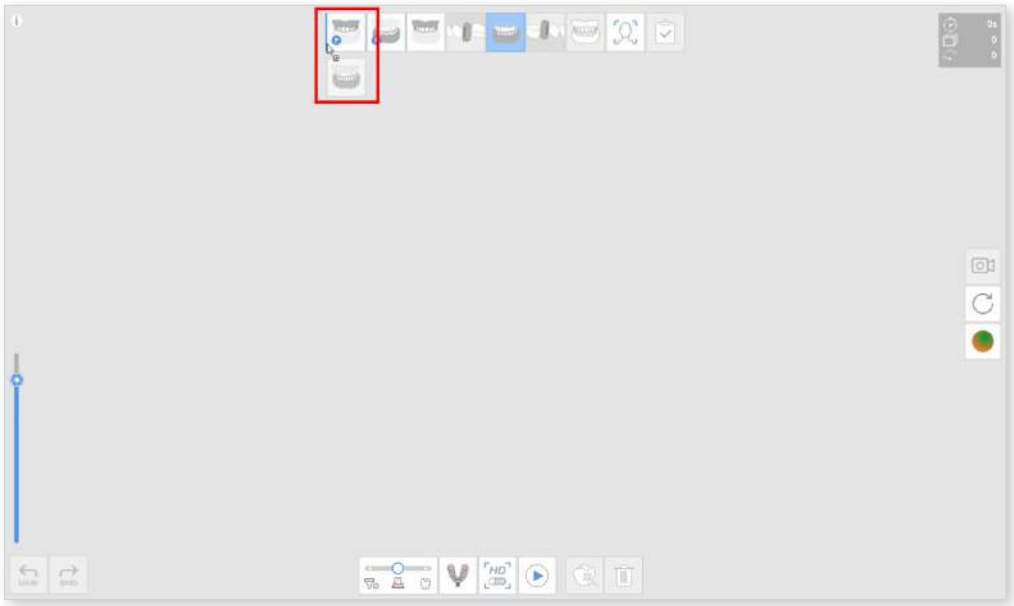


Changing Sequence of Scan Stages

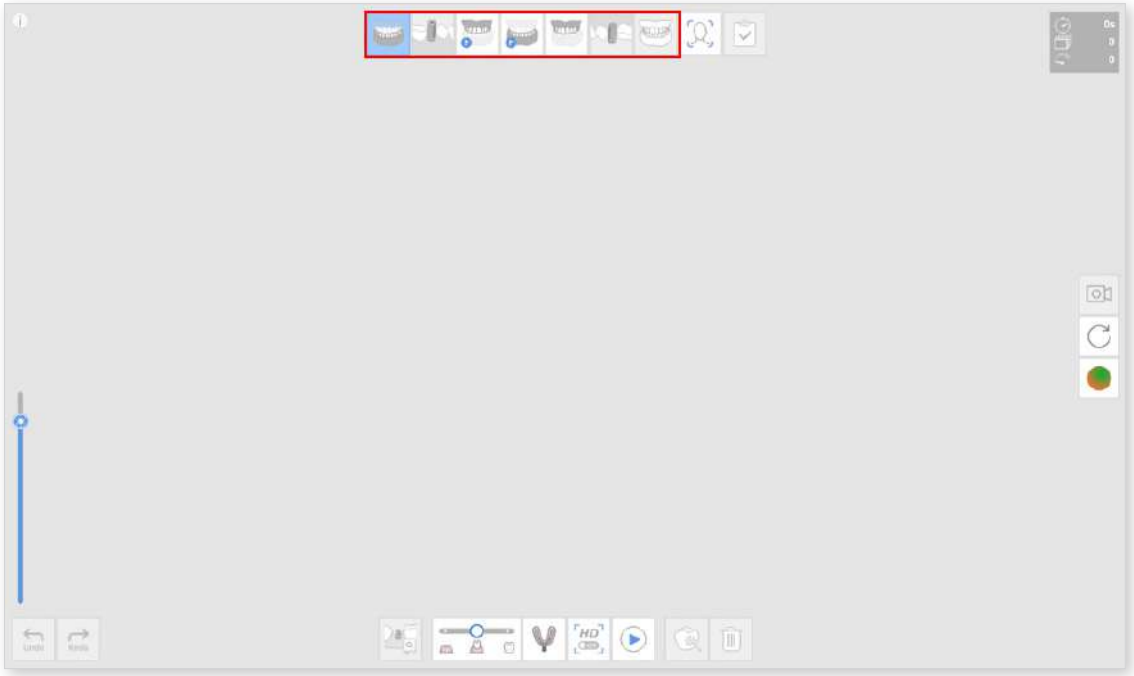
① Change the sequence of scan stages.



② To change the sequence, click and drag the icon until a blue line appears. Then, drop the icon at the desired position.



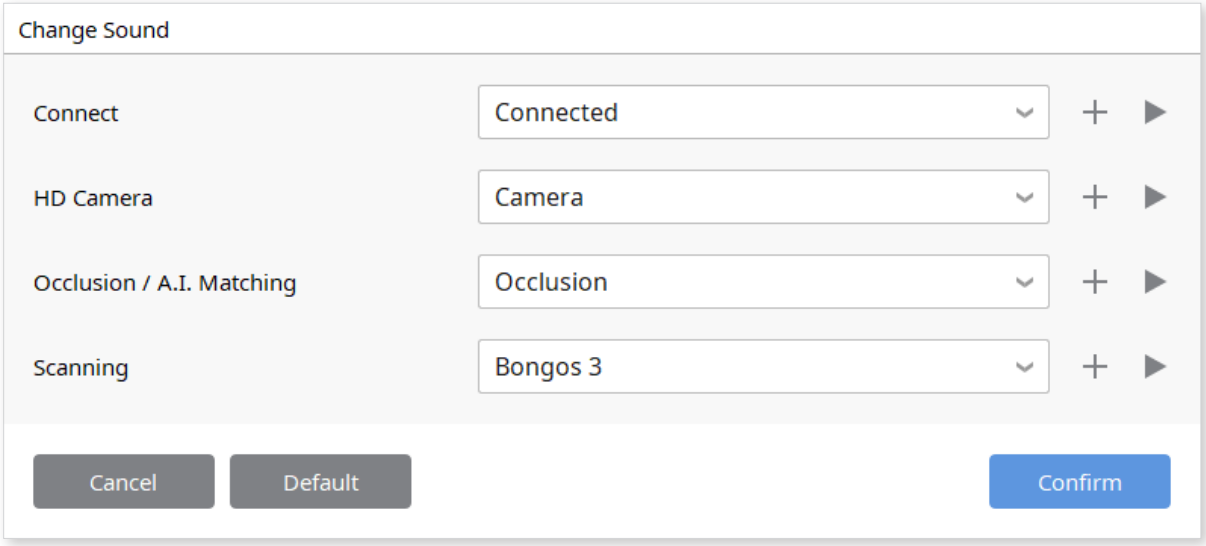
③ For example, here the maxilla is moved to the first position as the first stage of scan process. The arch and scan body stages are moved together as a group. A new sequence will be saved for the next scan.



Before Changing the Sequence	
After Changing the Sequence	

Change Sound

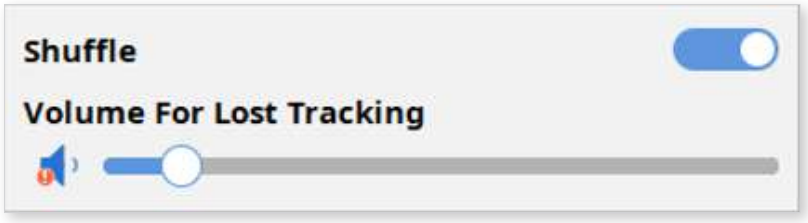
Use various file formats for the audio feedback such as .wav, .mp3, and .wma. All audio files created by the user are added to a list.



+	Add to List	Adds the file to the list. Available formats are WAV, MP3, and WMA.
▶	Play	Plays the selected sound file.

The list management tool is provided to manage items on the list.

For Scanning Sound, two special options are provided for when scanning is in progress.



Shuffle	Plays the files on the list in random order. Different scanning sounds can be used each time Medit Scan for Clinics is executed.
Data Tracking Loss Volume	Changes the volume if the alignment fails.

Manual Paring

* Available only with i700 wireless.

The i700 wireless system has information about the transmitter mounted on the scanner and the receiver on the wireless hub. The scanner is designed to automatically try to pair with the registered wireless hub when it is turned on.

However, manual paring is required to register new device information.

- When using a single hub
  Manual pairing is required to pair with a replacement hub.
- When using multiple hubs
  Manual paring is required to pair with additional hubs.

How to Pair Manually

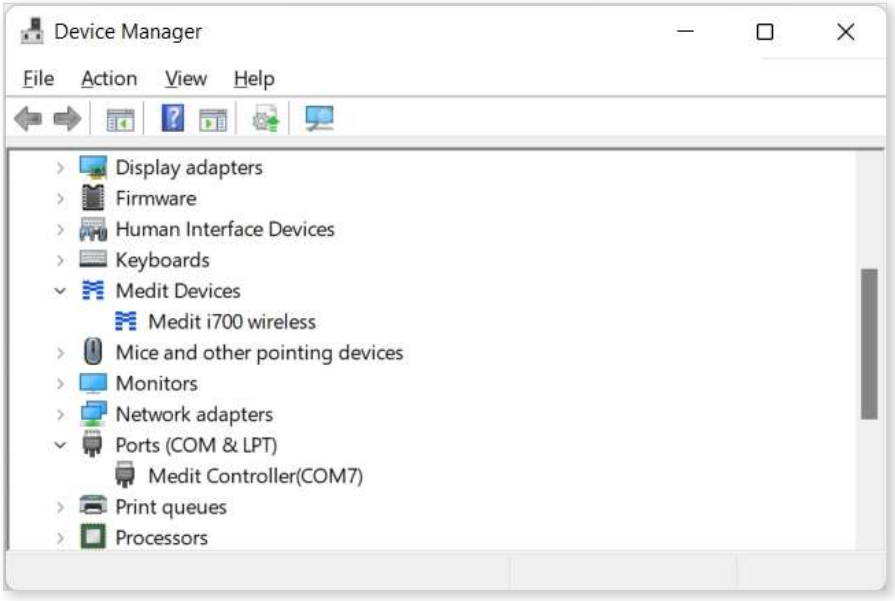
① Connect a replacement hub or new hub with your computer or laptop.

> Make sure the LED on the hub is blinking.

> The scanner must be turned off to start pairing.

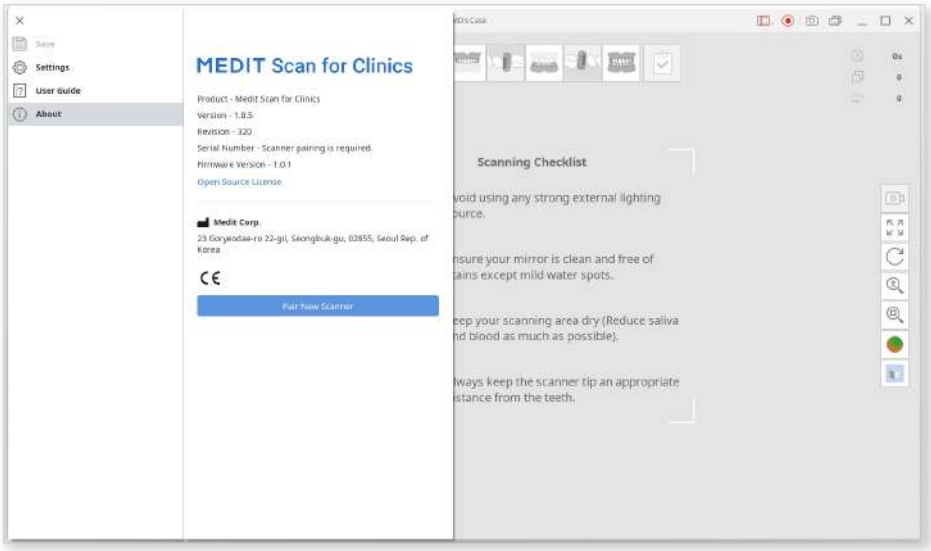
② Go to Control Panel > Device Manager on your computer and check if the following two items appear on the list.

- Medit Device > Medit i700 wireless
- Port (COM & LPT) > Medit Controller



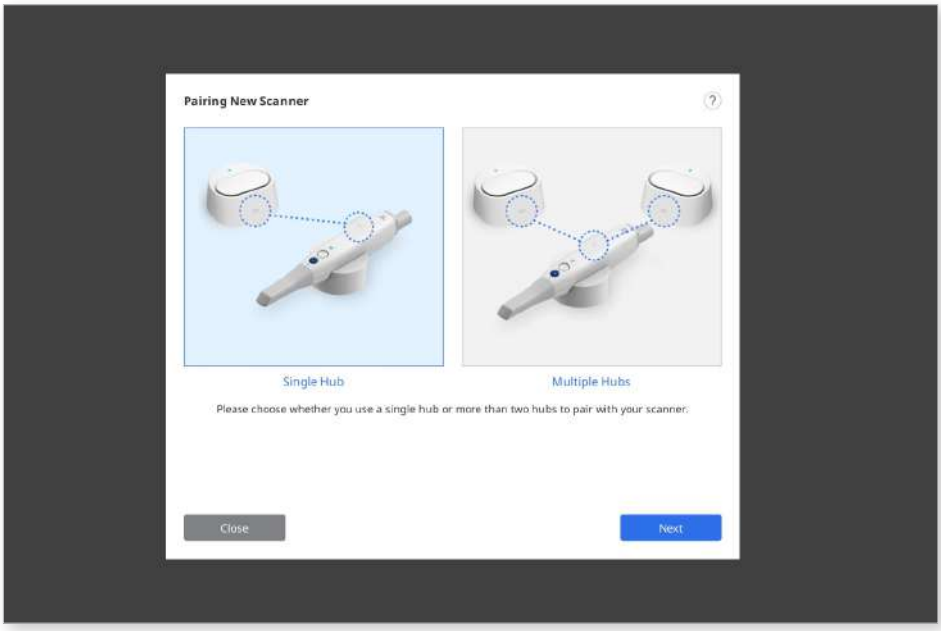
③ Connect a new wireless hub that has never been paired to your computer before and run the Scan for Clinics. Then a manual paring wizard titled “Pairing New Scanner” appears.

If the wizard does not appear automatically, go to Menu > About > Pair New Scanner.

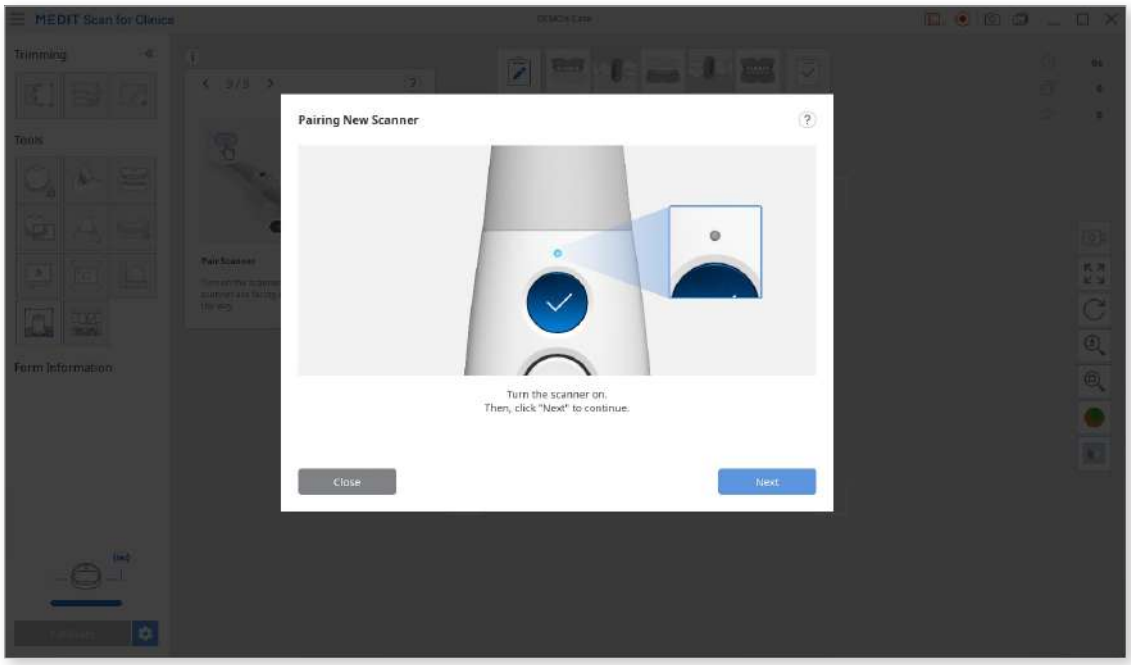


④ Select Single Hub or Multiple Hubs according to the number of hubs you use.

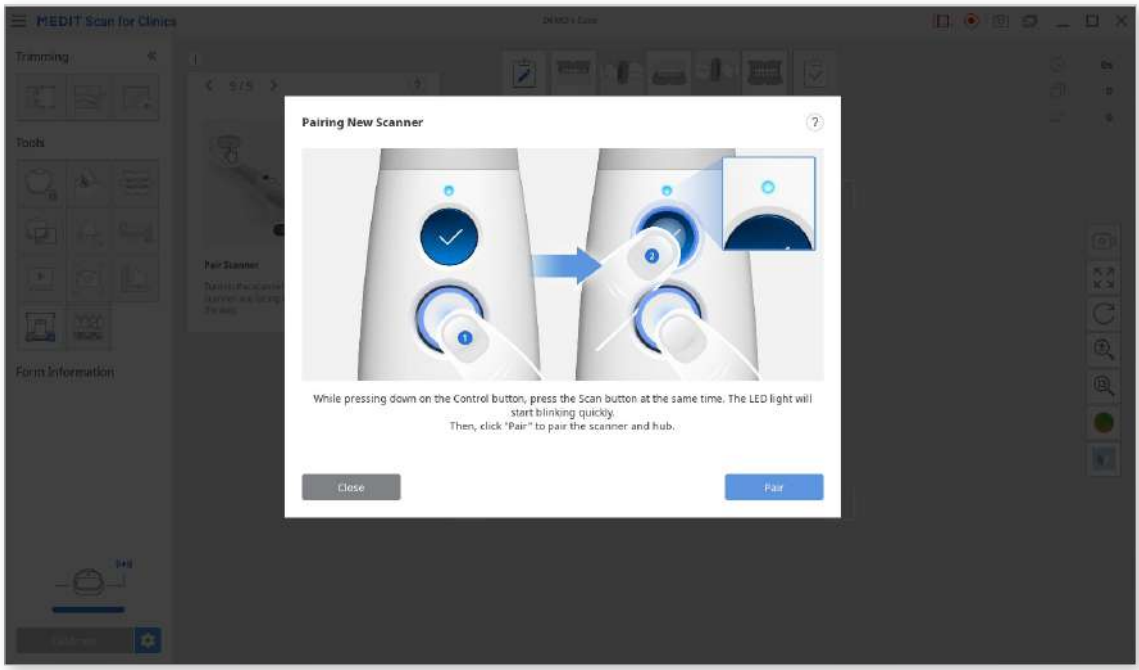
- Single hub
  Register a scanner to a single wireless hub. (i.e., when you pair with a replacement hub)
- Multiple hubs
  Register a scanner to multiple wireless hubs (i.e., when you pair with a newly added wireless hub)



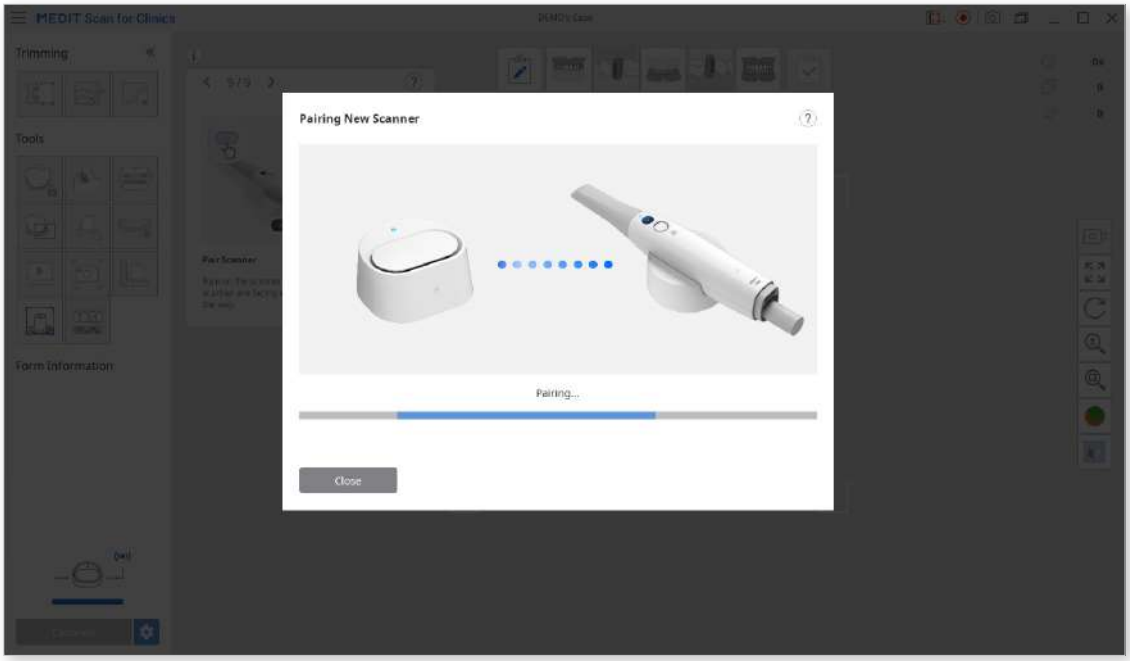
⑤ Turn the scanner on and click the “Next”.



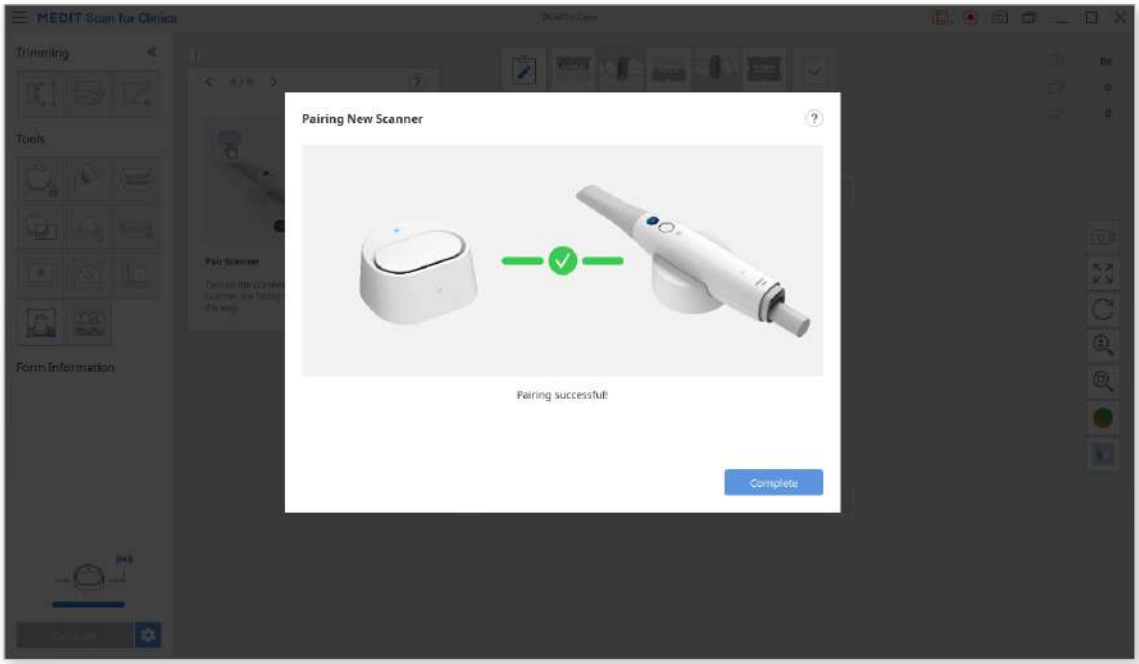
⑥ First hold down the scanner’s Control button, then press the Scan button at the same time. When the scanner’s LED blinks quickly, release your finger from both buttons. Click the Pair button on the screen. The scanner starts to pair with the hub.



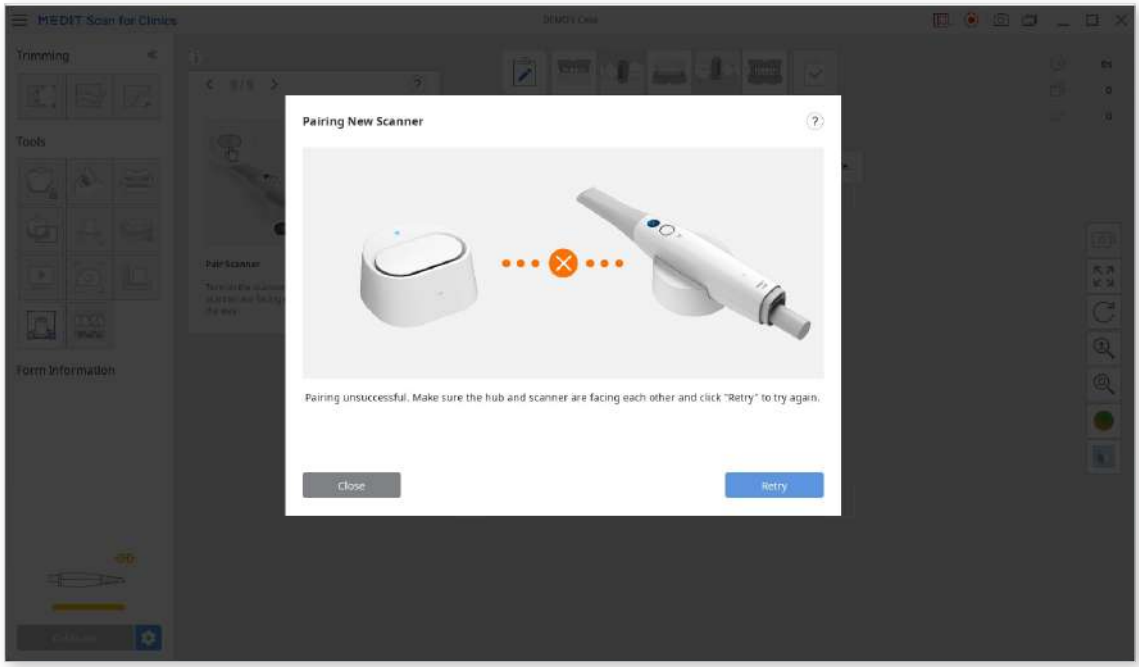
⑦ Try not to disturb the communication between the scanner and the hub while trying to pair. Be sure not to remove the scanner battery or disconnect the hub from your PC.



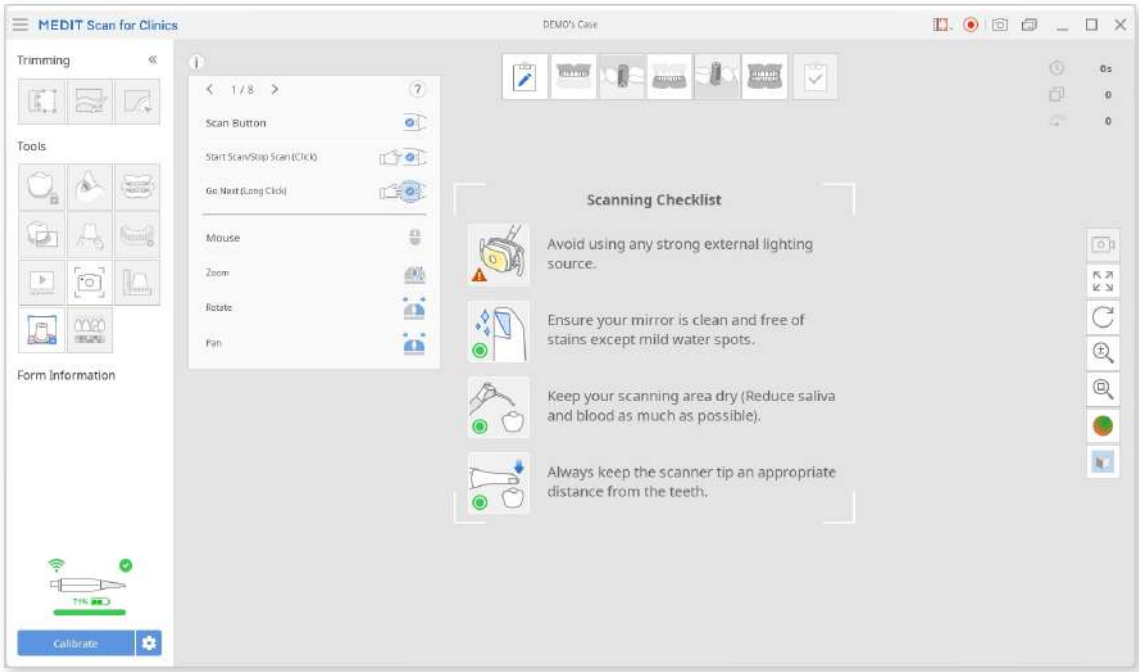
⑧ The “Pairing successful!” message appears when the manual pairing process completes as follows.



You may see the failure message when the connection is unstable or when the scanner fails to pair with the hub. Then restart manual paring from the beginning.



⑨ When pairing is done, click the “Complete” to close the dialog and check the scanner status at the bottom left.



Switch & Scan

* Available only with i700 wireless.

Switch & Scan feature is to register a single scanner to two or more wireless hubs and switch connections between hubs. This feature allows you to carry a scanner from room to room and connect to any wireless hub in your clinic.

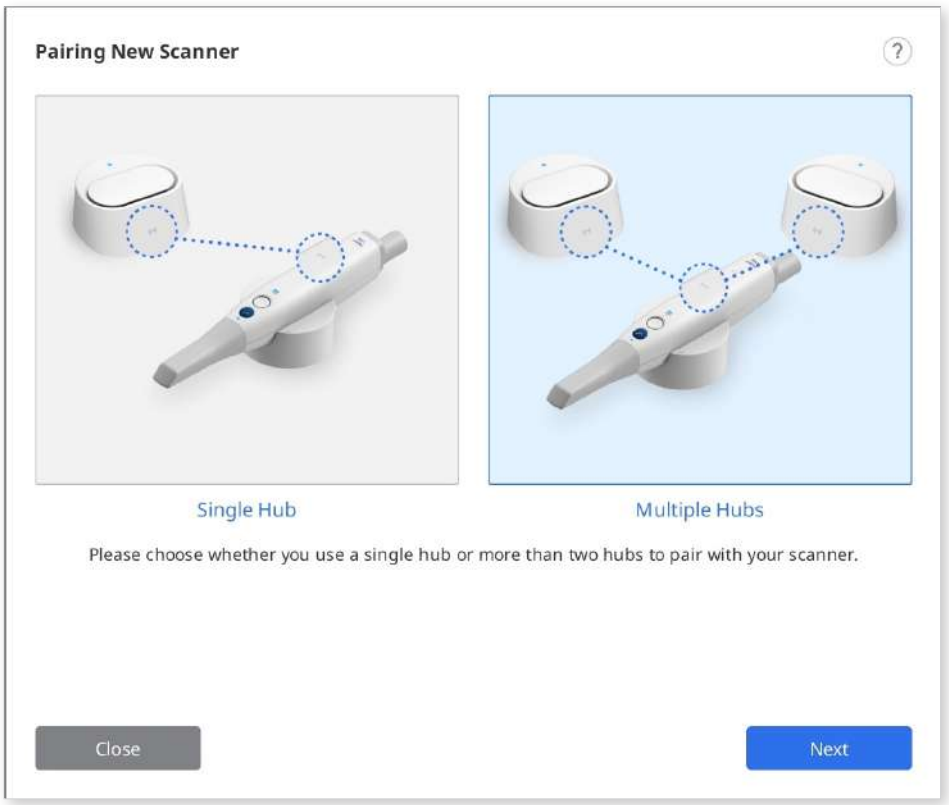
First, you need to register the device information of your scanner and wireless hub by manual pairing. Unregistered scanners and wireless hubs cannot connect with each other, no matter how strong the connection signal is.

How to Switch & Scan

① Make sure your firmware is up to date before using the Switch & Scan feature. (See **Firmware Update** for more information about how to update firmware)

② If you connect with a new hub that has never connected to your scanner, manual pairing is required to register the scanner to the new hub. (See **Manual Pairing** for more information about how to pair manually).

> You must select the Multiple Hubs option while manual pairing process for Switch & Scan.



③ Make sure both your scanner and the hub to connect with are turned on. You can connect the scanner and the wireless hub without running the Medit Scan for Clinics.

④ Press the center of the Control button for more than two seconds.

⑤ The scanner will vibrate briefly three times. That means you are ready to use Switch & Scan.

> If you press and hold the center of the Control button, but the scanner does not generate three short vibrations, you may not have pressed the center of the Control button correctly. Try again to press the exact center of the Control button.

⑥ The scanner generates a short vibration when successfully connected with a wireless hub.

⑦ Run the program and start scanning.

> If you have multiple wireless hubs in an unclosed workspace, the scanner may be connected to a hub other than the one you want to connect to.

> If you try to connect between two wireless hubs, the scanner may be connected to a hub other than the one you want to connect to.

> If the scanner fails to connect, get closer to the wireless hub you want to connect to and try again to connect by pressing the center of the Control button for more than two seconds.

Software & Firmware Updates

Image Acquisition Software Updates

The image acquisition software automatically checks for updates when the software is running.

When a new version of software is available, the system will automatically download it.

Scanner Firmware Update

We recommend you keep the firmware version of your wireless hub up to date to enjoy newly added functions or improvements fully.

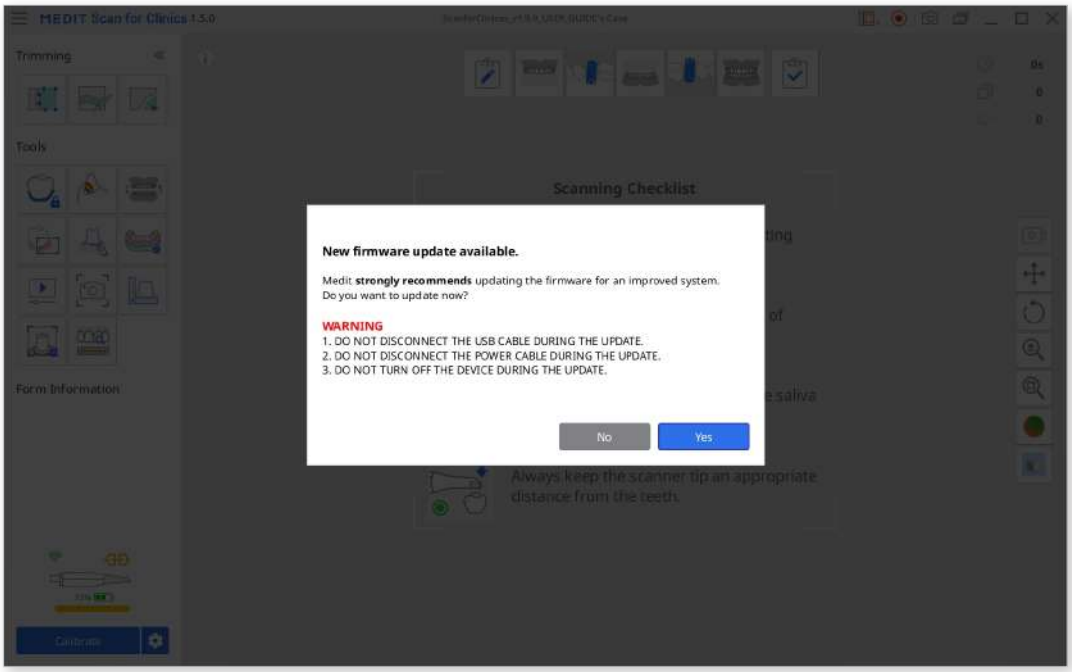
> Even if you do not immediately proceed with the firmware update, you can still use the existing functions.

The program automatically installs the latest firmware when a new update is available as follows:

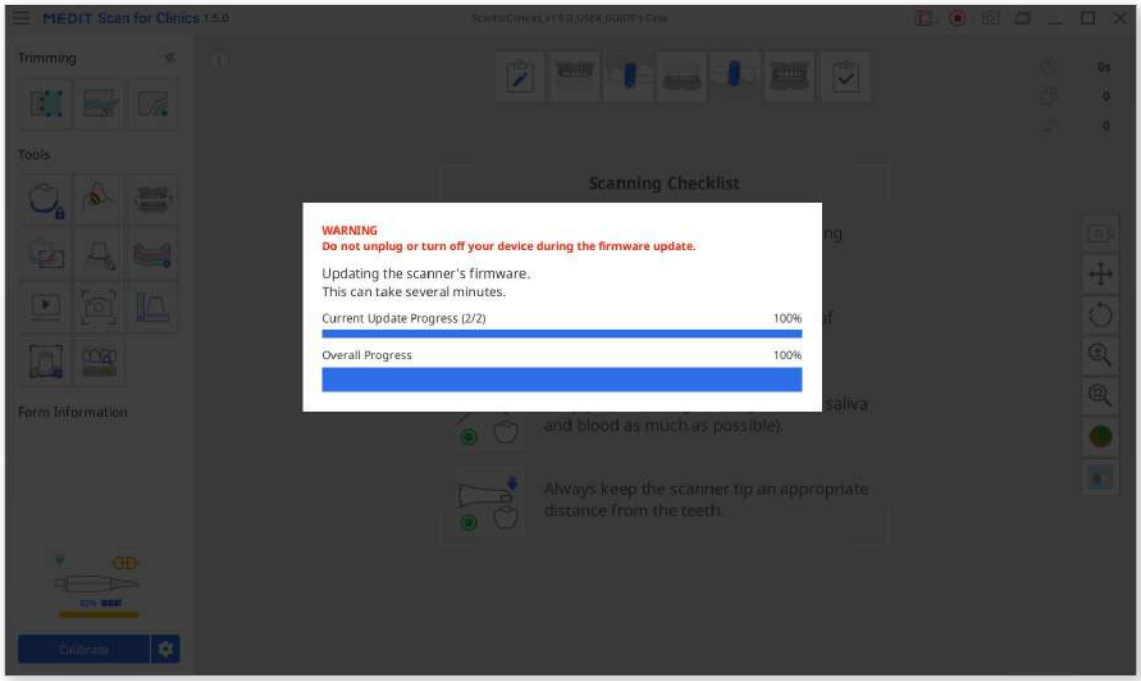
① Make sure your wireless hub is connected to your computer with a cable and your scanner is connected to the hub for firmware update.

② Run Medit Scan for Clinics.

③ The following dialog appears when the program is opened when a new firmware is available.

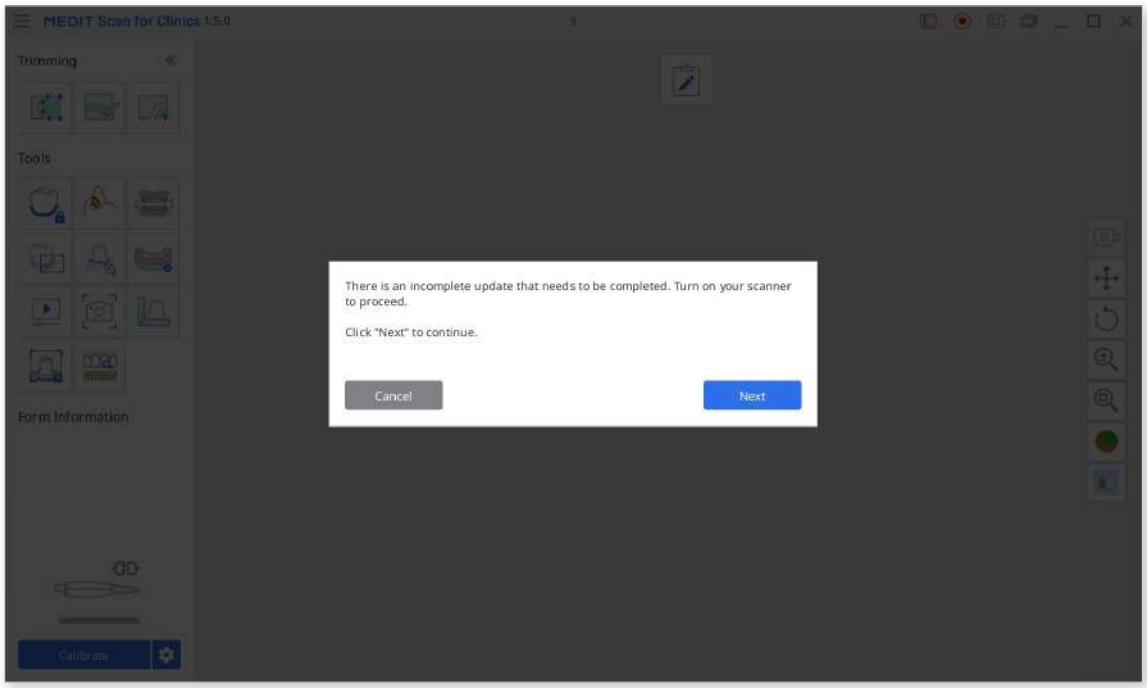


④ Select “Yes” to continue firmware updating.

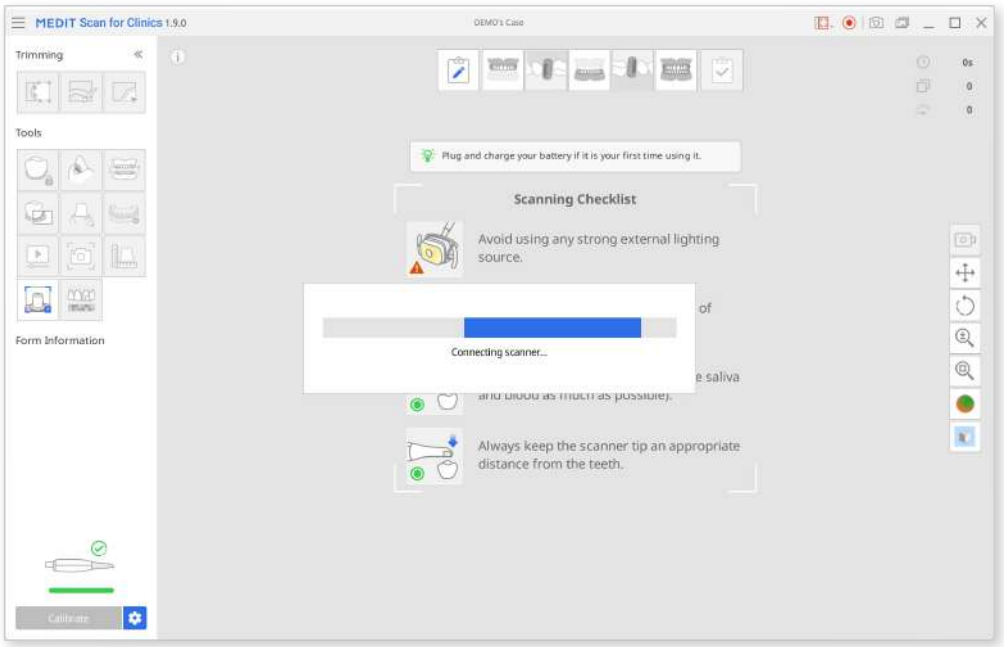


The update can be stopped if the hub is disconnected from the local PC or the scanner has a low battery.

You can continue to update firmware by reconnecting the hub to the PC and rerun the program.



⑤ When the firmware is updated, the hub will try to connect the scanner again.



⑥ You can check your current firmware version on “Menu > About > Firmware Version”.

Intelligent User Guidance System

Intelligent User Guidance System pre-determines what may happen to the user when using Scan for Clinics and provides appropriate guidance via notifications. It aims to help users acquire accurate scan data results and use the program with ease.

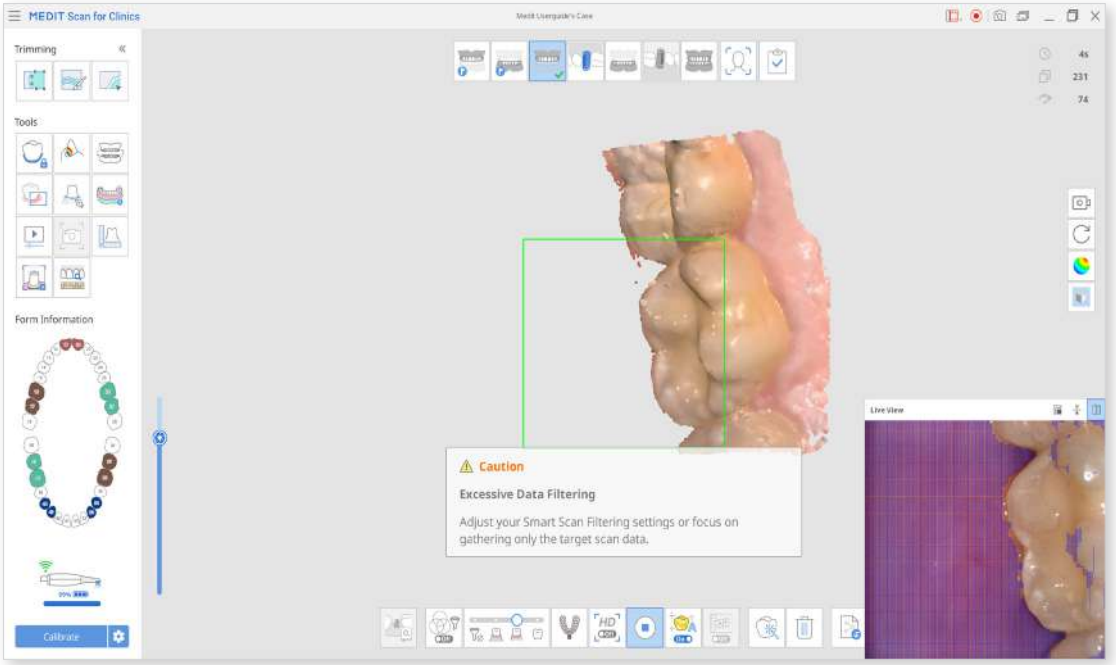
Smart Scan Guide

The Smart Scan Guide provides user guidance when it detects any abnormal behavior while gathering scan data.

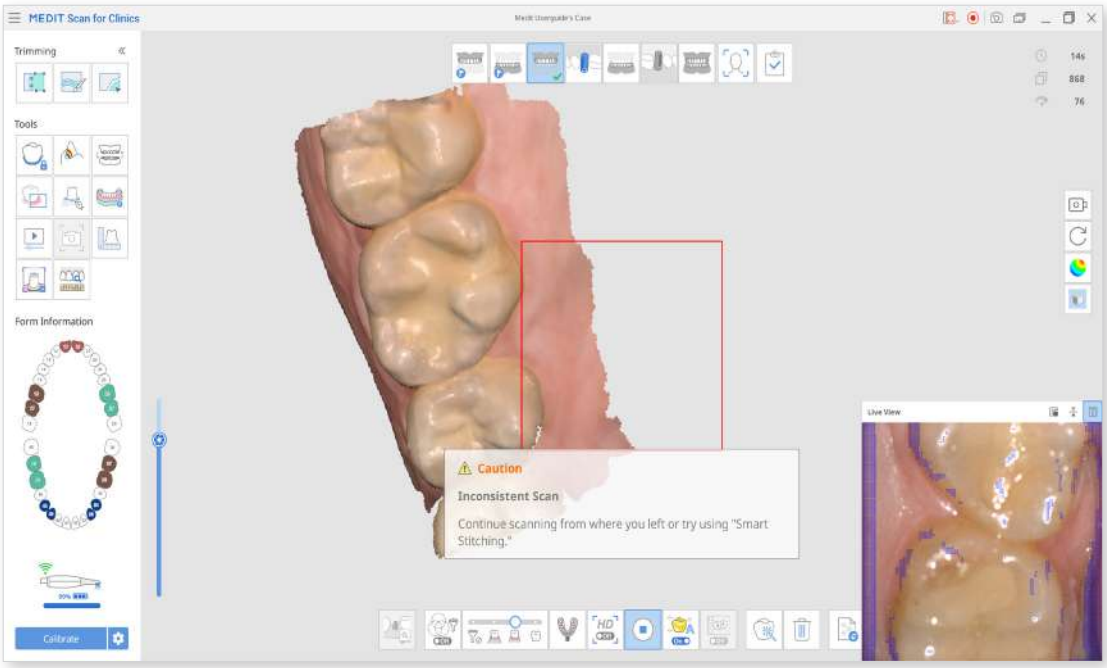
A concise notification-type message pops up at the bottom. The message automatically disappears after a period of time or if the situation is resolved.

There will be an additional guide provided in the information window when the scan stops.

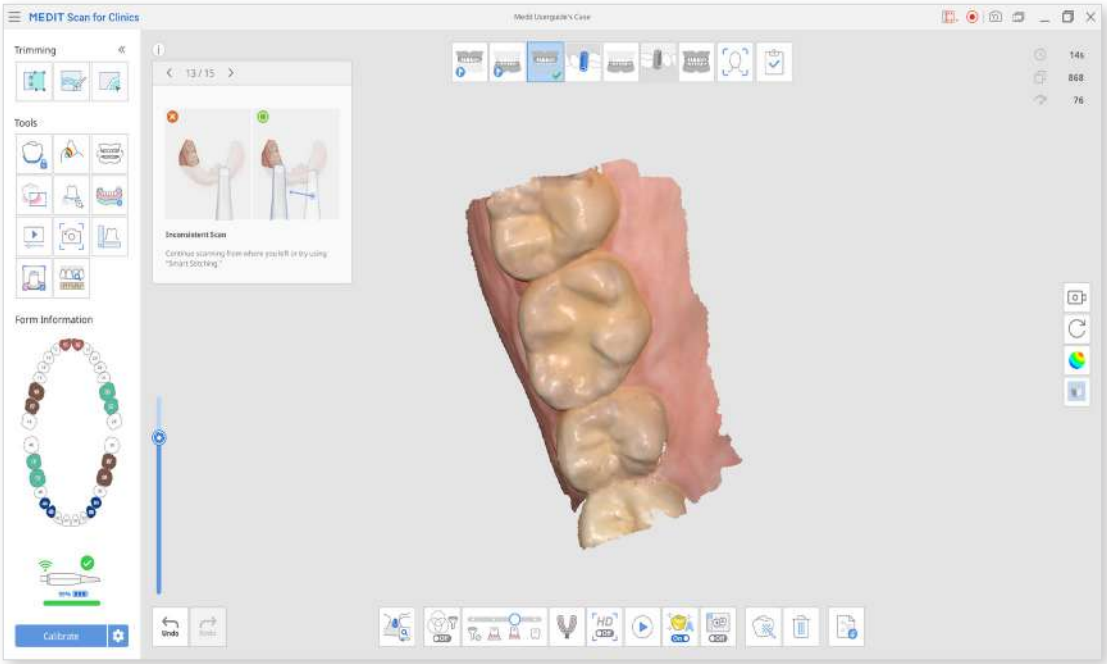
- If there is too much data filtered out while scanning using Smart Scan Filtering:



- If the scan is inconsistent and the scan continues from a new place (when Smart Stitching is turned off):



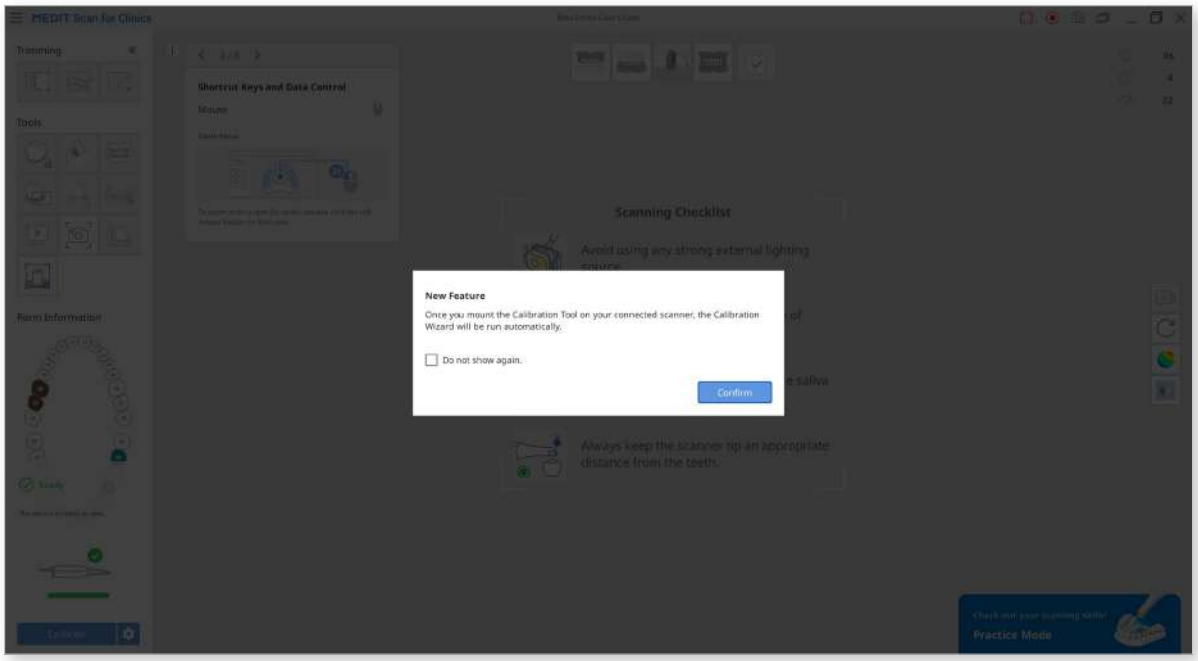
- The image below shows the additional guidance message that pops up on the right when scan is stopped.



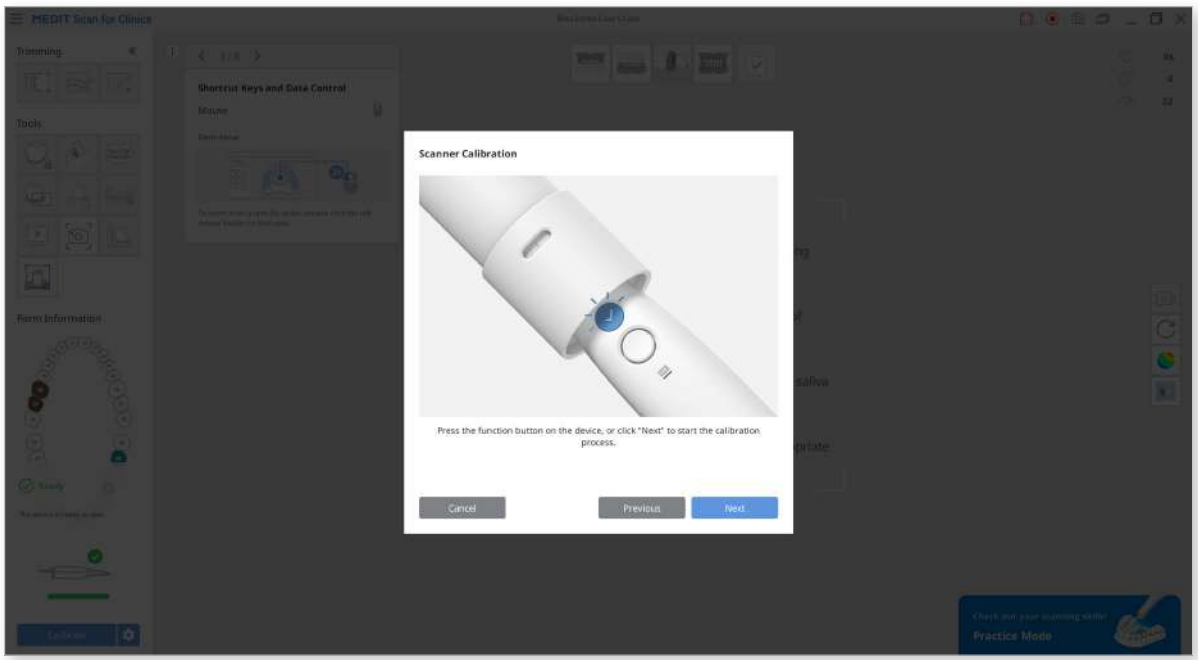
Calibration Tool Dialogue

*Unavailable with i500

When you insert the scanner into the calibration tool, it automatically recognizes the calibration tool and executes the scanner calibration dialogue. This is only available for the i700.



Skip the preparation steps and perform calibrations more quickly and conveniently, following the dial positions.

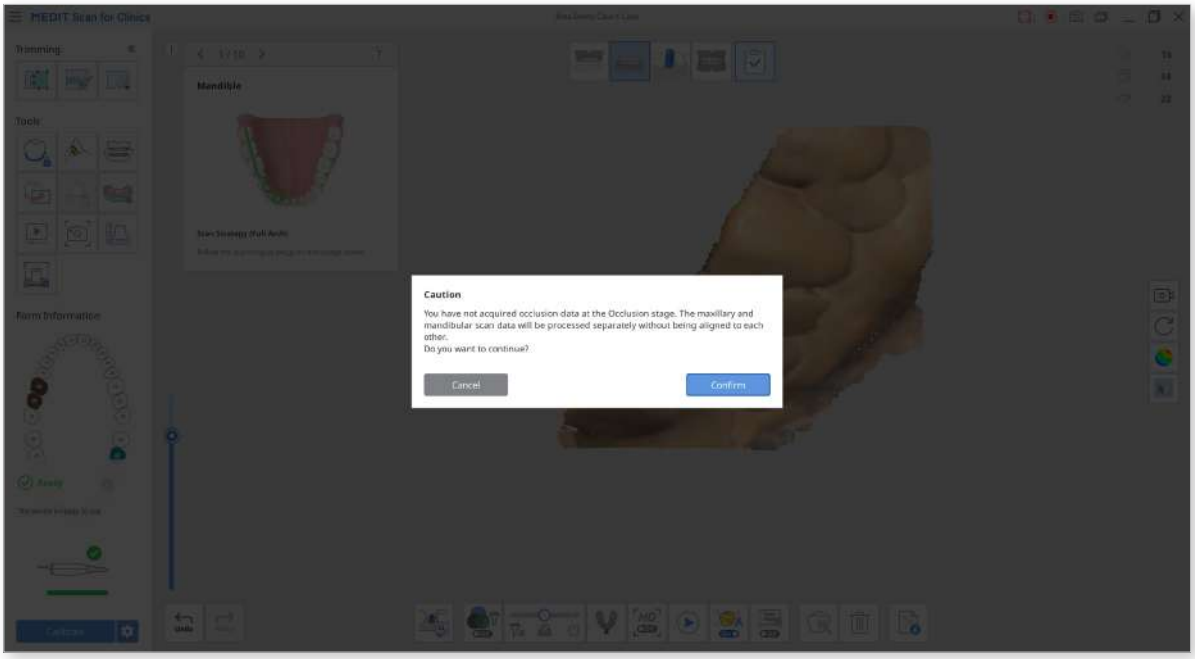


Warning for Occlusal Data

Occasionally, there are cases where the acquired patient’s oral scan data displayed on Medit Link is not aligned correctly. You could contact the patient who has left the clinic and request a revisitation. However, this is now preventable with the “Warning for Occlusal Data.” The notification gently reminds you by asking you to confirm if the occlusal scan data has been acquired/aligned.

When the user clicks “Complete” after scanning the data, the program checks the data and its alignment status acquired during the occlusion scan stage.

If there is no data obtained during the occlusion scan stage, the notification below will appear.



The notification below will appear if the scan data obtained in the occlusion scan step is not aligned with the Maxilla and Mandible.

There is either no occlusion scan data or the Maxilla and Mandible scan data are not aligned properly.