



DENTURE GUIDE[®] METHOD

USER MANUAL
2D Digital Preview and Maestro 3D Dental Studio



Scan the QR Code and watch the **tutorial videos**
on the Denture Guide[®] Method.

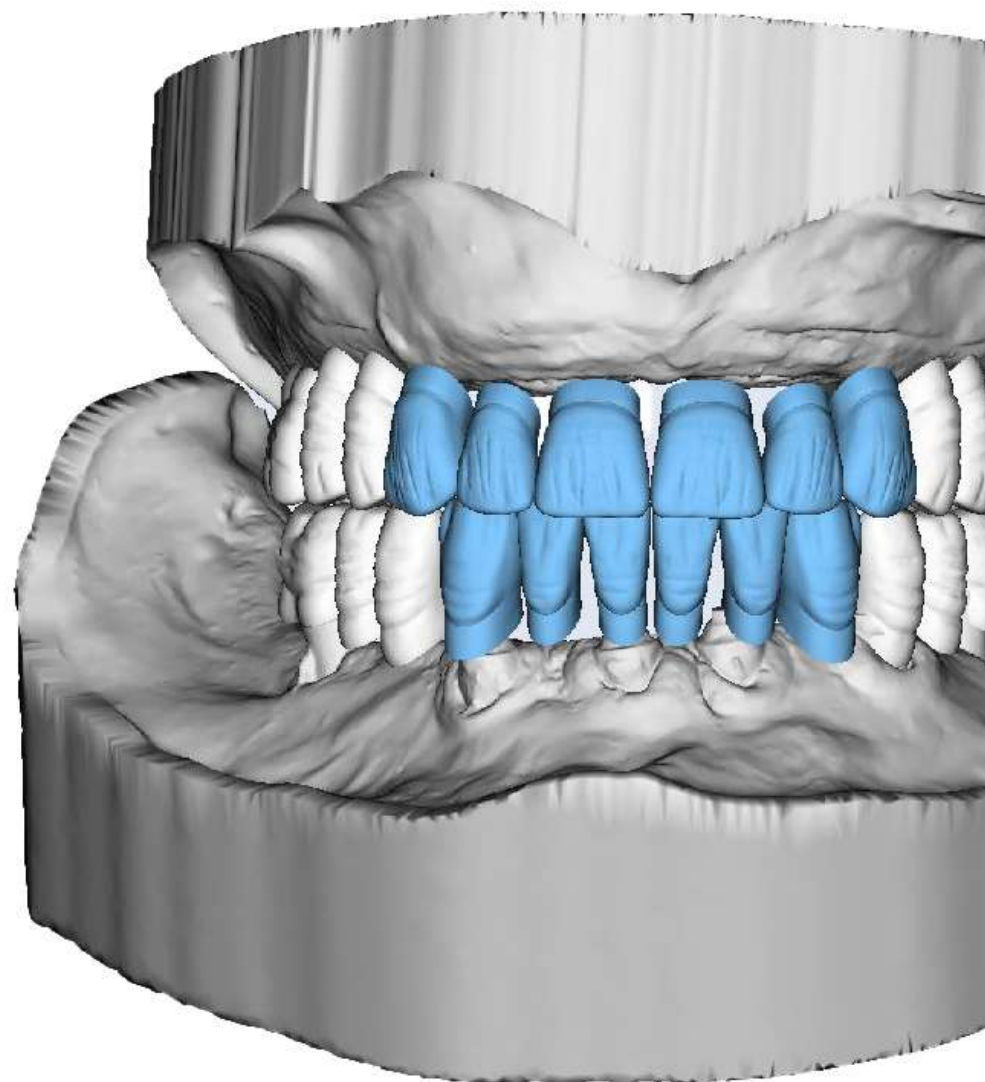
THE RUTHINIUM DIGITAL WORKFLOW!

From Clinical Information Sharing to Final dentures.

Ruthinium Digital workflow has the goal of improving efficiency without disrupting traditional dentist workflow. We recognize the importance of preserving established procedures, but at the same time we want to offer concrete support to optimize the entire process.

The key step in our proposal is the acquisition of data using scanners instead of physical models. This approach allows dentists to overcome the challenge of sending physical data to laboratories by replacing this practice with digital transmission. In this way, we simplify the workflow and reduce the inconvenience of physically transporting materials.

The transition to digital data collection represents a significant advance in modern dentistry, allowing practitioners to focus on their medical skills without having to worry about logistics. With our approach, we aim to facilitate this transition and offer dentists a more efficient and convenient way to manage data and collaborate with laboratories.



BITERIMS REFERENCE

The clinician performs the upper wax rim incision through two reference points using the Denture Guide calibrator.



PHOTOGRAPHIC PROTOCOL

Patient seated with straight back and with support behind the back of the head
Vertical camera or new generation smartphone
Aesthetic level parallel to the horizon
Focus on teeth/center of face



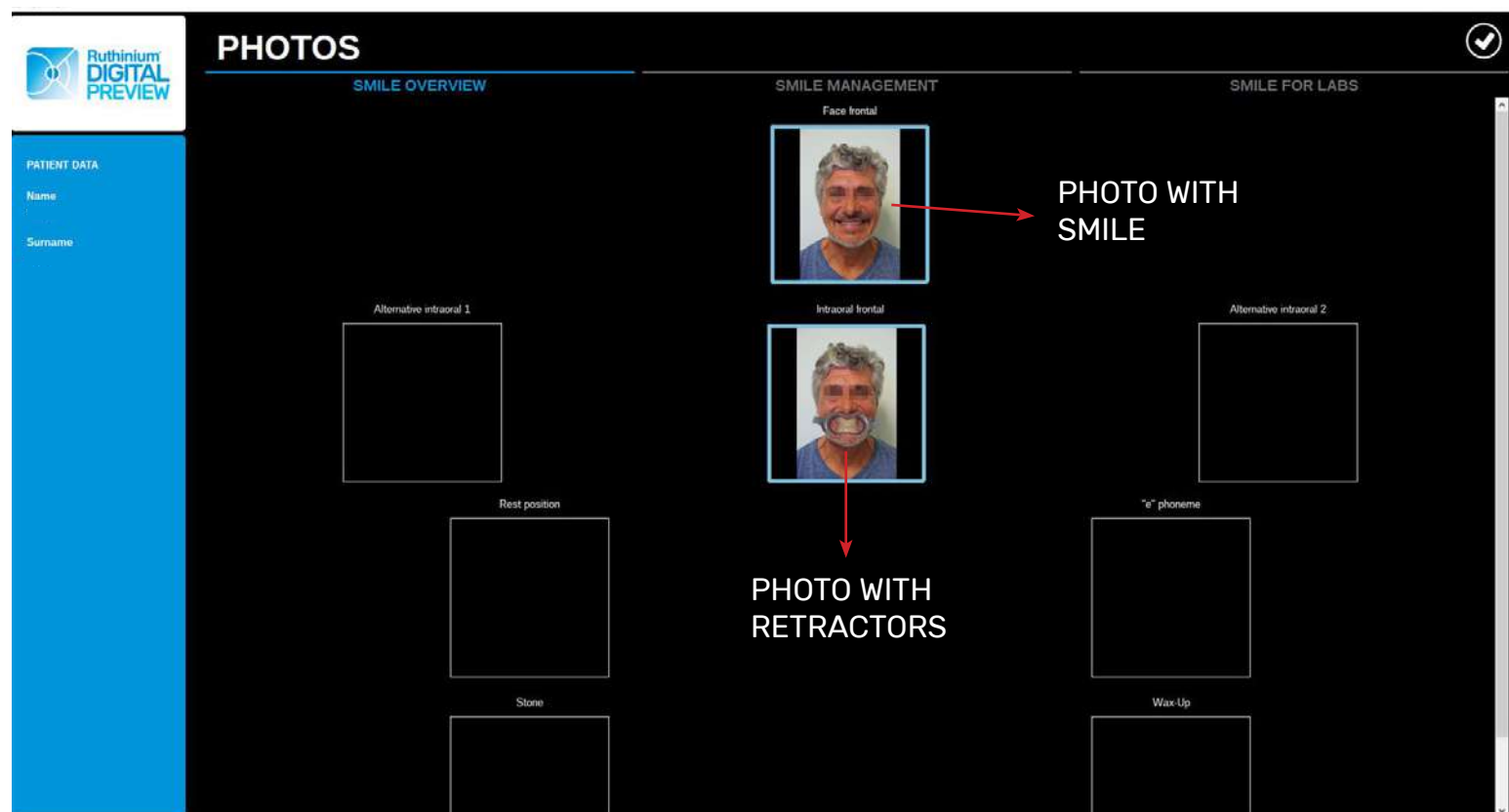


DIGITAL PREVIEW

Photographic previsualization software

1° IMPORTING DATA

Photo with smile and with retractors



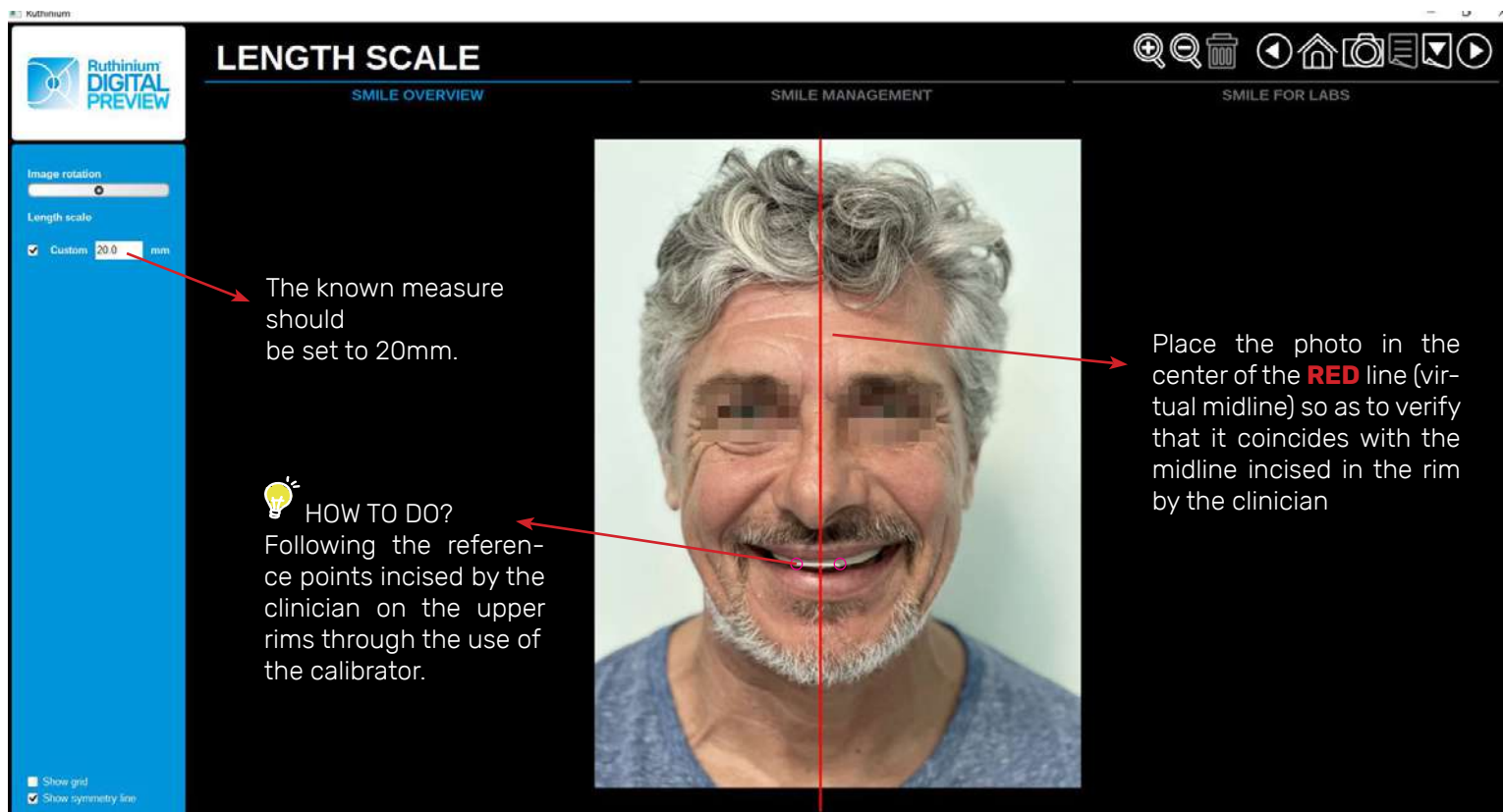


DIGITAL PREVIEW

Photographic previsualization software

2° CALIBRATION

Process of turning photo pixels into actual measurements and to correctly position the midline



LENGTH SCALE

SMILE OVERVIEW | SMILE MANAGEMENT | SMILE FOR LABS

Image rotation: [Slider]

Length scale: ☒ Custom 20.0 mm

The known measure should be set to 20mm.

HOW TO DO?
 Following the reference points incised by the clinician on the upper rims through the use of the calibrator.

Place the photo in the center of the **RED** line (virtual midline) so as to verify that it coincides with the midline incised in the rim by the clinician

☐ Show grid
☒ Show symmetry line



DIGITAL PREVIEW

Photographic previsualization software

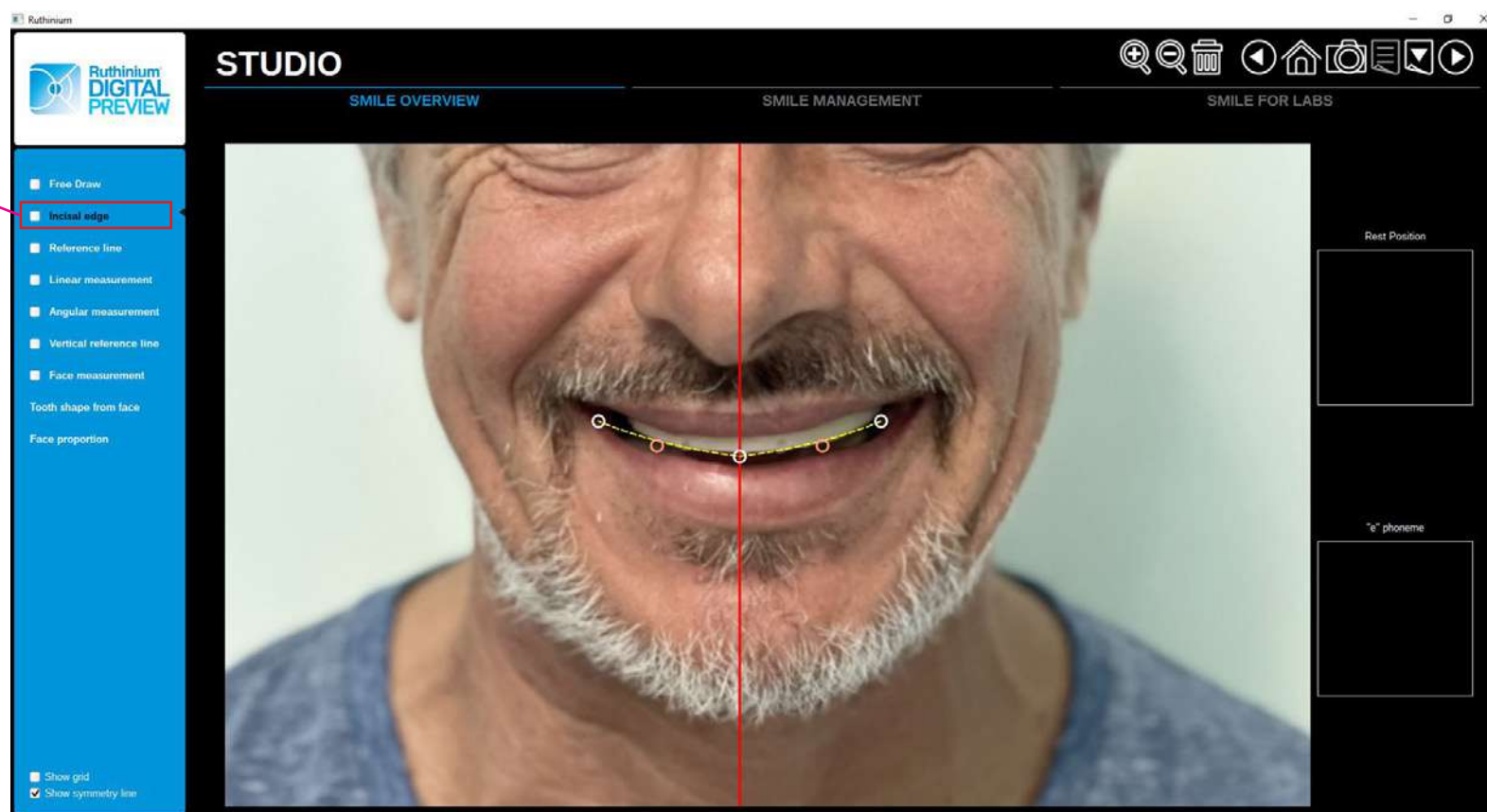
3° FACE ANALYSIS

On the left menu are the following software functions useful as a proper face analysis:

Incisal edge

Clicking in the center of the red line near the upper bi-terim will appear a dynamic trace with which you will outline the occlusal plane.

Automatically **two orange dots** will appear with which you can modify the arch.





DIGITAL PREVIEW

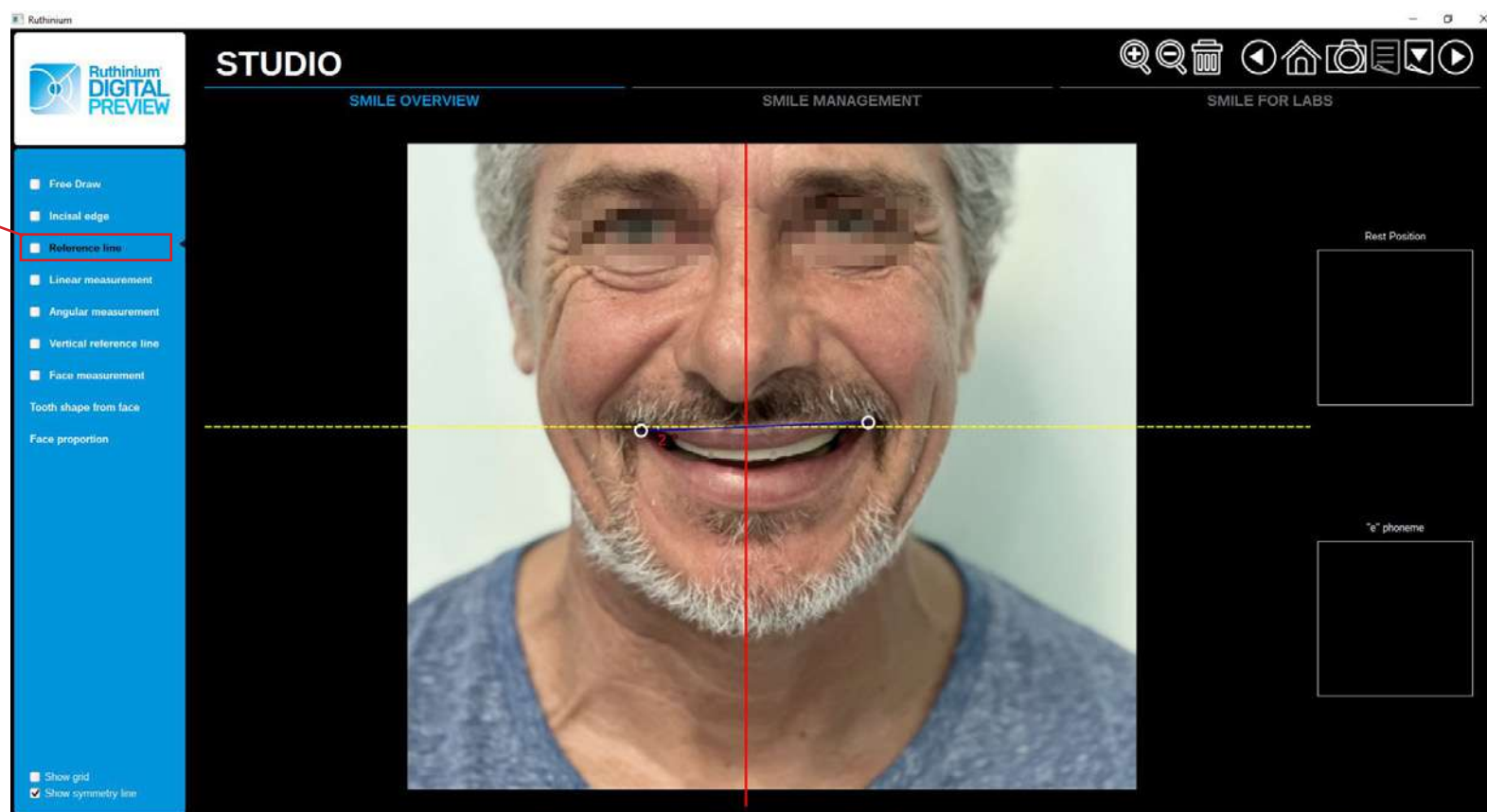
Photographic previsualization software

3° FACE ANALYSIS

On the left menu are the following software functions useful as a proper face analysis:

Reference line

Setting two points will generate a line: this tool allows you to calculate the degree of angle between the two points.





DIGITAL PREVIEW

Photographic previsualization software

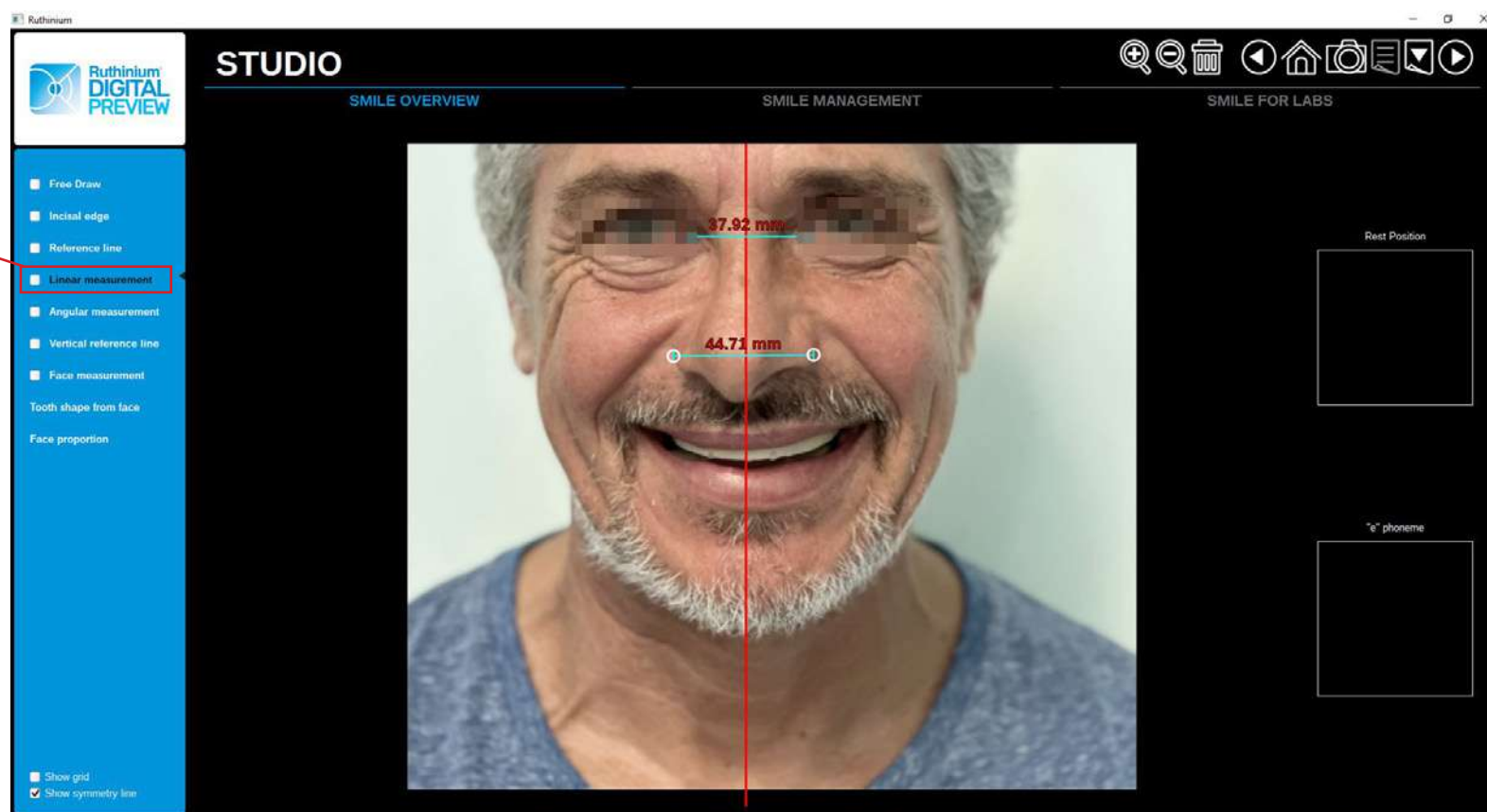
3° FACE ANALYSIS

On the left menu are the following software functions useful as a proper face analysis:

Linear Measurement

Instrument to measure a given space dictated by two points.

Useful for checking the distance between canine and canine.





DIGITAL PREVIEW

Photographic previsualization software

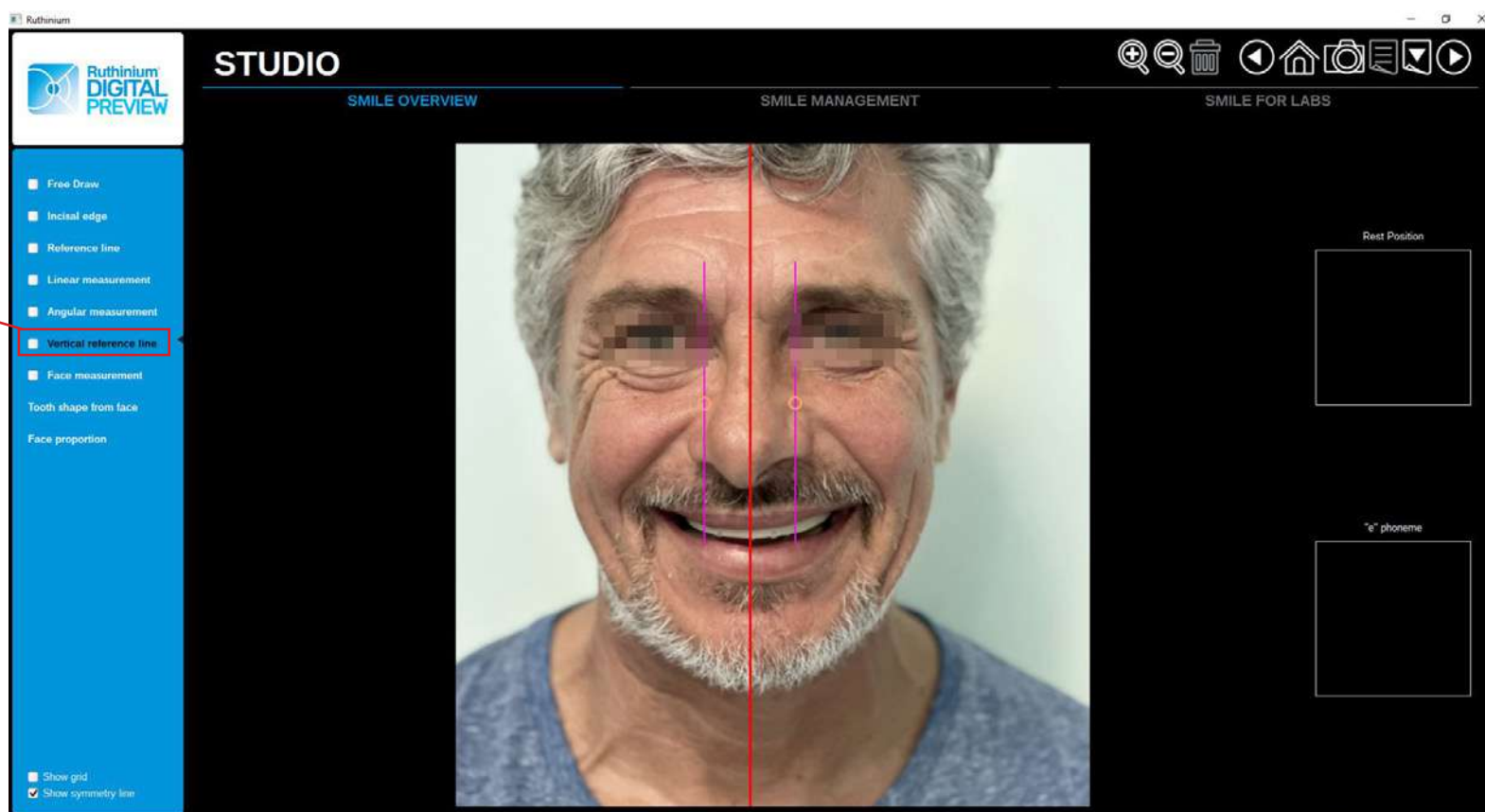
3° FACE ANALYSIS

On the left menu are the following software functions useful as a proper face analysis:

Vertical reference line

Tool to create two vertical lines.

Useful for checking the correct position of canines.





DIGITAL PREVIEW

Photographic previsualization software

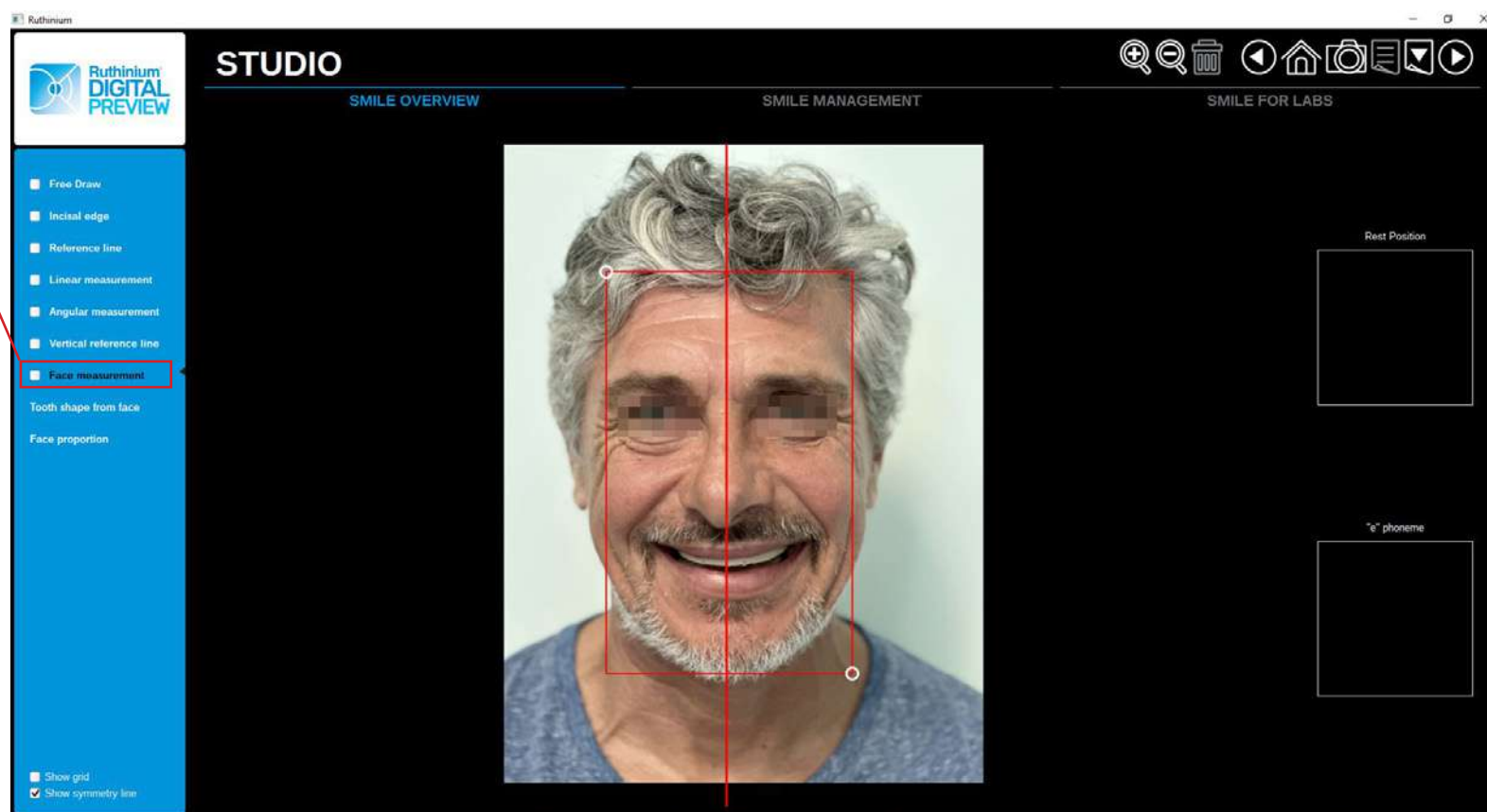
3° FACE ANALYSIS

On the left menu are the following software functions useful as a proper face analysis:

Face measurement

Place the **RED** rectangle in the following way: **The upper side** should correspond to the hairline, (with bald patient it should correspond to the first wrinkle of the forehead). **The lower side** should correspond to the base of the chin. **The laterals** must correspond to the end of the cheekbones.

Through these parameters the software will calculate 1/16th of the area to recommend the correct size of the upper central incisors





DIGITAL PREVIEW

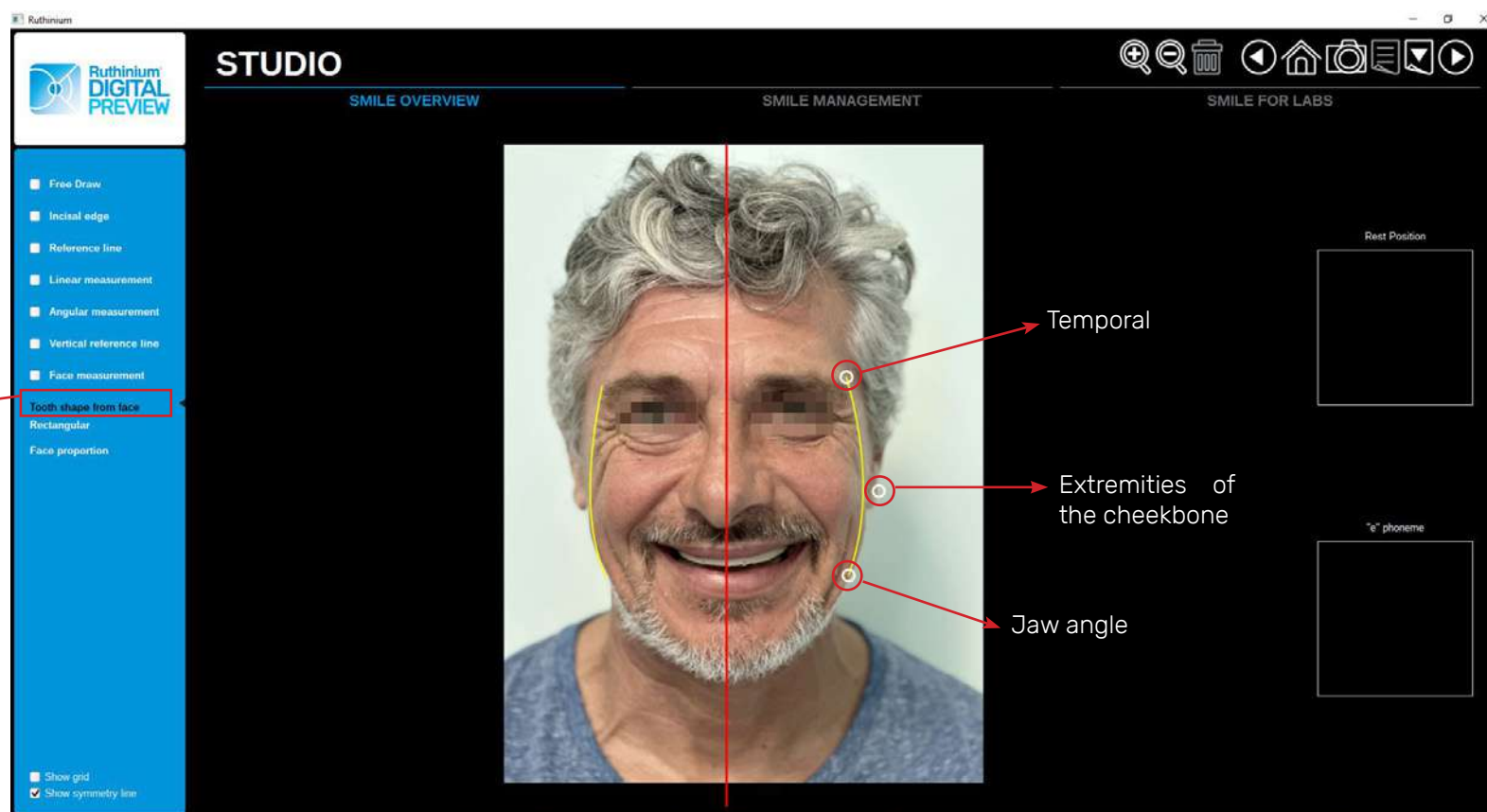
Photographic previsualization software

3° FACE ANALYSIS

On the left menu are the following software functions useful as a proper face analysis:

Tooth shape from face

Useful tool for identifying the ideal shape of the upper central incisors (square, triangular, oval).





DIGITAL PREVIEW

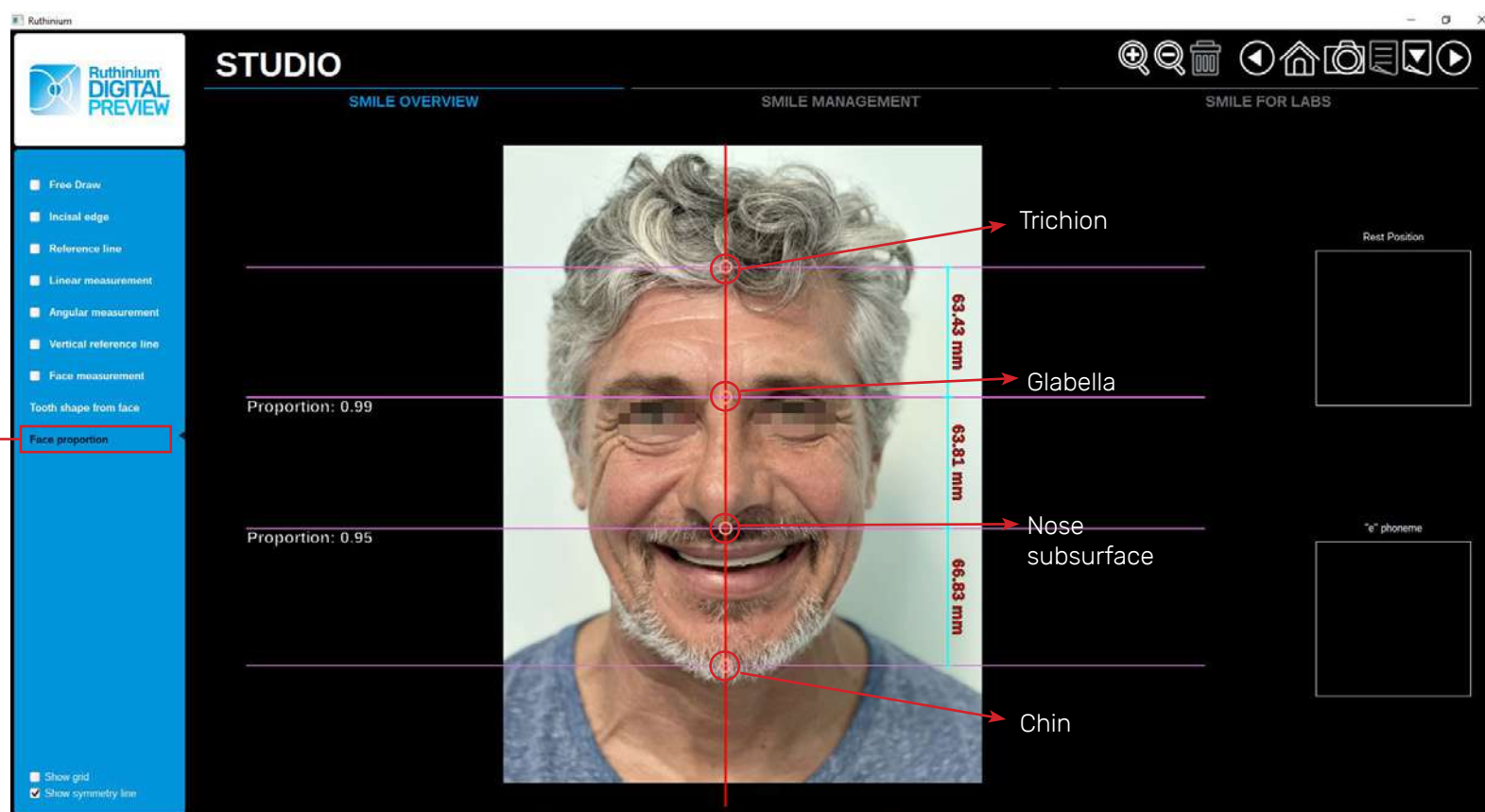
Photographic previsualization software

3° FACE ANALYSIS

On the left menu are the following software functions useful as a proper face analysis:

Face proportion

Useful tool for face analysis based on face proportions.



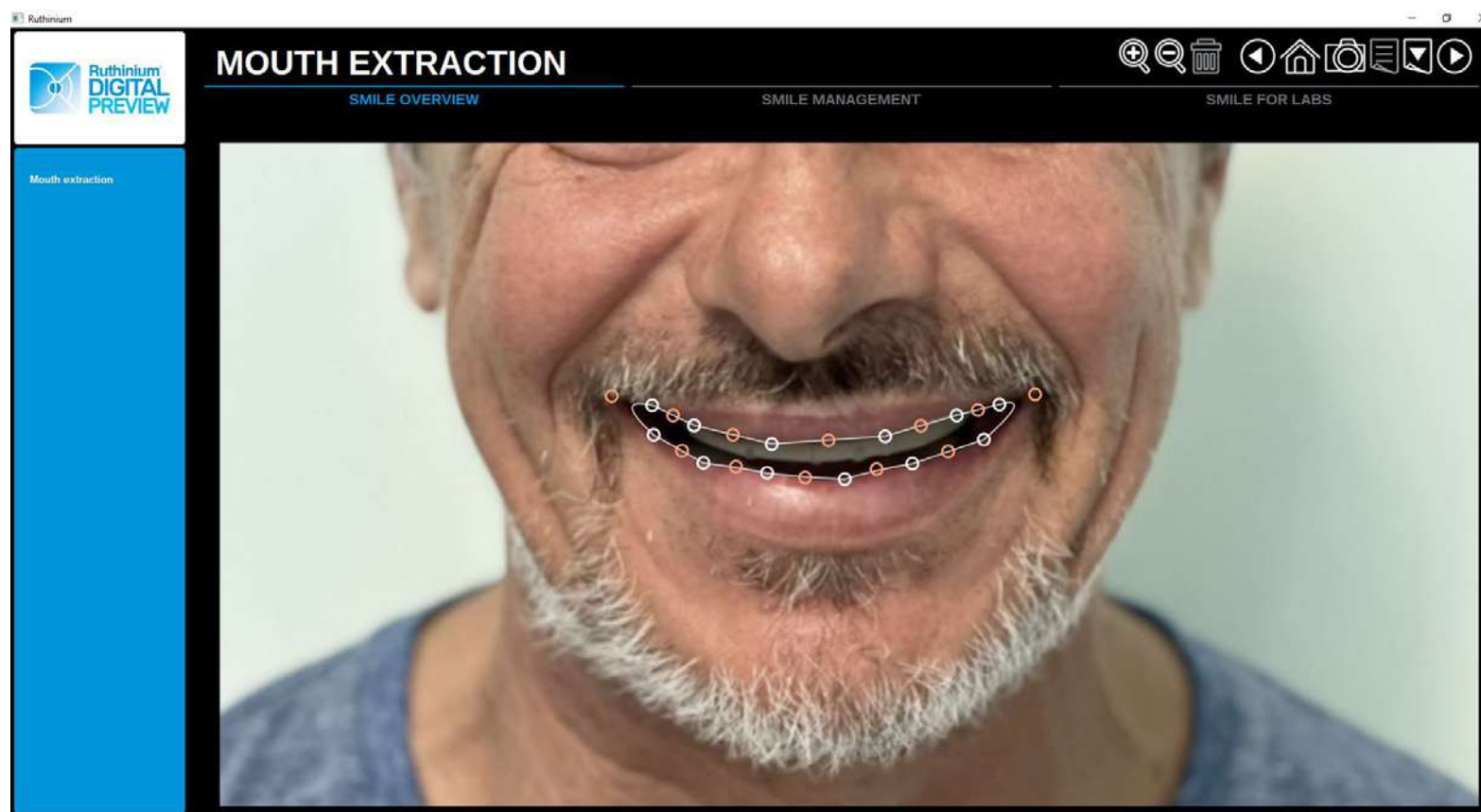


DIGITAL PREVIEW

Photographic previsualization software

4° ENDO-ORAL AREA CUTOUT

Cropping the photo



Following the contour of the lips, a cutout of the endo-oral area is created with a series of white dots.

With **ORANGE** dots you can modify the curves and refine the cutout.

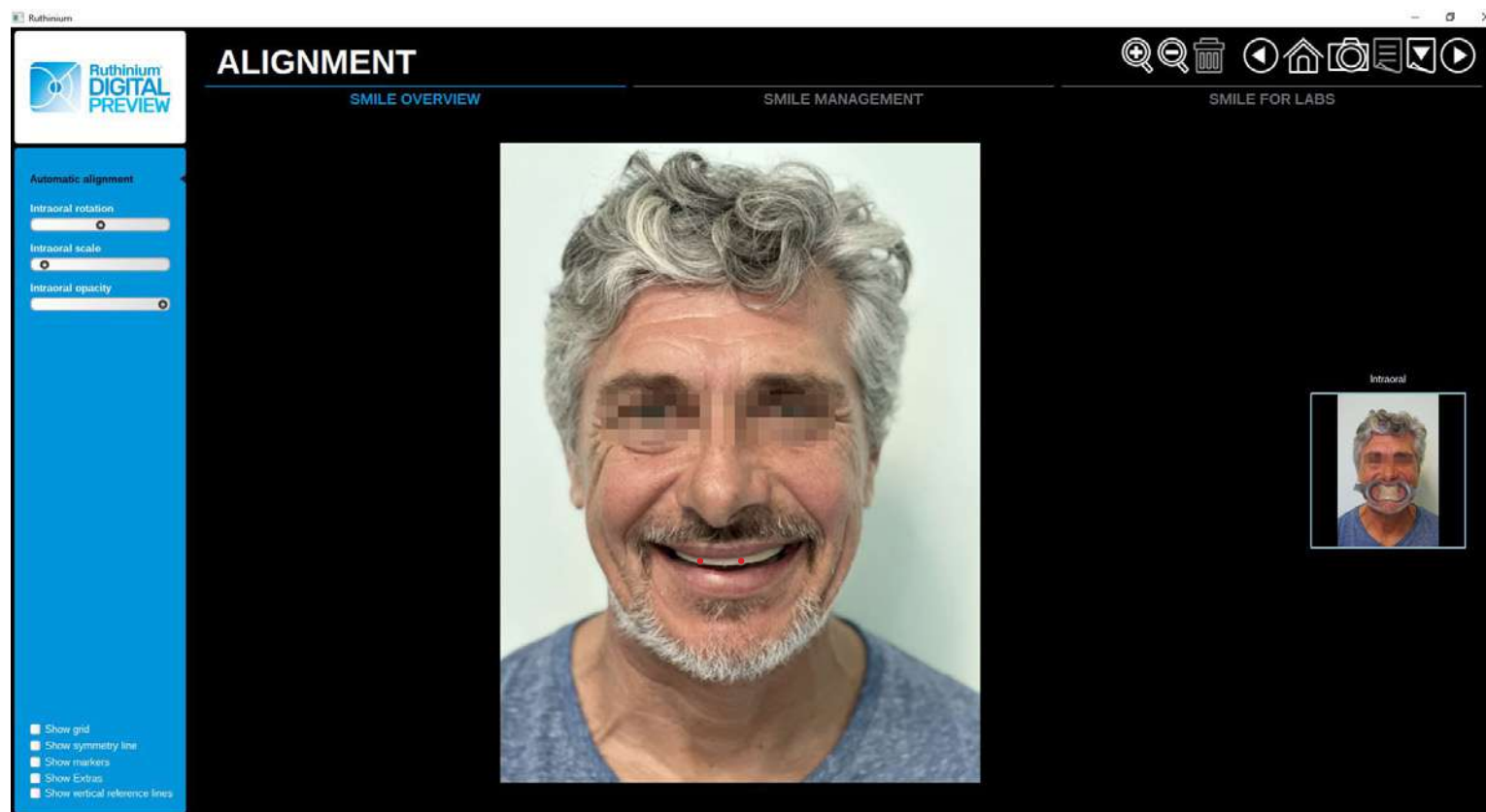


DIGITAL PREVIEW

Photographic previsualization software

5° PICTURE ALIGNMENT

Frontal Face with Intraoral Frontal



You have to align the rims through the two reference points that were incised by the clinician.

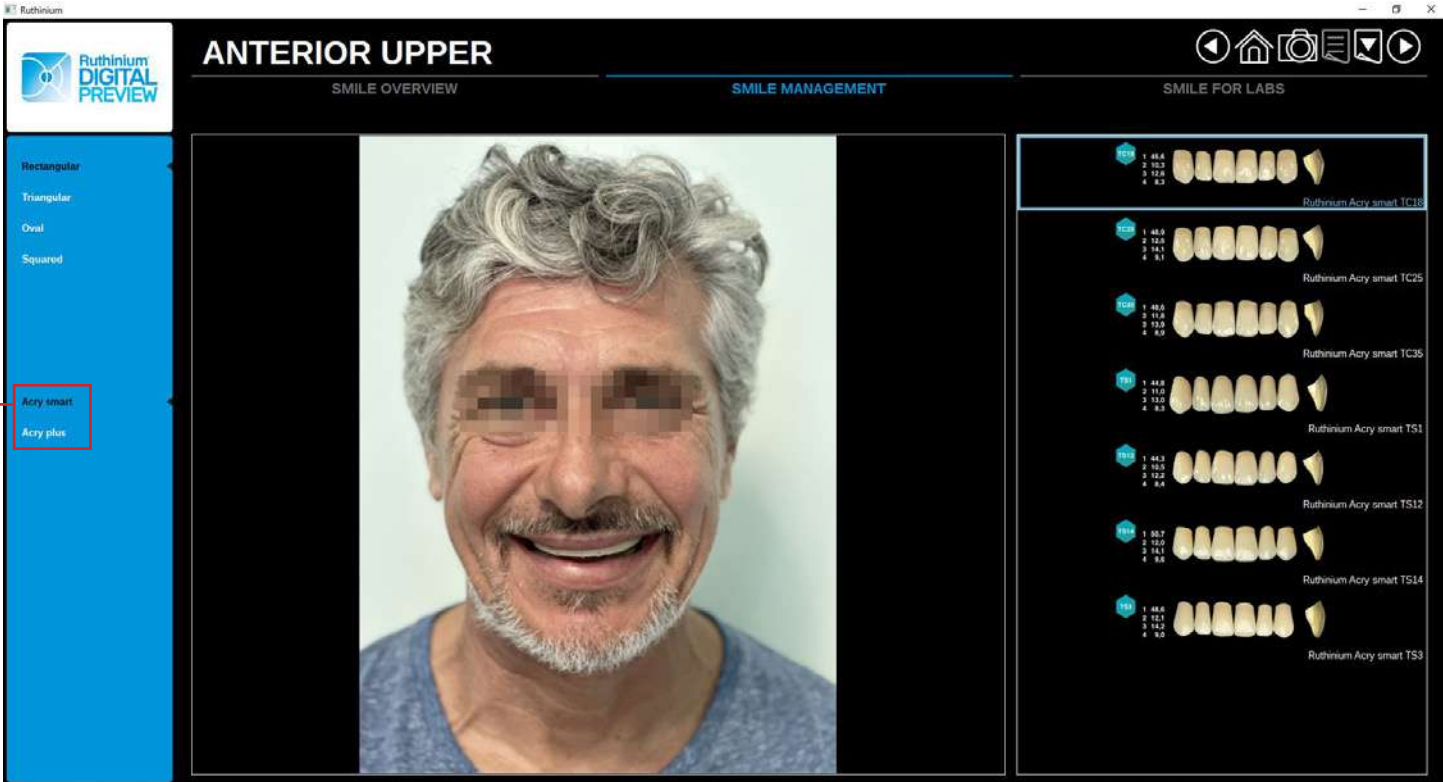


DIGITAL PREVIEW

Photographic previsualization software

6° TEETH SETUP

The software opens the library of Ruthinium **Acry Smart** and **Acry Plus** commercial teeth indicating which one is most correct to use based on the information provided previously. The choice of tooth is not constrained, it can be changed manually based on an individual choice criterion.



Choice of the desired Ruthinium library

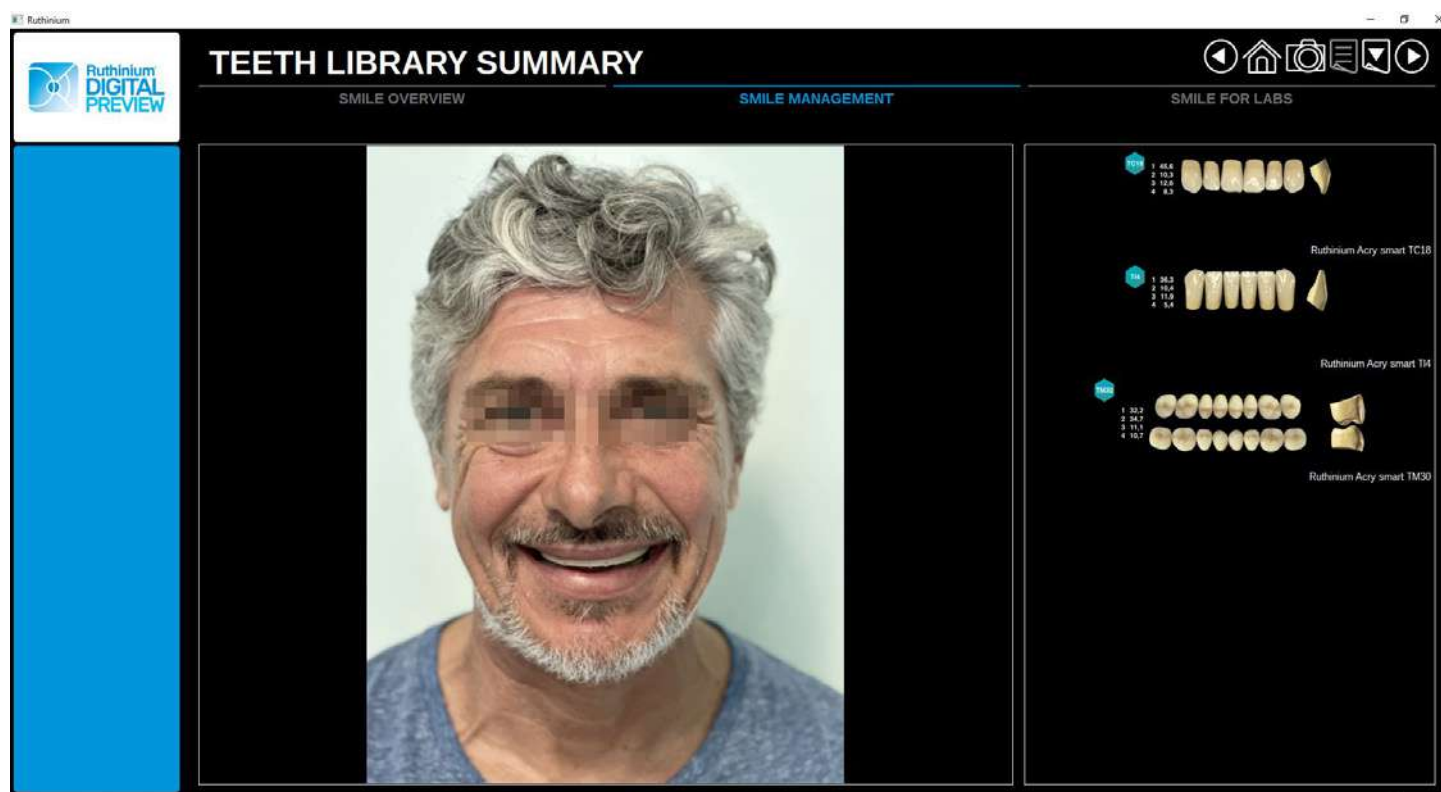


DIGITAL PREVIEW

Photographic previsualization software

6° RECAP TEETH SETUP

The software will indicate the correct articulation





DIGITAL PREVIEW

Photographic previsualization software

7° TEETH SETUP

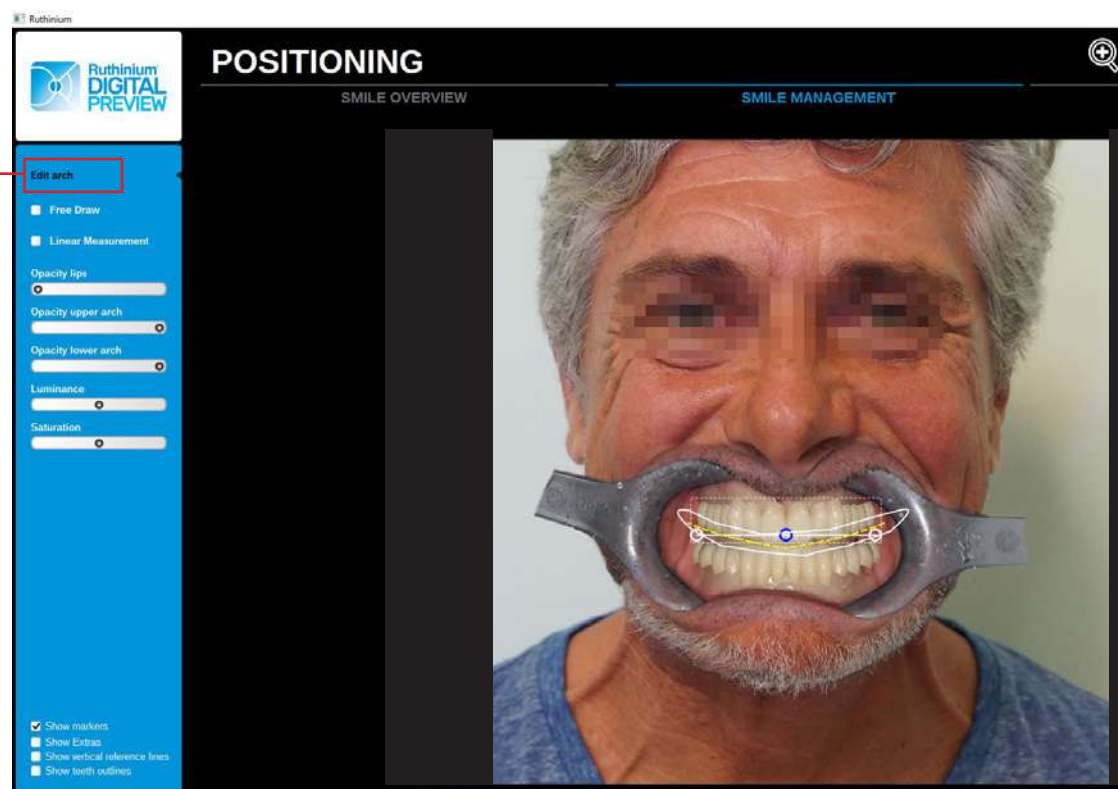
The software will automatically place images of the chosen teeth within the picture going to create an aesthetic assembly.

NB: The teeth are not in 3D STL format but have been photographed one by one and inserted within the software to create an aesthetic preview. Realistic fitting will have to be done with the 3D Denture Guide software.

Edit arch

By clicking on the **BLUE** circle in the center of the photo you can move the entire arch.

With the white lateral circles you always go to work on the entire arch changing the curvature of the posterior teeth



Clicking on the individual tooth, a **BLUE** dot will appear with which the tooth can be rotated and moved.



DIGITAL PREVIEW

Photographic previsualization software

8° EXPORT OUTLINES

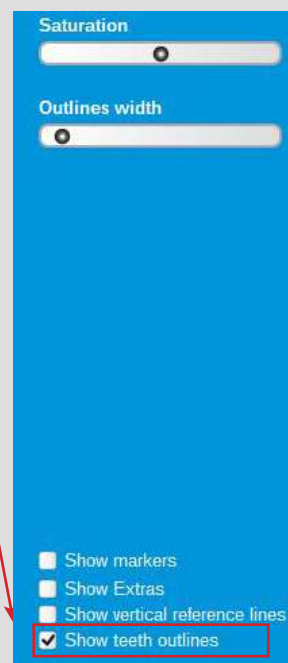
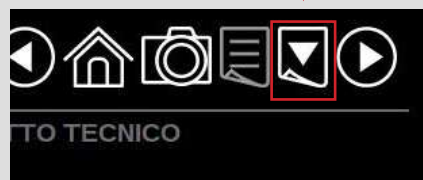
The outlines will later serve on the Denture Guide software as a reference in photographic aesthetic previsualization



HOW TO DO?

From the TEETH POSITIONING section, click on **"Show teeth outlines"**. Red outlines will appear.

Export the file by clicking on the menu in the upper right corner **"Export current page"**.





DIGITAL PREVIEW

Photographic previsualization software

9° AESTHETIC PREVISUALIZATION



Possibility to generate the project report in PDF format within will be present the complete analysis of the patient.

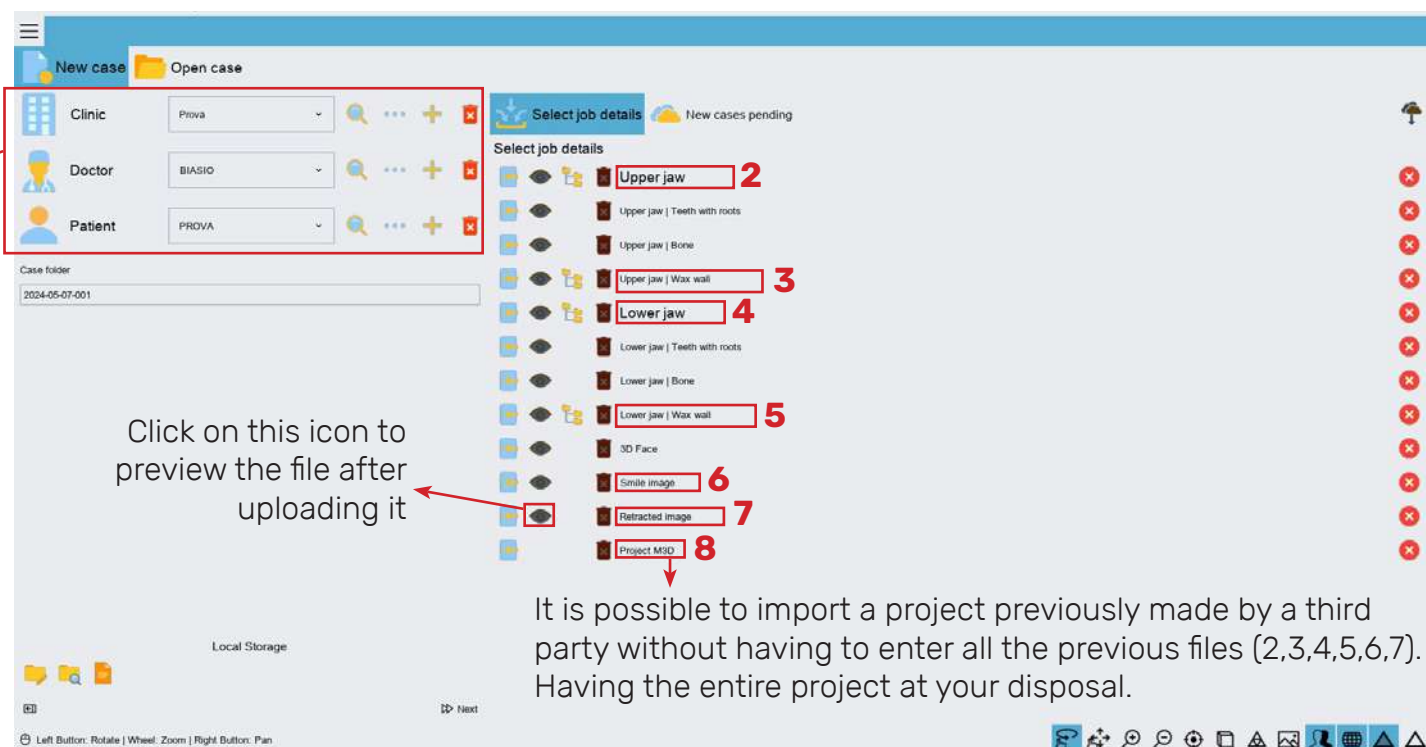


HOW TO DO?

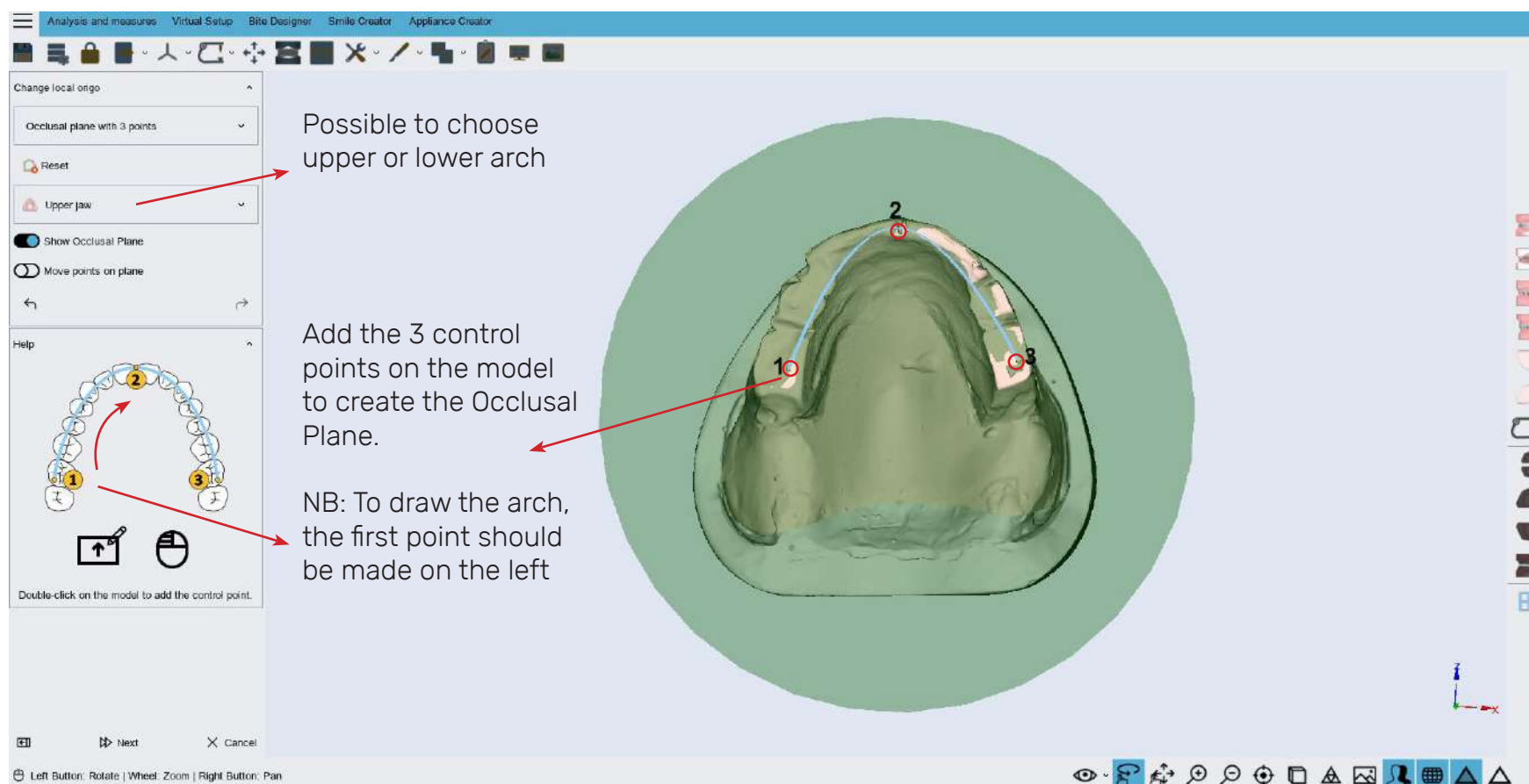
Click on the menu in the upper right-hand corner, **"Generate report"**

1° IMPORTING STL FILES TO THE SOFTWARE

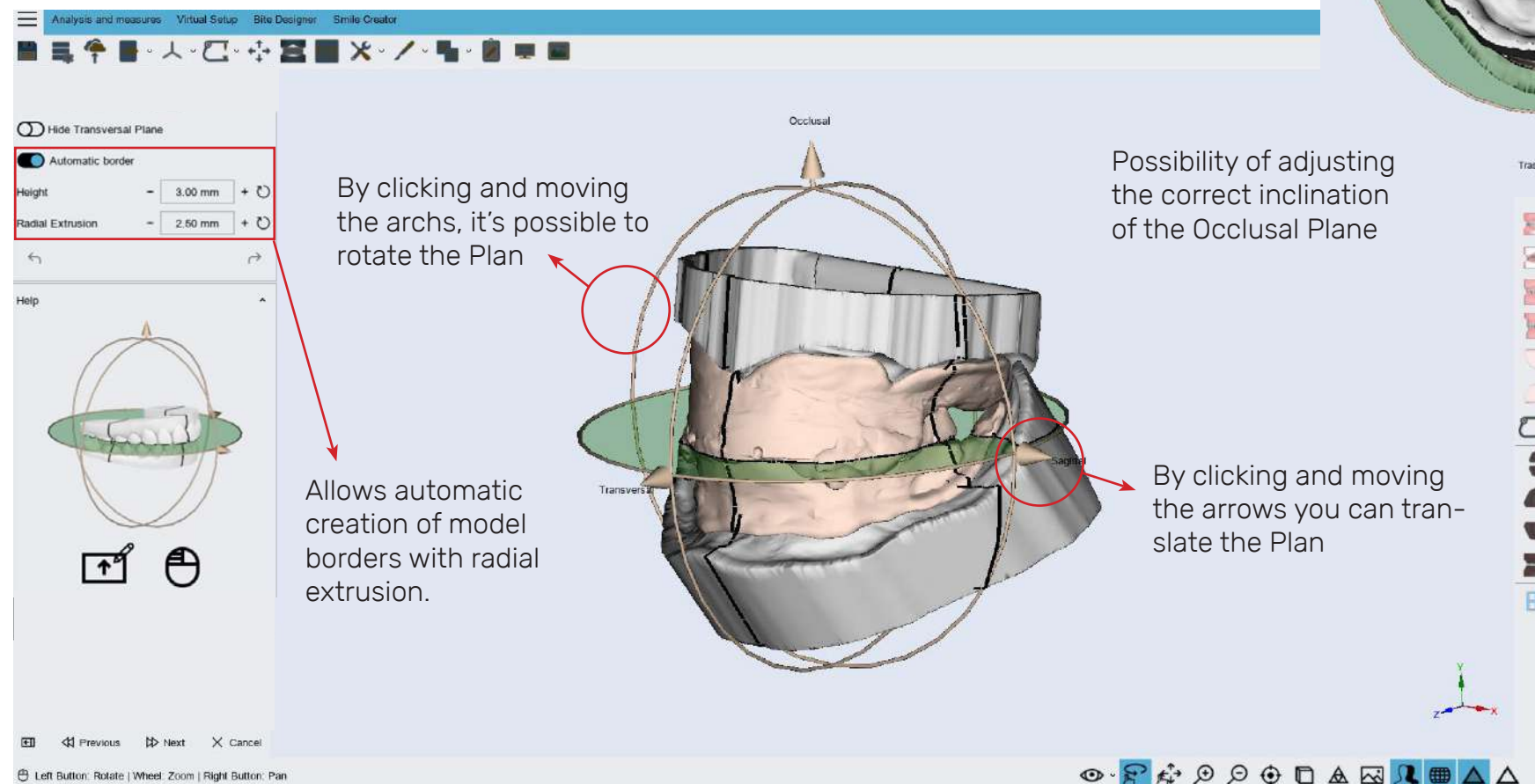
In this section, the dental technician can fill in by entering the data:
 Clinic Name
 Doctor Name
 Patient Name



2° OCCLUSAL PLANE SETTING



2° OCCLUSAL PLANE SETTING



Analysis and measures Virtual Setup Bite Designer Smile Creator

Hide Transversal Plane

Automatic border

Height - 3.00 mm + -

Radial Extrusion - 2.50 mm + -

Help

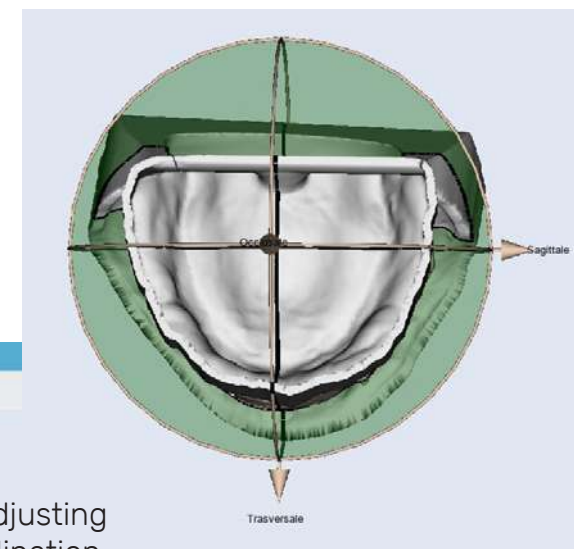
By clicking and moving the arches, it's possible to rotate the Plan

Allows automatic creation of model borders with radial extrusion.

Possibility of adjusting the correct inclination of the Occlusal Plane

By clicking and moving the arrows you can translate the Plan

Left Button: Rotate | Wheel: Zoom | Right Button: Pan



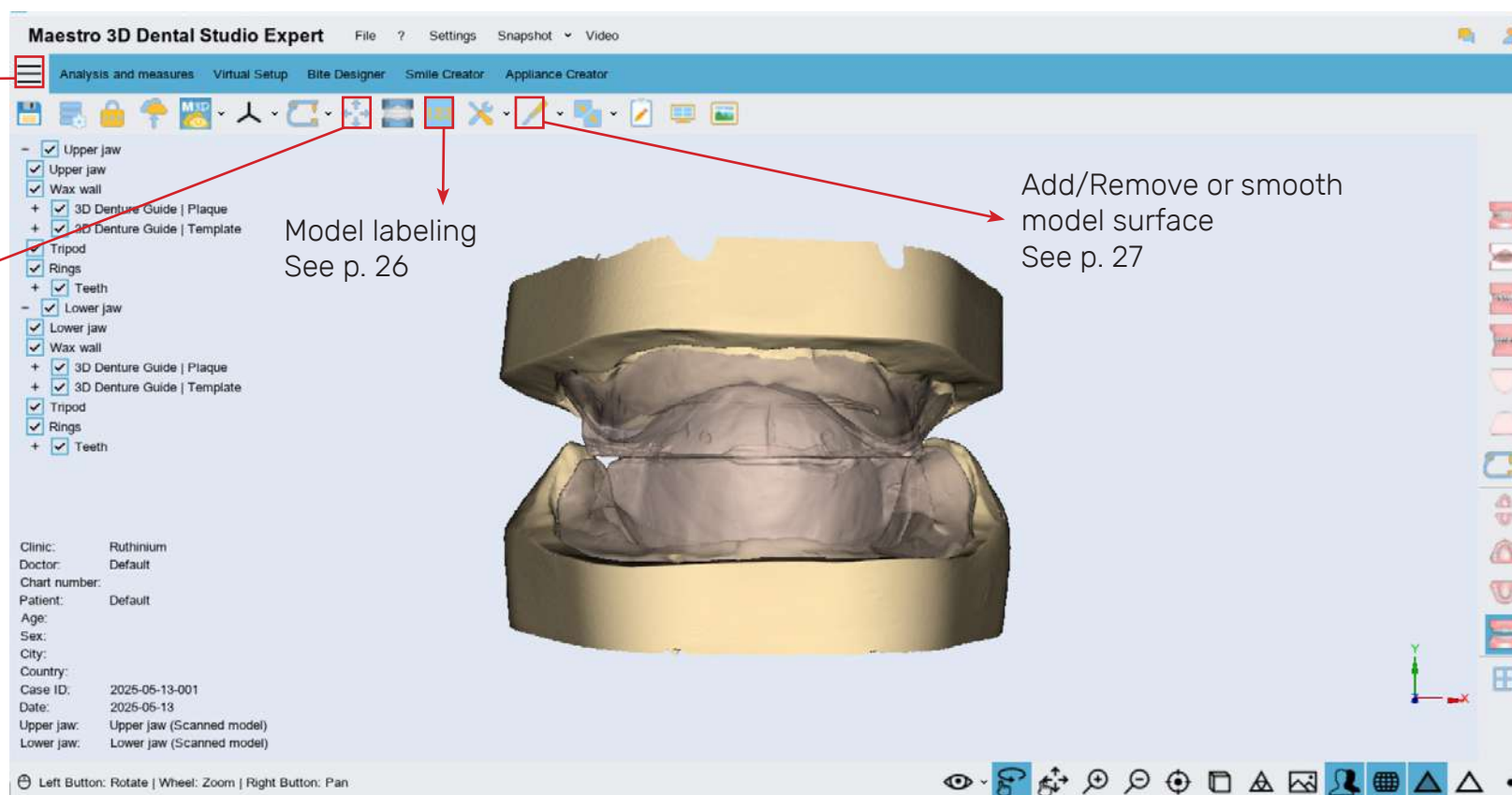
3° AVAILABLE TOOLS – MODELS AND IMPRESSIONS

Click to view the tools menu

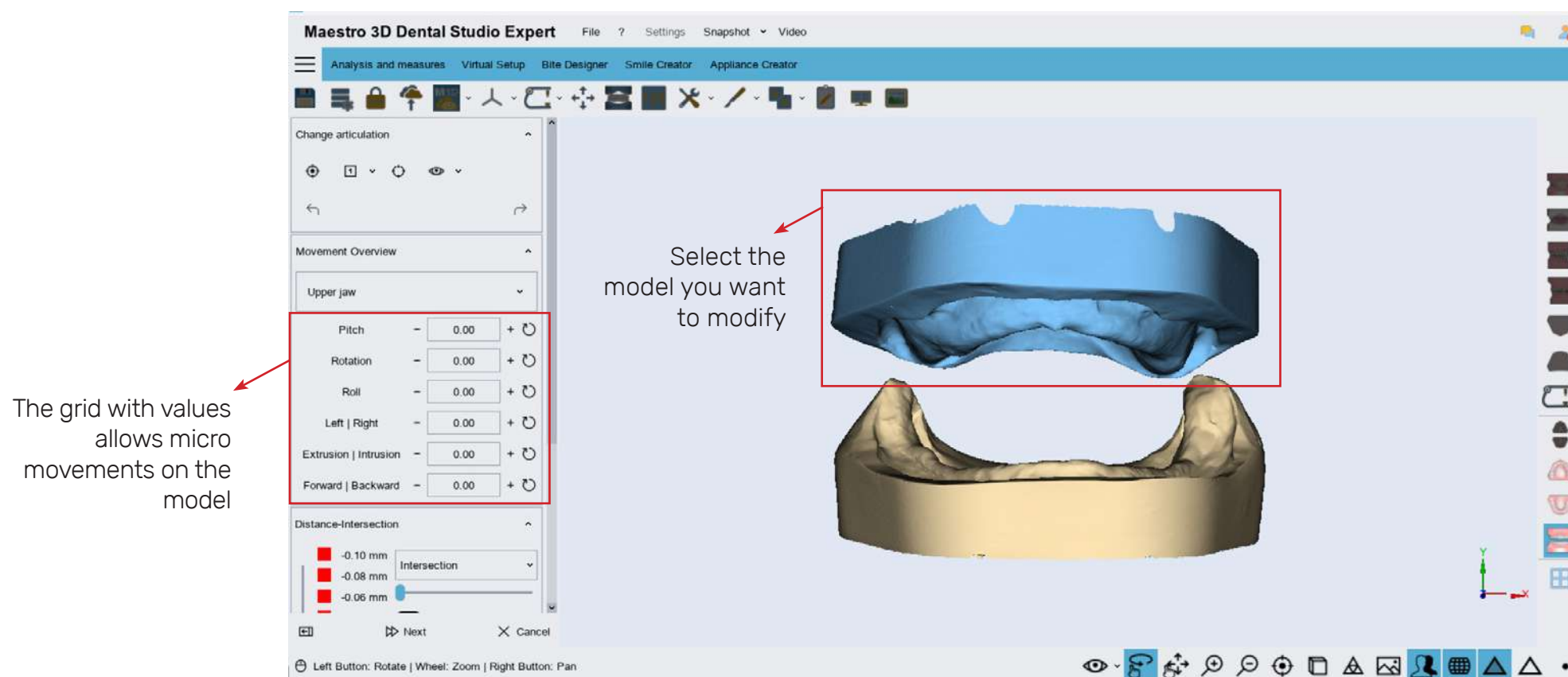
Vertical dimension modification
See p. 25

Model labeling
See p. 26

Add/Remove or smooth model surface
See p. 27



3° AVAILABLE TOOLS – Vertical Dimension Modification





M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

3° AVAILABLE TOOLS – Model Labeling

Click to add a label

Enter the desired name

You can use the manipulators to change the position or size

Maestro 3D Dental Studio Expert File ? Settings Snapshot Video

Analysis and measures Virtual Setup Bite Designer Smile Creator Appliance Creator

Label

+ [Text Input Field] X

☐ Negative ☒ Hide numbers

Thickness - 1.00 mm +

Help

Left Button: Rotate | Wheel: Zoom | Right Button: Pan

Maestro 3D Dental Studio Expert File ? Impostazioni Snapshot Video

Analisi e misure Setup virtuale Bite Designer Smile Creator Appliance Creator

Label

+ M3D X

☒ Negative ☒ Hide numbers

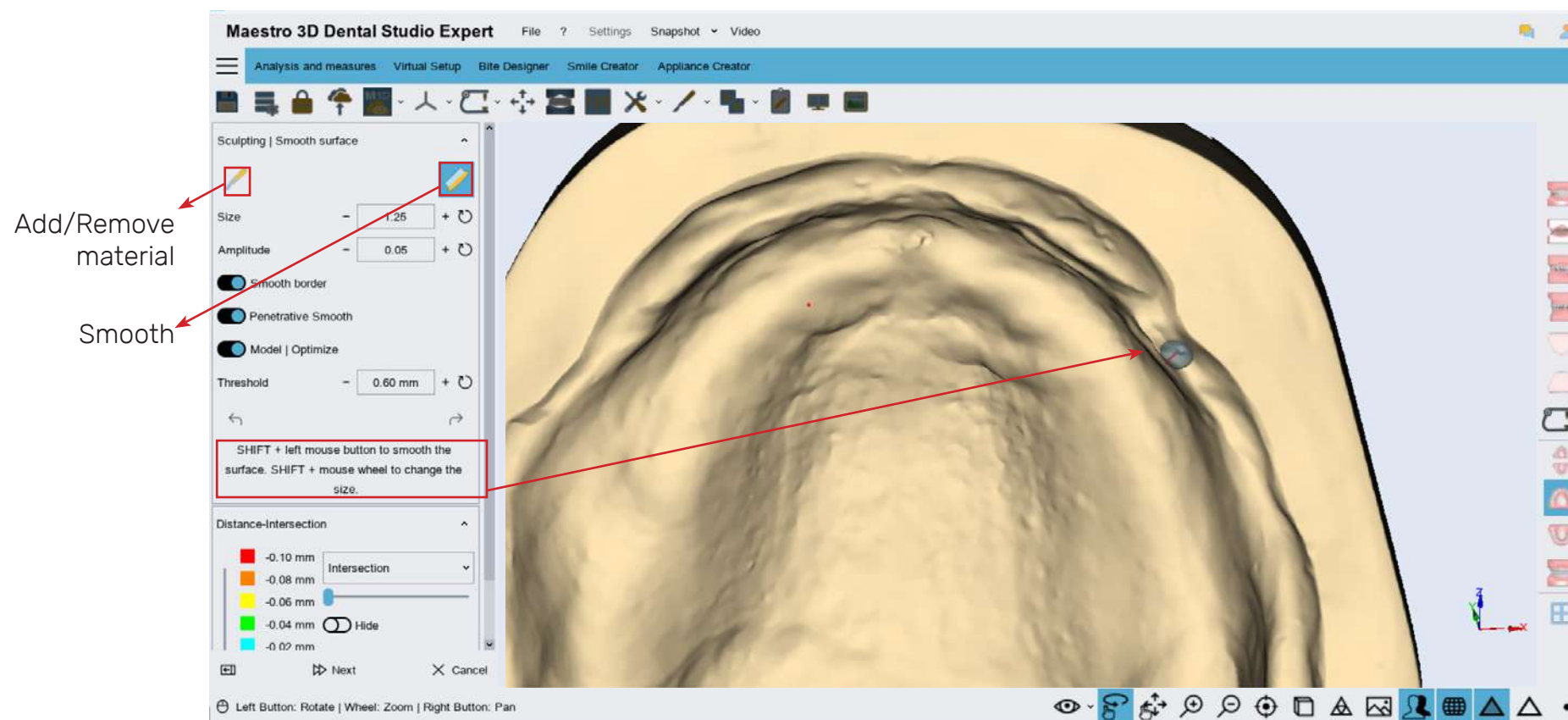
Thickness - 0.50 mm +

Help

Avanti X Annulla

Bottone Sinistro: Ruota | Rotella: Zoom | Bottone Destro: Trascina

3° AVAILABLE TOOLS – Add/Remove or Smooth Model Surface





M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

3° AVAILABLE TOOLS

Select the "Smile Creator" module.

File export

Base modeling

Trippod creation

Template creation

Base creation

Teeth assembly

Gingival Crest

endo-oral Cropping

Picture/STL alignment

Gestione della raccolta dati

Choice of different views:

- Front
- Back
- Left
- Right
- Top
- Bottom
- Open mouth

Choice of different views:

- Maxillary
- Mandibular
- Both



M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

3° FILE ALIGNMENT WITH THE PICTURE

Through the two reference points incised by the clinician on the upper rims through the use of the calibrator.



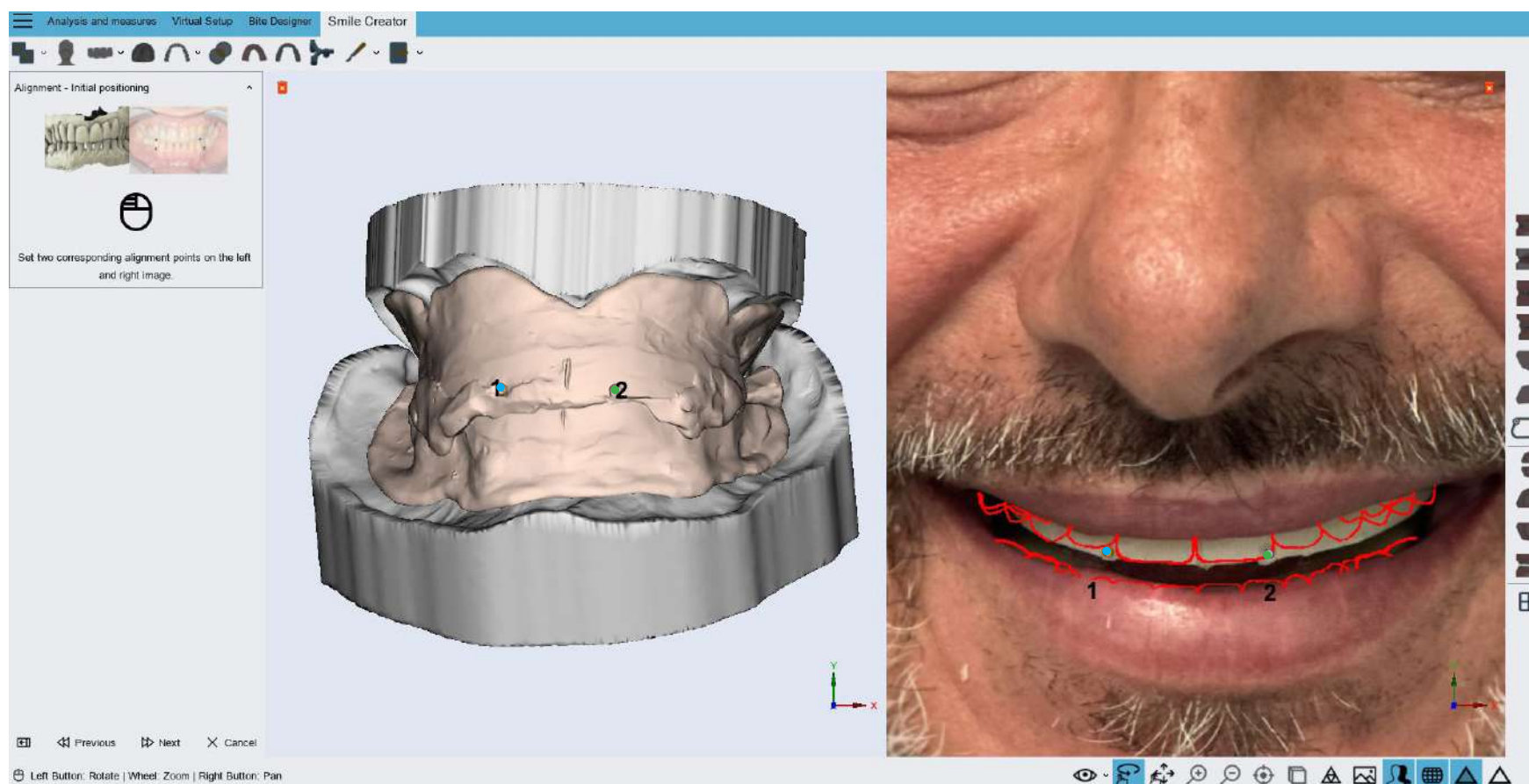


M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

3° FILE ALIGNMENT WITH THE PICTURE

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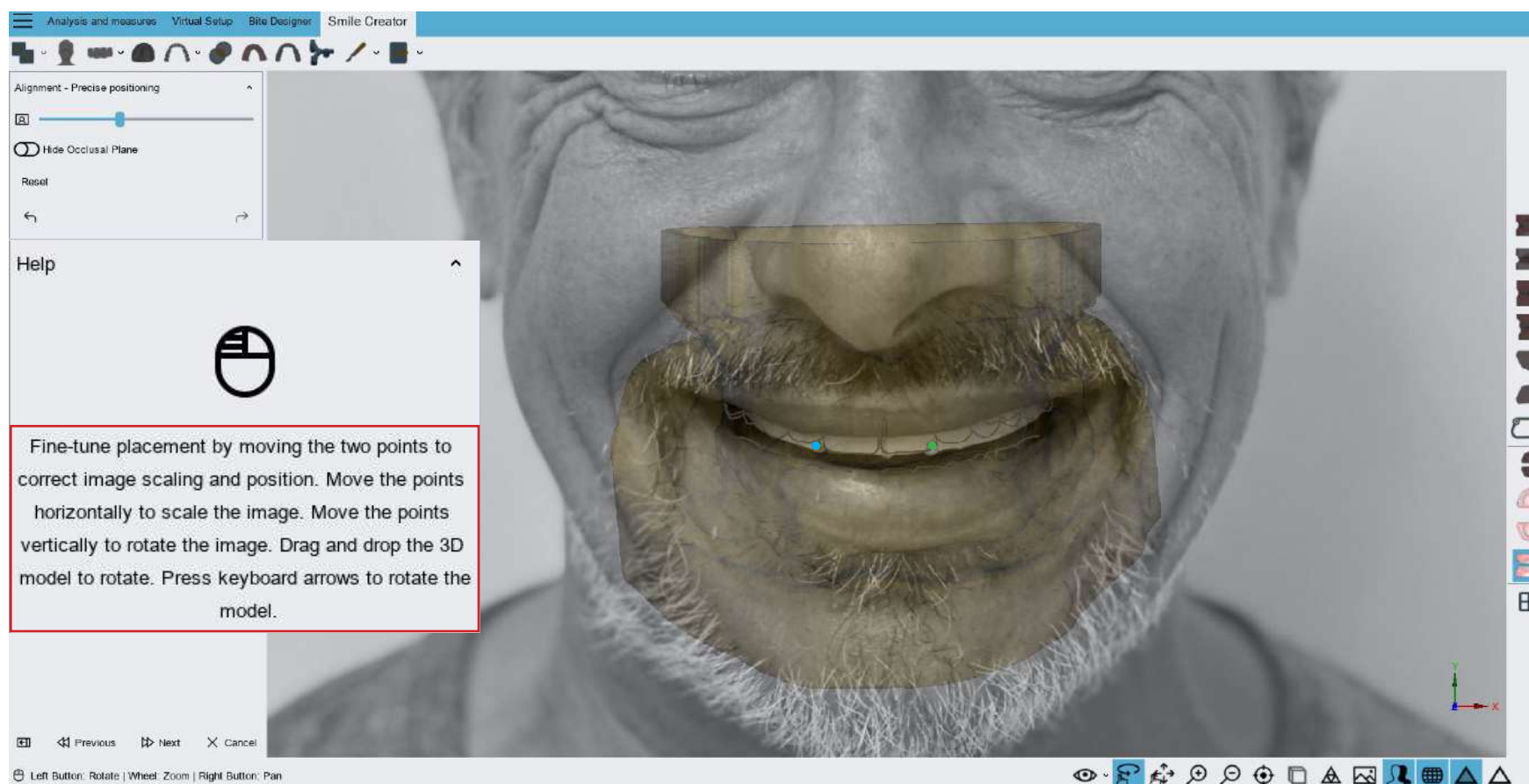


M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

3° FILE ALIGNMENT WITH THE PICTURE

Through the two reference points incised by the clinician on the upper rims through the use of the calibrator.



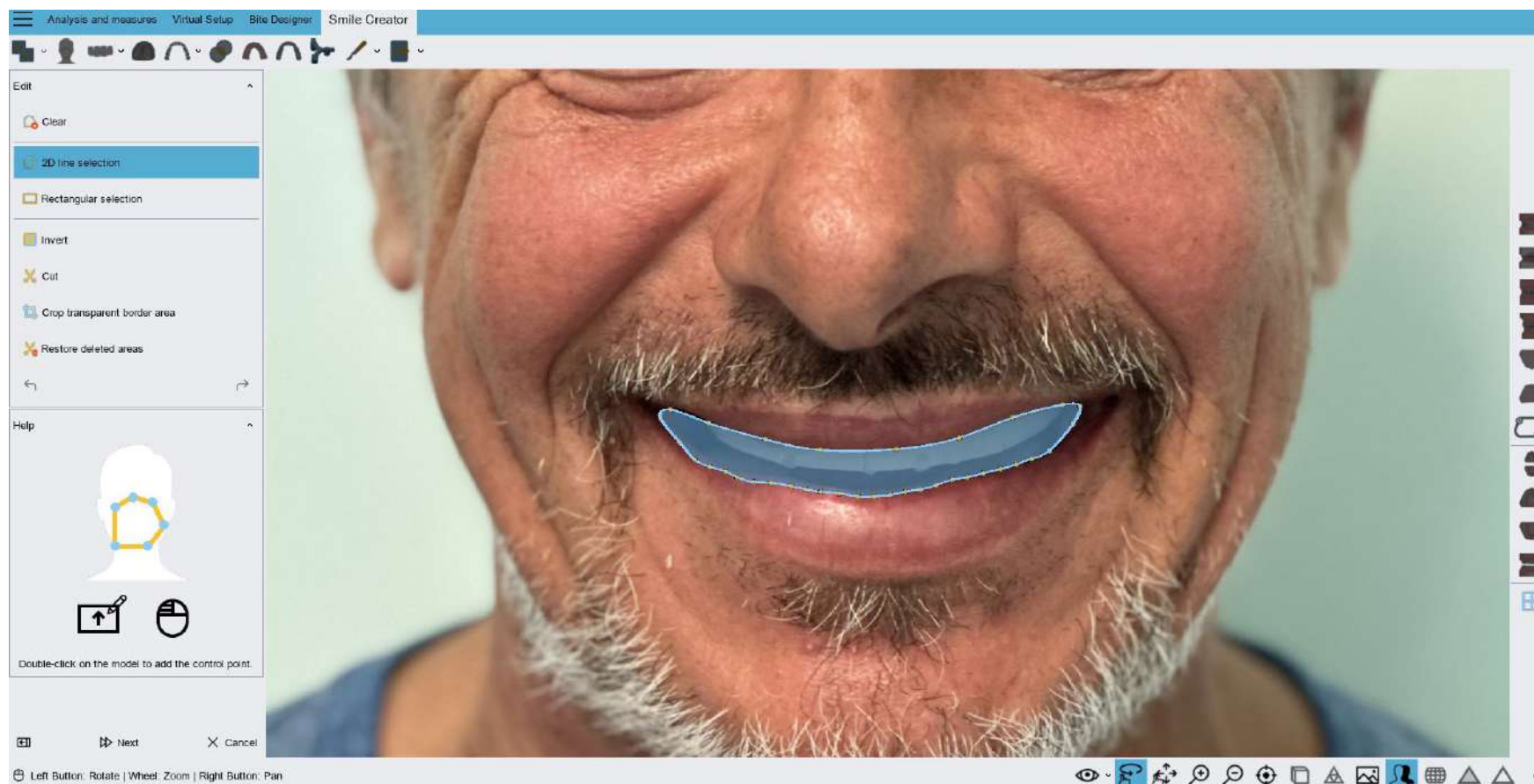


M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

4° CROPPING PHOTO ENDO-ORAL AREA

Double-clicking the mouse on the model to add control points.

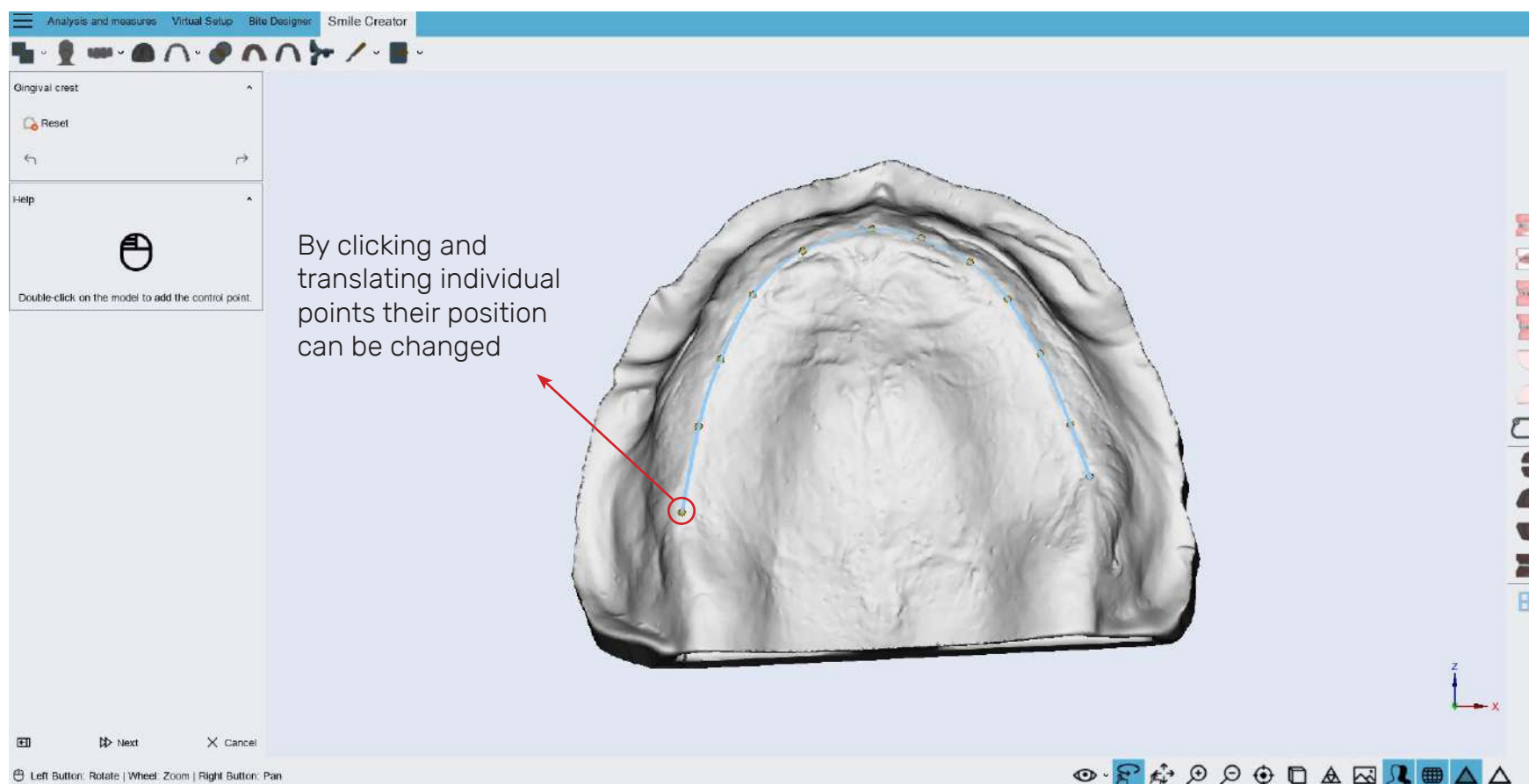




M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

5° UPPER AND LOWER GINGIVAL CREST DESIGN

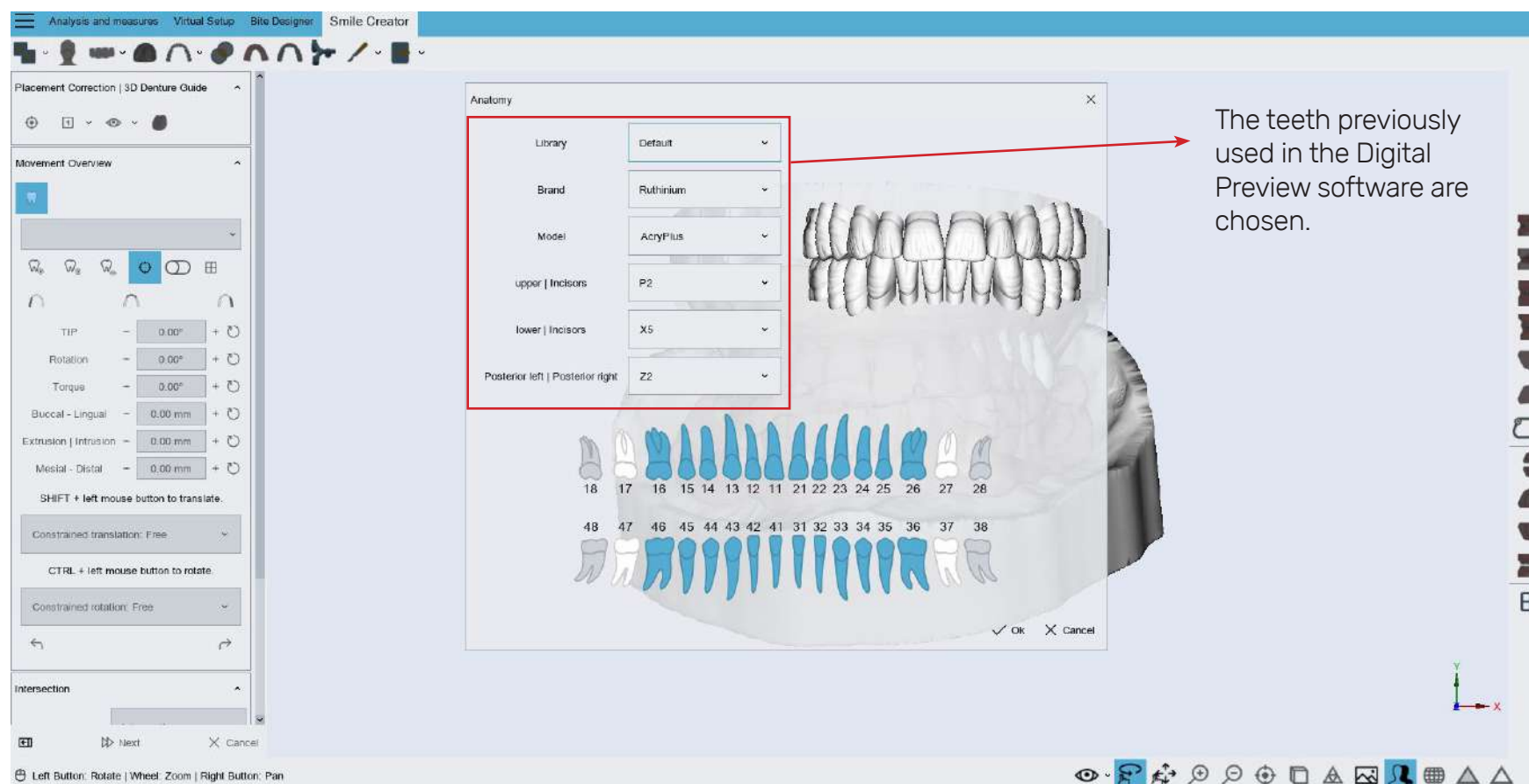




M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

6° TEETH SETUP



6° TOOLS AVAILABLE FOR TOOTH ASSEMBLY

Labels and their corresponding UI elements:

- Show/hide tooth:** Points to the eye icon in the toolbar.
- Remove tooth:** Points to the trash can icon in the toolbar.
- Reset tooth position:** Points to the reset icon (circular arrow) in the toolbar.
- Show/Hide manipulator:** Points to the manipulator icon (globe) in the toolbar.
- The grid with parameters allows for micro movements on tooth placement:** Points to the 'Movement Overview' panel containing:
 - TIP: 0.00°
 - Rotation: 0.00°
 - Torque: 0.00°
 - Buccal - Lingual: 0.00 mm
 - Extrusion / Intrusion: 0.00 mm
 - Mesial - Distal: 0.00 mm
- Allows the tooth or groups of teeth to be translated or rotated by constraining them in one direction or plane:** Points to the 'Constrained translation' and 'Constrained rotation' dropdown menus.
- Tooth-by-tooth setup overview:** Points to the 'Pantomonica del Setup' window showing a grid of tooth positions.
- Group selectors for simultaneous tooth shifting:** Points to the 'Constrained translation' and 'Constrained rotation' dropdown menus.

Pantomonica del Setup

#	18	17	16	15	14	13	12	11	21	22	23	24	25	26	27	28
Ti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
R	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Te	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rd	0.00	0.00	1.00	1.00	1.00	2.00	3.00	3.75	3.75	3.45	3.00	1.00	1.00	1.00	0.00	0.00
Rf	0.00	0.00	0.14	0.47	0.80	2.00	1.80	2.60	2.60	1.80	2.00	0.80	0.47	0.14	0.00	0.00
MD	0.00	0.00	4.00	4.75	4.80	2.00	2.50	0.25	0.25	2.00	2.00	4.25	4.75	4.80	0.00	0.00
Ti	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
R	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Te	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rd	0.00	0.00	1.50	2.25	2.80	3.50	4.25	4.17	4.17	4.00	3.80	2.25	1.50	0.00	0.00	0.00
Rf	0.00	0.00	0.13	0.83	0.80	1.80	1.90	1.97	1.90	1.80	0.80	0.13	0.00	0.00	0.00	0.00
MD	0.00	0.00	4.41	4.04	3.67	2.34	1.50	0.63	0.63	1.00	2.34	3.67	4.04	4.41	0.00	0.00
#	48	47	46	45	44	43	42	41	31	32	33	34	35	36	37	38

Left Button: Rotate | Wheel: Zoom | Right Button: Pan

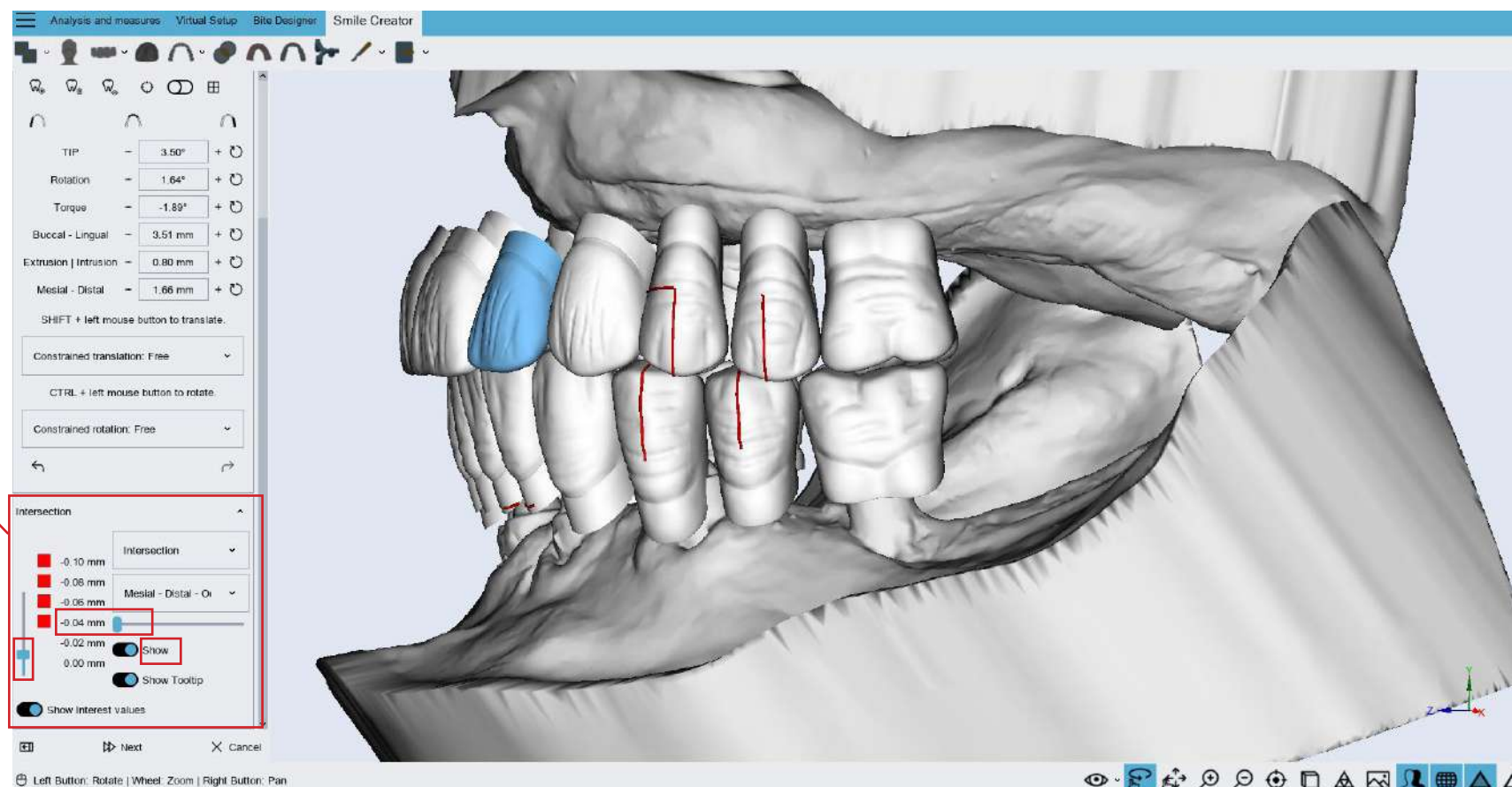


M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

6° TOOLS AVAILABLE FOR TOOTH ASSEMBLY

In this area you can view any intersections between the teeth

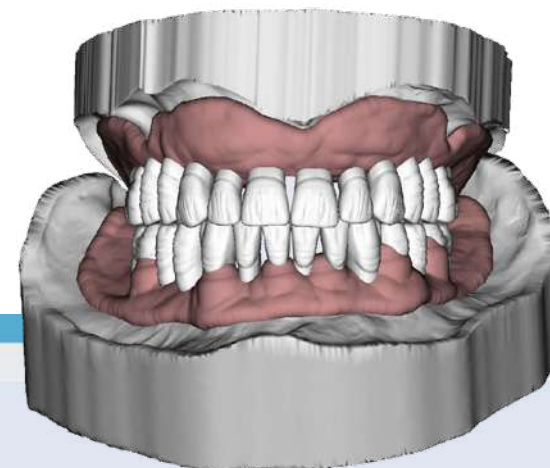




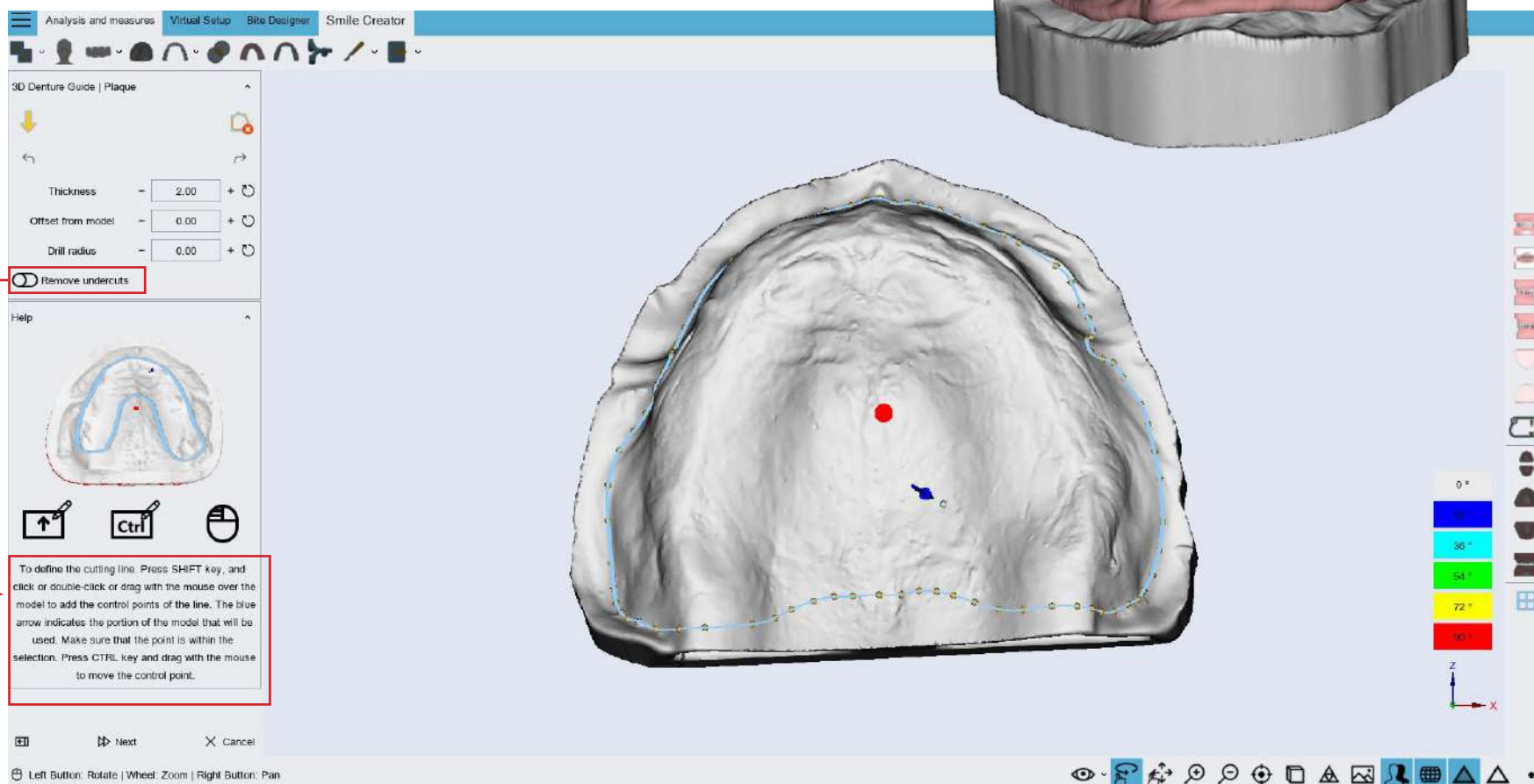
M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

7° DRAWING OF THE BASE



Activating this function allows to create the base by removing undercuts



How to draw the base?

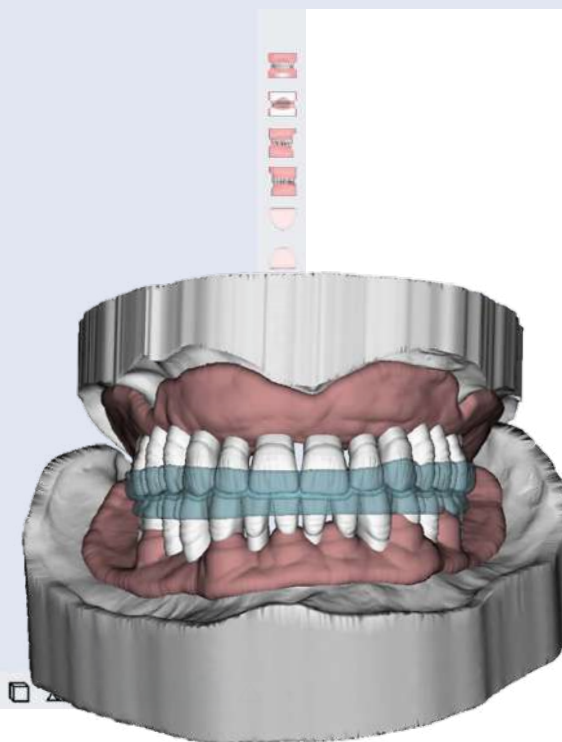
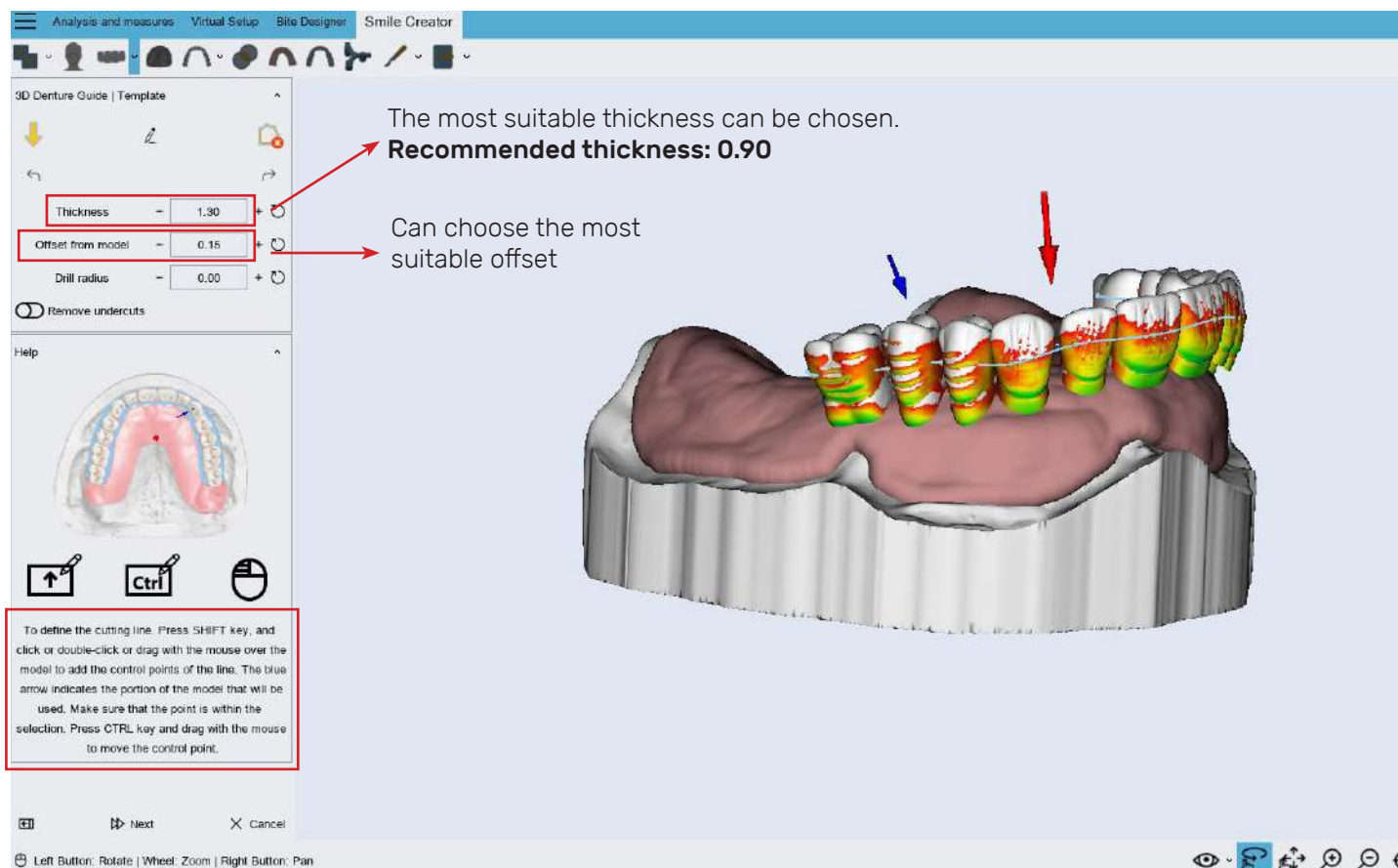
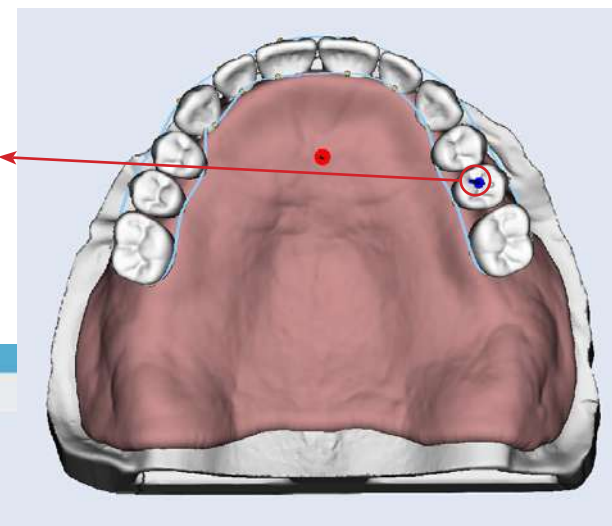


M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

8° REALIZATION THROUGH TEMPLATE POINTS (GUIDE THAT ALLOWS TOOTH PLACEMENT)

NB: important to place the blue arrow in the occlusal part of the tooth to allow the software to correctly place the template



9° CREATION OF THE TRIPOD (BASE-TEMPLATE LINK)

Analysis and measures | Virtual Setup | Bite Designer | Smile Creator

Guide

- Inner rings' diameter - 5.00 mm
- Outer rings' diameter - 7.00 mm
- Rings' height - 3.00 mm
- Internal cylinders' tolera... - 0.30 mm
- External cylinders' height - 2.00 mm
- Internal cylinders' height - 3.50 mm
- Automatic diameter calculation
- Internal cylinders' diam... - 7.10 mm
- Ring's offset 0 - 3.00 mm**
- Ring's offset 1 - 3.00 mm**
- Ring's offset 2 - 3.00 mm**

Help

Double-click on the model to add the control point.

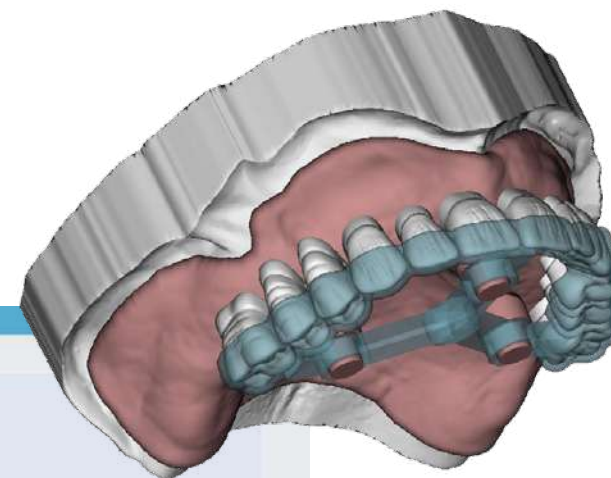
Left Button: Rotate | Wheel: Zoom | Right Button: Pan

Place the control point between the two central incisors in the center of the template (approximately)

Control points are placed between the second premolar and first molar for more stability

Useful tool for dislocating pins more or less centrally

Connect the dots to the plate so as not to create interference



WITH THE USE OF
ACRY SMART AND **ACRY PLUS**
WE RECOMMEND THE FOLLOWING STEPS:

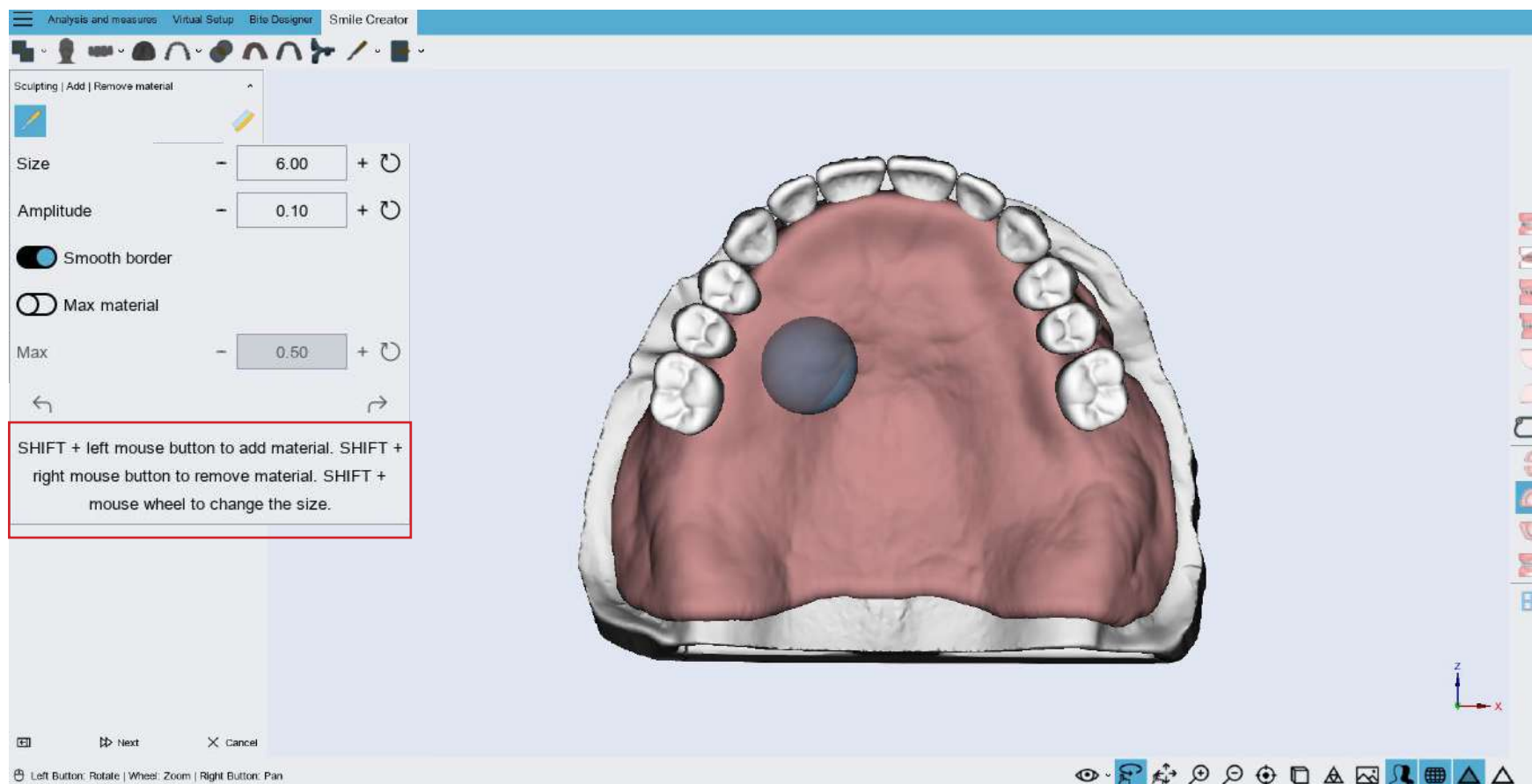
BASE MODELING AND
EXPORTING STL FILES



M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

10° BASE MODELLING UP TO THE NECK OF THE TOOTH TO AVOID UNDERCUTS.

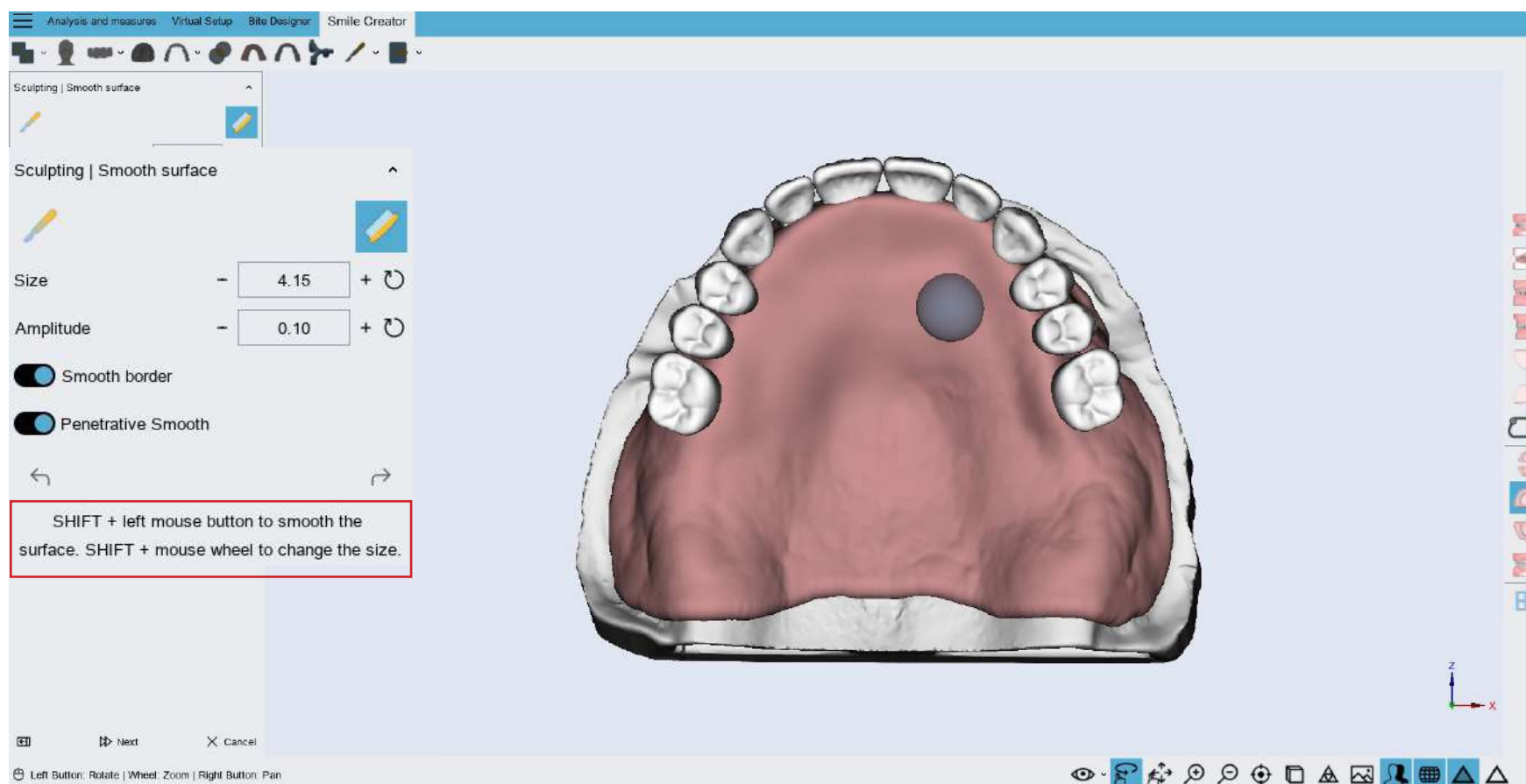




M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

10° BASE MODELING (SMOOTHING THE SURFACE)

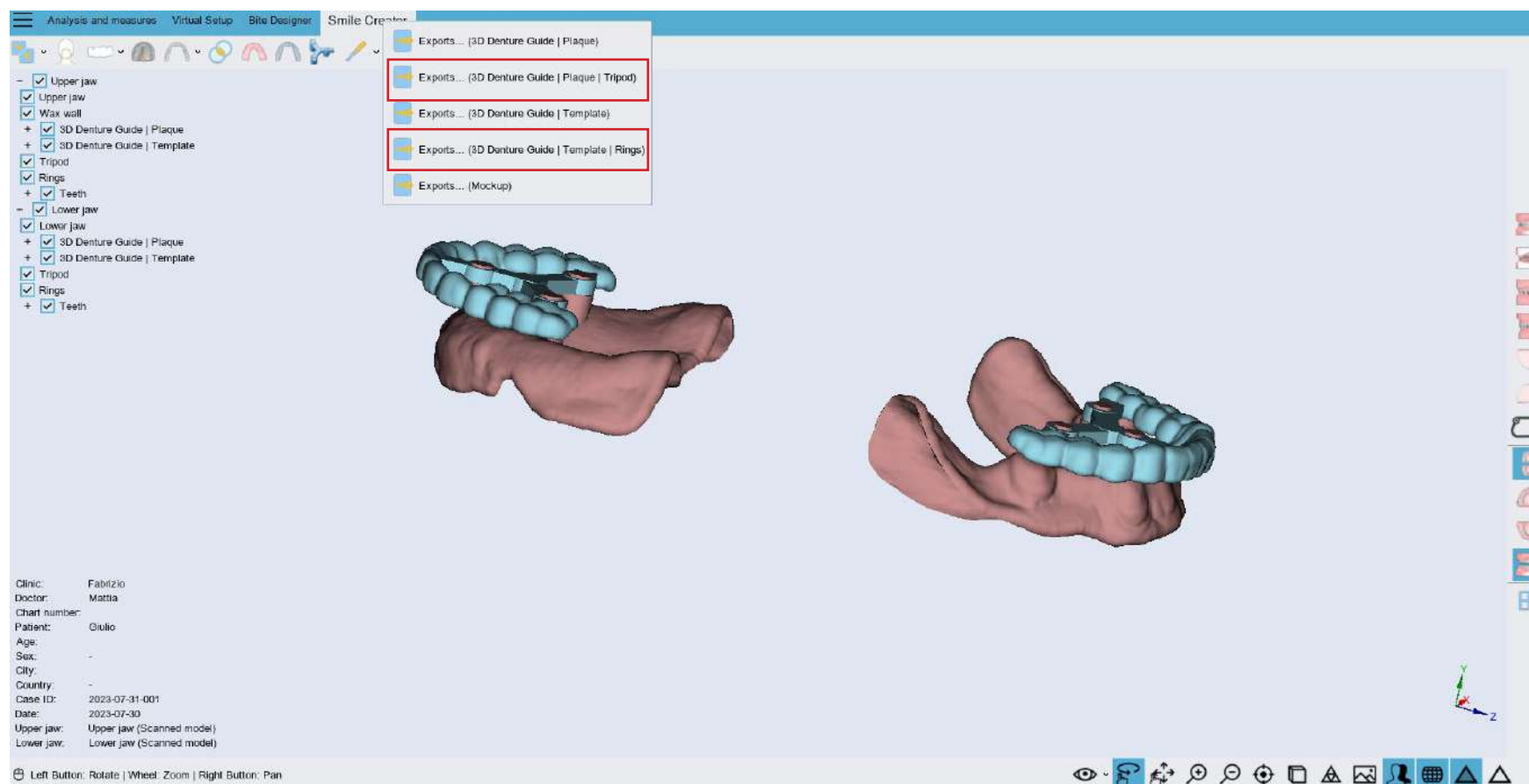




M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

11° FILE EXPORT

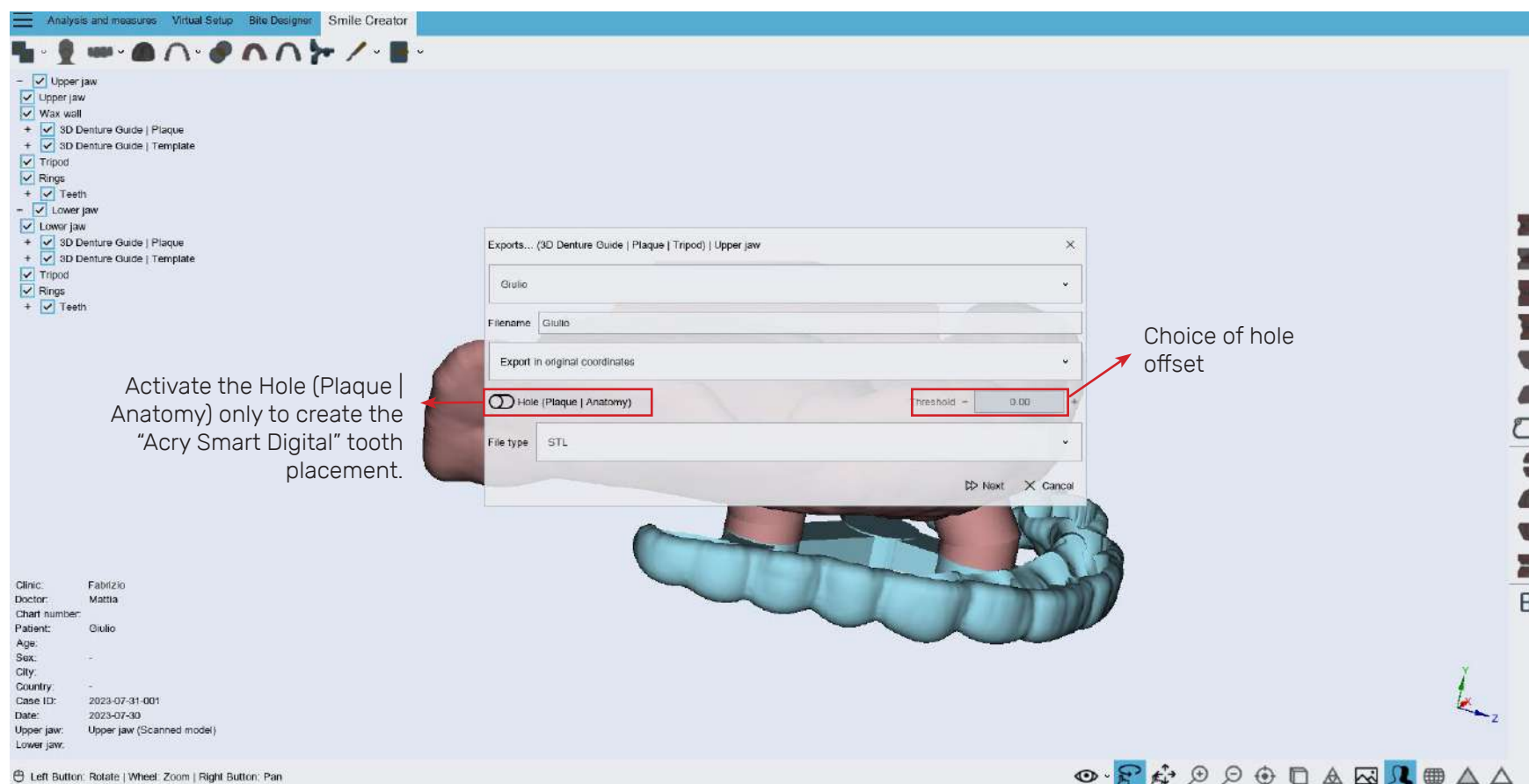




M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

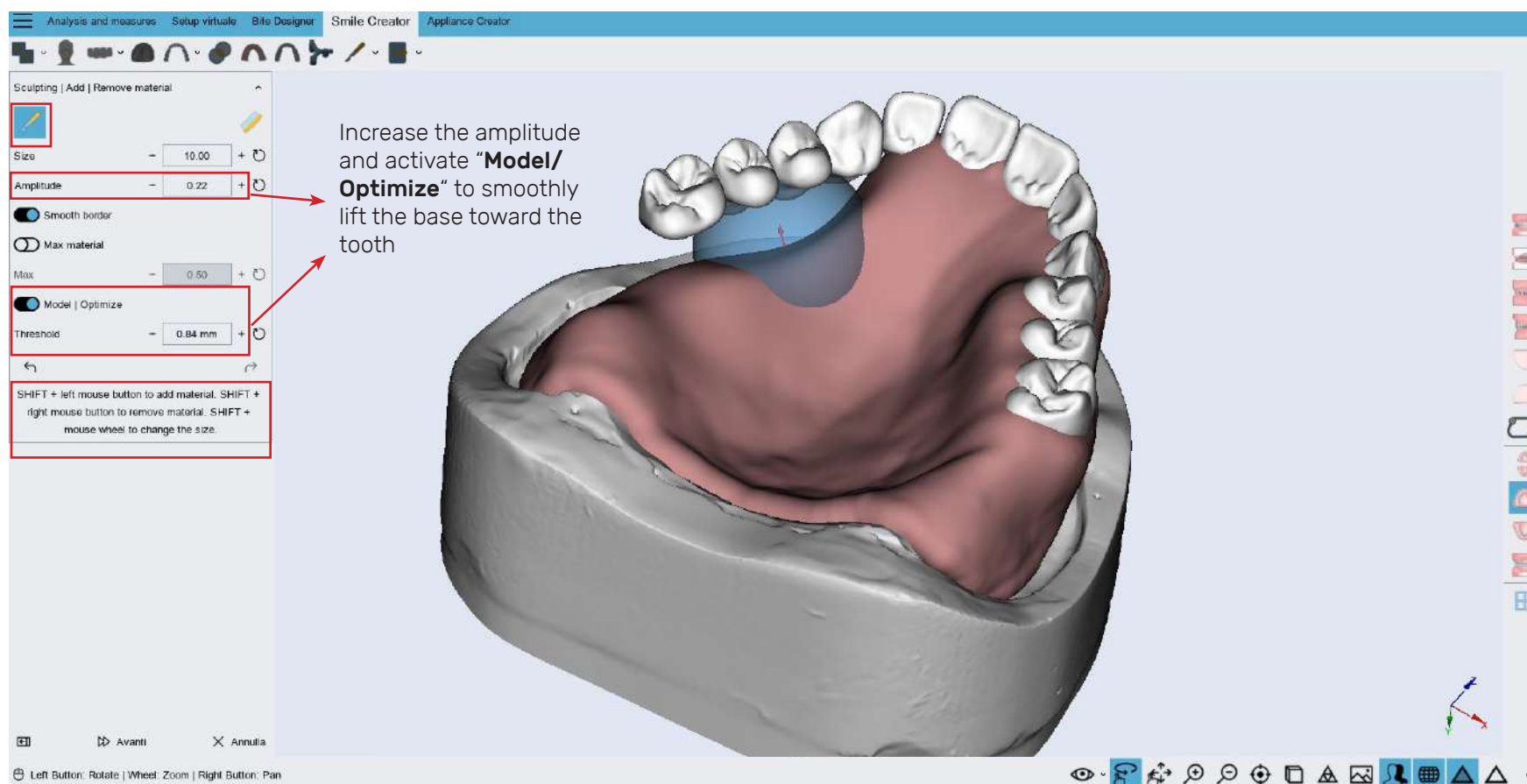
11° EXPORT OF THE BASE WITH A HOLE. USEFUL WHEN THE TRIPOD TOUCHES THE TOOTH OR TO DRILL THE BASE NEAR THE NECK



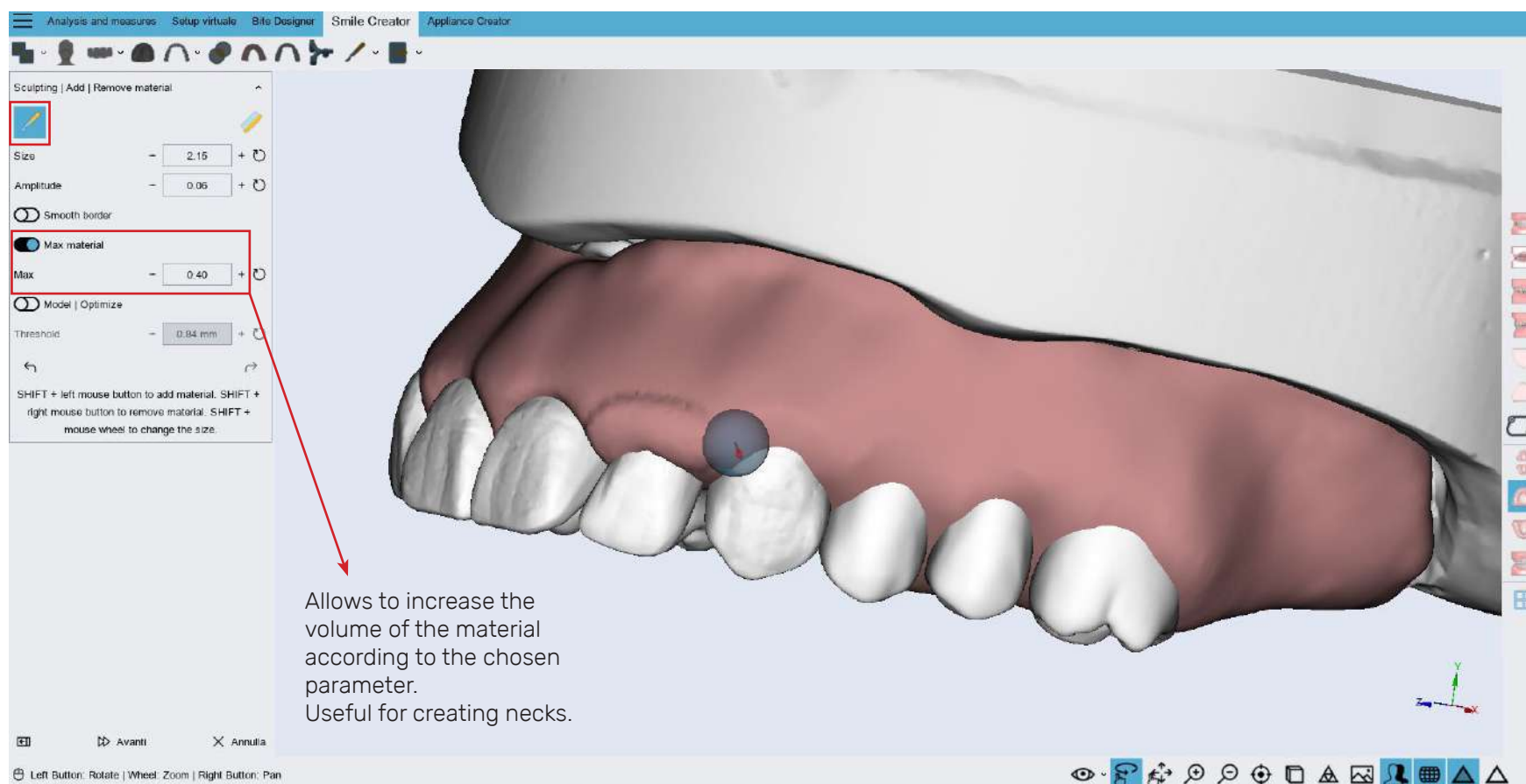
WITH THE USE OF
ACRY SMART DIGITAL
WE RECOMMEND THE FOLLOWING STEPS:

GUM MODELING AND
EXPORTING STL FILES

10° GUM / GINGIVA DESIGN



11° GUM / GINGIVA DESIGN

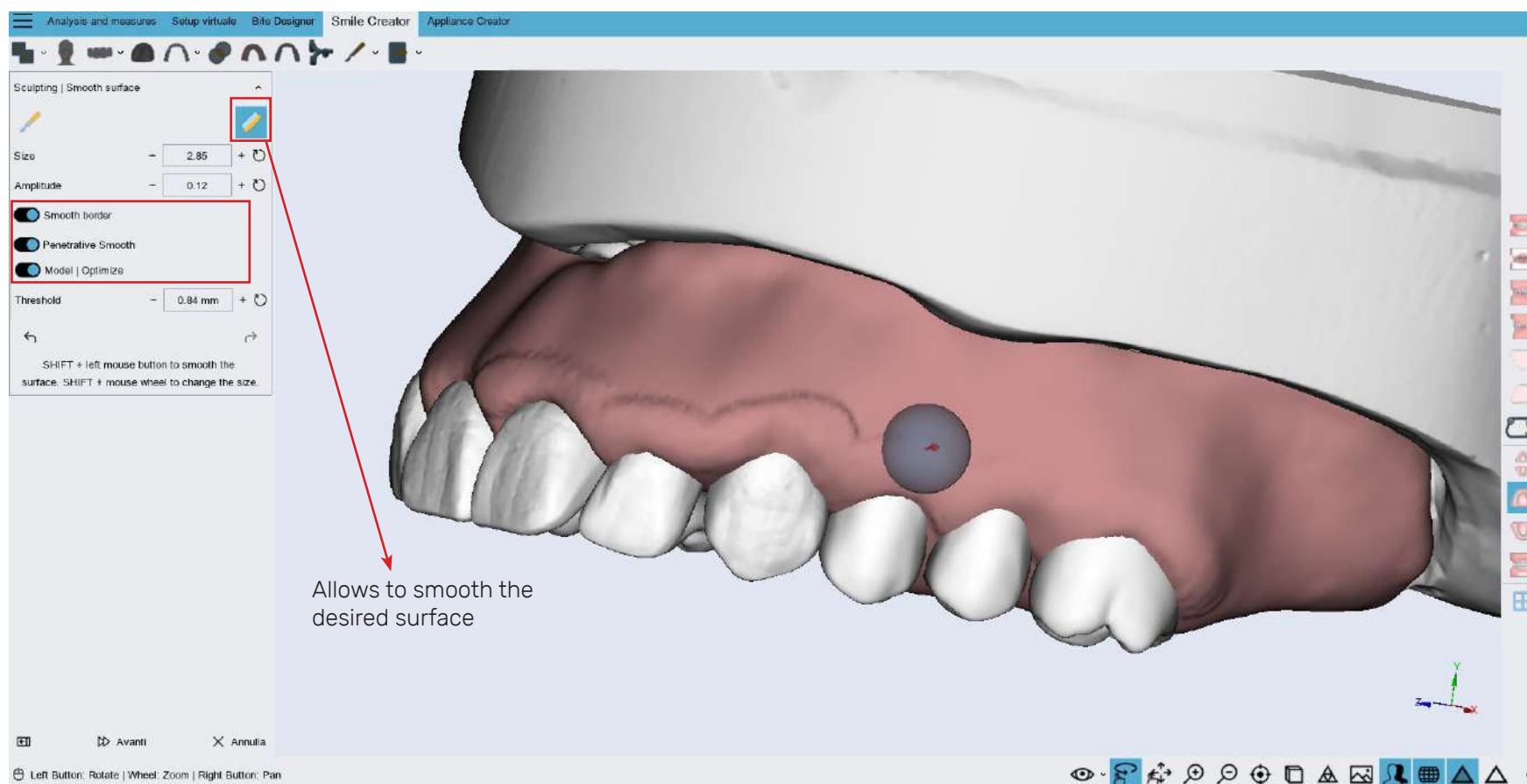




M3D STUDIO - DENTURE GUIDE MODULE

Digital setup software

11° GUM / GINGIVA DESIGN

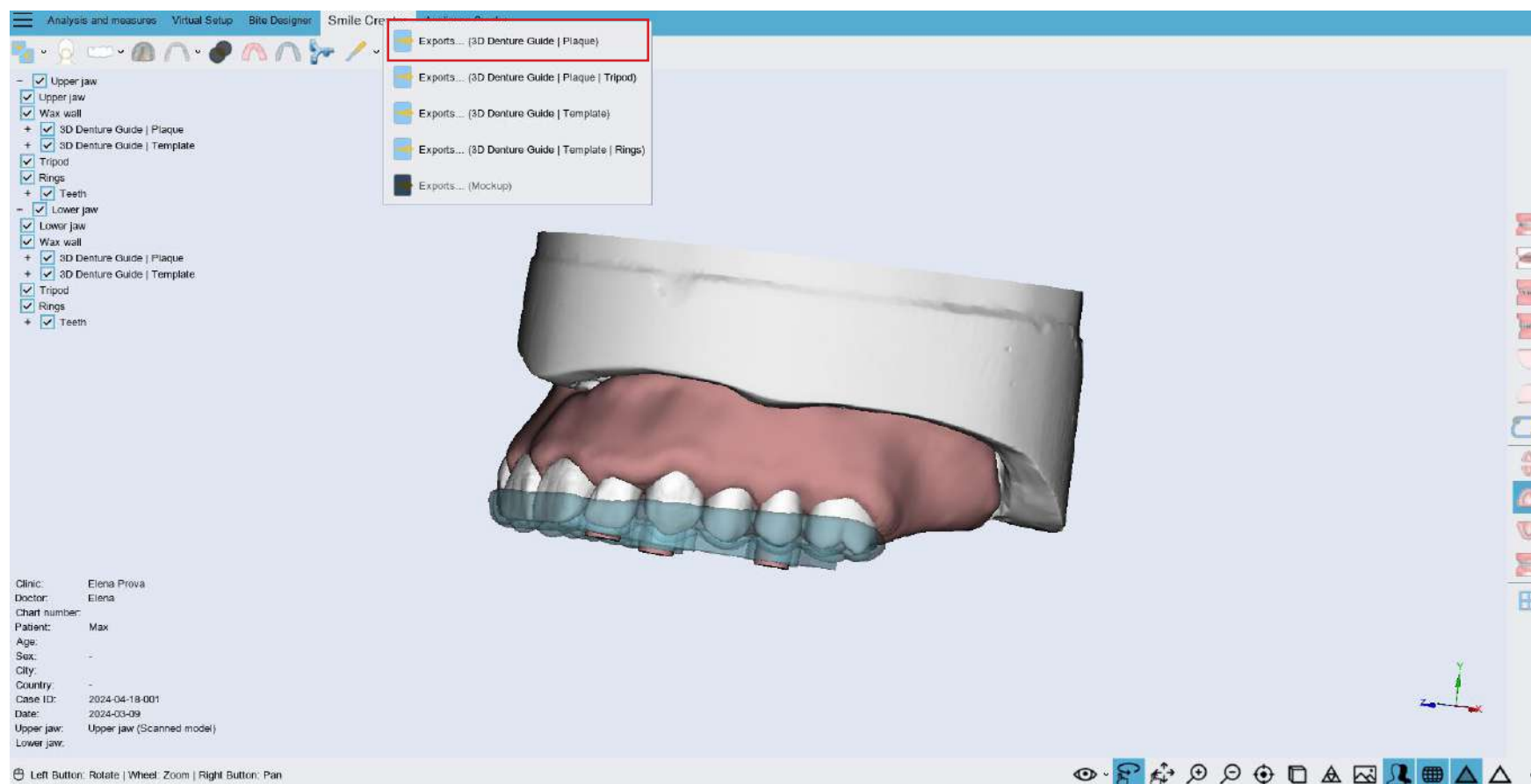




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12° TRY-IN EXPORT

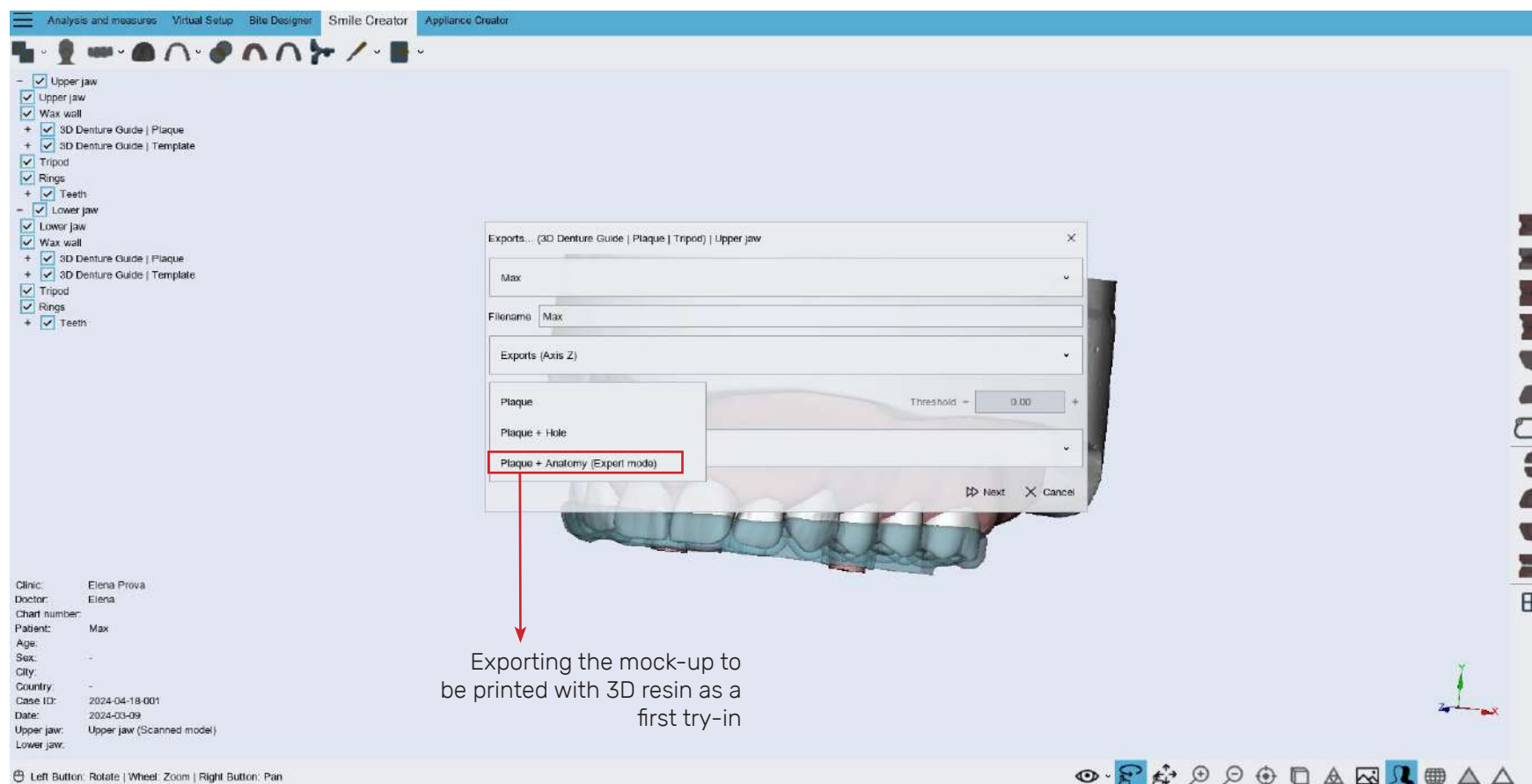




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12° TRY-IN EXPORT

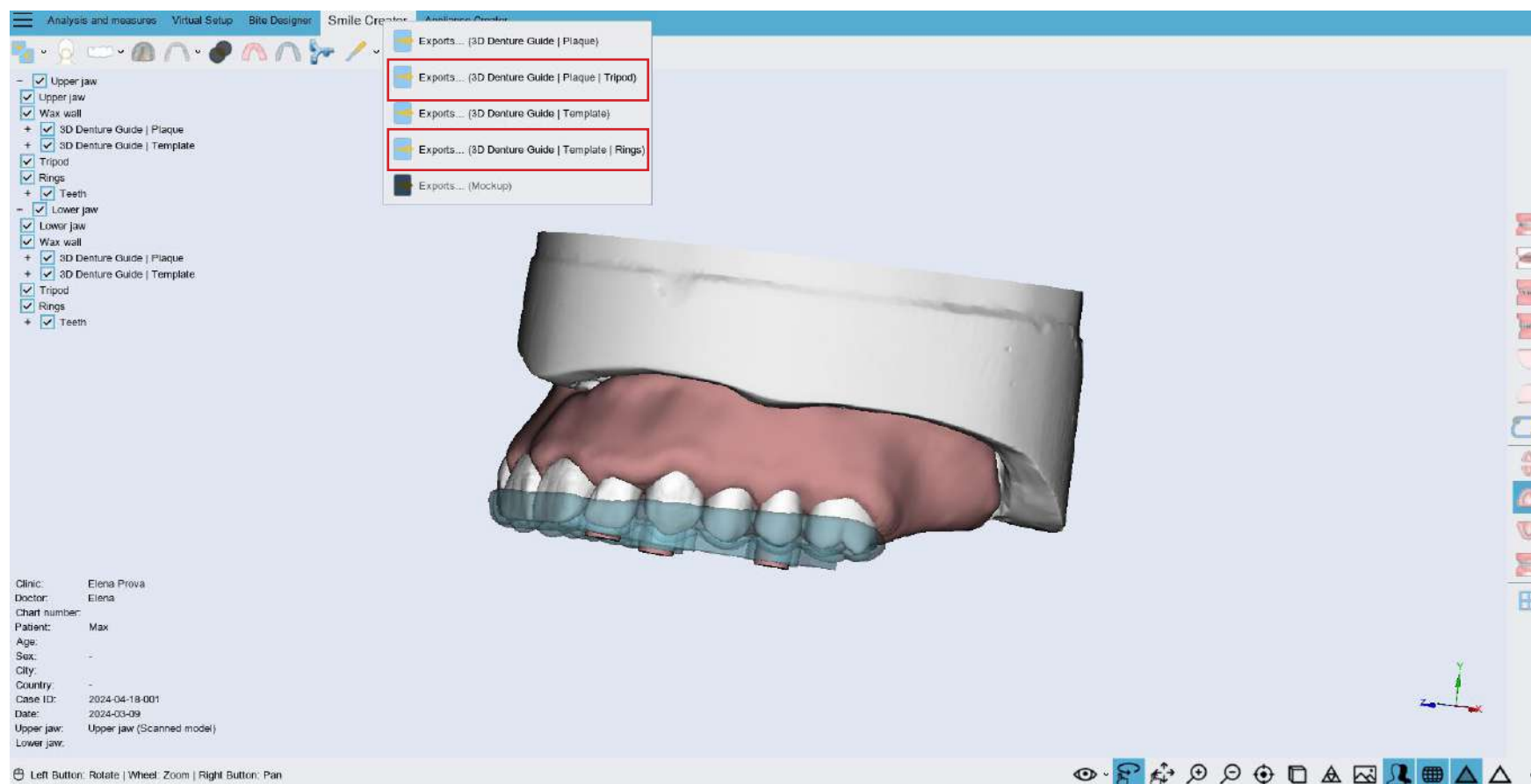




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12° FILE EXPORT (BASE WITH SOCKETS + TEMPLATE)

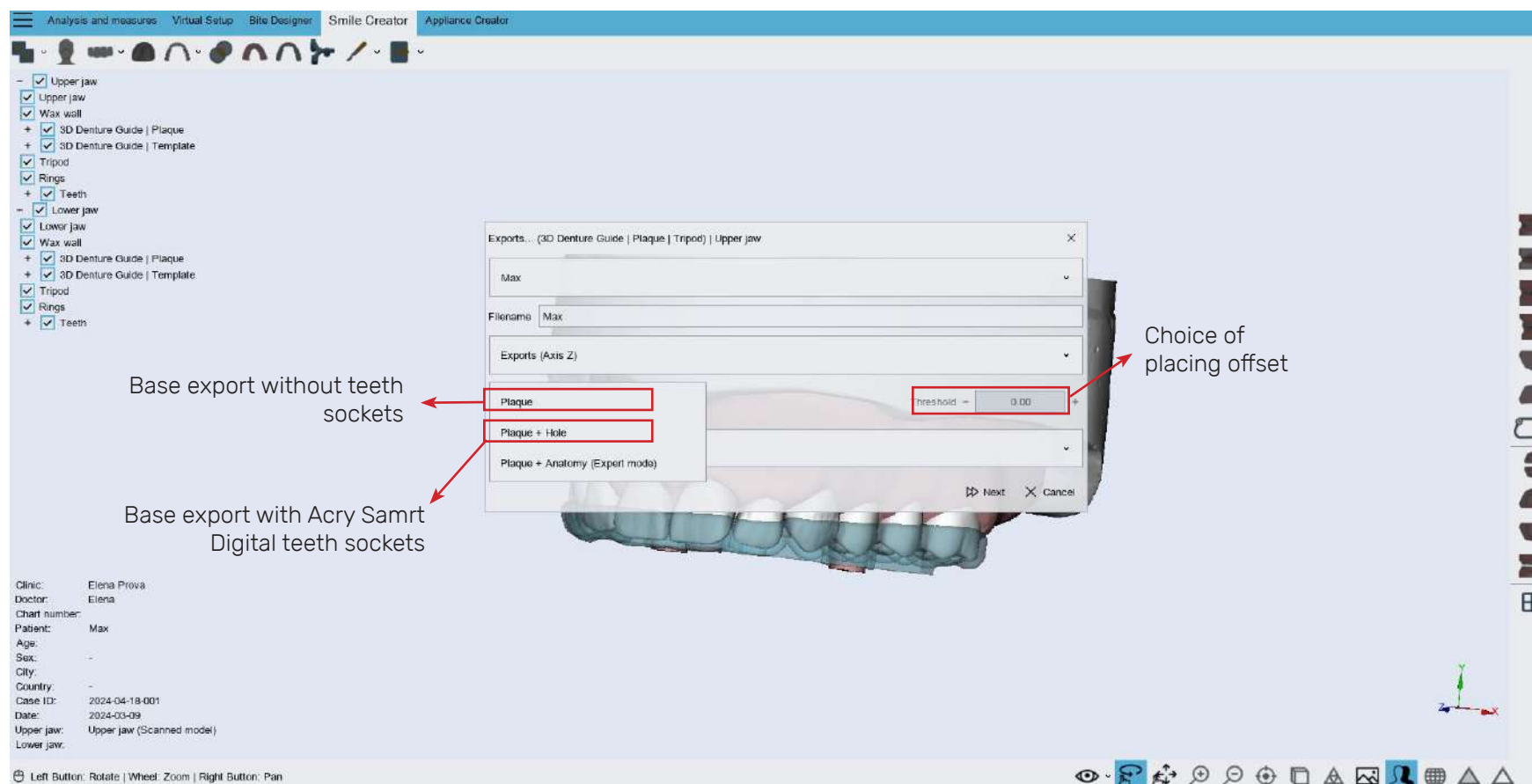




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12° FILE EXPORT (BASE WITH SOCKETS + TEMPLATE)





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