

TECH IN MOTION

By MODJAW

THE 4TH DIMENSION LIVE AT THE CHAIR

CONCEIVED BY DENTISTS FOR DENTISTS



USER MANUAL

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1 General product information

1.1 Exclusions of warranties and limitations of liability

1.1.1 Copyright

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All rights reserved. No part of this document may be reproduced, transcribed, transmitted, disseminated, modified, merged, translated into any language or used in any form - graphic, electronic, or mechanical, including but not limited to computer systems, photocopying, recording or storage and retrieval of information without the prior written consent of Modjaw. Copies of the software included in this document are illegal.

1.1.2 Guarantee

If the user installs additional hardware or third-party software, this will be the only responsibility of the operator and the manufacturer's warranty will no longer apply.

Modjaw is not responsible for damages or functional errors caused by improper use of the software or the use of inappropriate computer equipment.

The life of the device is 3 years from the date of delivery. This includes the parts contained in the patient kit.

1.2 Manufacturer information

Manufacturer

Modjaw

Modjaw®

11-13 Avenue Albert Einstein

69100 Villeurbanne

France

Phone: +33 (0)6 99 60 07 77

Email: info@Modjaw.com

Website: www.Modjaw.com/fr/



Australian sponsor name: Freyr Australia Pty Ltd

Australian sponsor address: 46 Dora Street, Blacktown,
NSW, 2148
Australia

Trademark

Modjaw is a registered trademark.

CE marking

The device Tech in Motion is classified as class I medical device and is CE marked by auto certification:



1.3 Structure of the user manual

This document is a guide for users of the TECH IN MOTION device. The manual contains instructions for installation, pre-use verification, use and storage of the device.

It also includes technical data as well as safety, hygiene and maintenance instructions.

This document is intended to be read by anyone who is supposed to interact with the medical device, such as:

- Dentists, to operate the device,
- Representatives of the company to manage the transport and maintenance of the system

ModJaw provides security, reliability and performance of the device and related instruments, such as:

Fixtures, extensions, new settings, modifications or repairs are made by Modjaw. For authorized parties, they will be performed by Modjaw or authorized and trained technicians or authorized dealer personnel.



Please read the instructions in this user manual carefully before using the medical device.

1.3 Use of labelling symbols



CE logo which indicates that the medical device meets the requirements of European Directive 93/42 / EEC of 14 June 1993.



Indicates a security warning



Follow the instructions for use



Name and address of the manufacturer



The year of manufacture of the device is identified



Product reference number in the manufacturer's catalog



Serial number of the medical device (1 unique number per equipment)



Lot number of the equipment (1 number common to a series of devices)



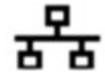
Information on how the device is to be recycled or disposed of is identified.
 In accordance with Directive 2012/19 / EU, transcribed in French law by Decree 2014-928, the device must not be disposed of with household waste but directed towards separate collection points.



The device contains wireless radio frequency equipment



USB connection



Network connector (RJ 45)



The product is type BF according to IEC 60601-1



Class 2 equipment IEC 60417-5172



Non-sterile product



Deadline for use of the device



The device can only be used once or on a single patient as part of a single treatment.



The device must be protected from water.



The device must be stored away from light.



Storage temperatures must be respected



The product is identified as fragile.

FRAGILE

1.3 Modifications

Modjaw has taken care to write this document as a guideline for using the TECH IN MOTION device. The information provided in this document is subject to change without notice. We have made every effort to ensure the accuracy of the information provided in this document. In the event of an error identified by the user when reading this manual, please contact Modjaw before using the device.

Last reviewed : 20/12/2021

2 Usage environment and security

2.1 Security

2.1.1 Intended use

Tech in Motion® is an active medical device intended to record and analyze mandibular kinematic to help diagnosis, characterization and therapeutic planning of occlusion patterns.

2.1.2 Intended population

Used in patients of any age who are able to mentally follow the operator instructions exactly

2.1.3 Contraindication

The patient must have a morphology compatible with the port of the trackers (wearing the frontal tracker and setting the mandibular marker support in the mouth).

The use of the Tech in Motion device is contraindicated for patients with pathologies that are incompatible with correct registration of dental models.

The use of the Tech in Motion device is contraindicated for patients who are unable to perform the necessary instructions for the procedure (lateral and anteroposterior jaw movement) or to maintain a semi-lateral position lying down for the duration of the exam.

2.1.4 Environmental conditions



The user agrees to install and use the device in a location that meets the environmental conditions specified below. The TECH IN MOTION device is intended for use in dental offices only. The system is suitable for use in dry interior rooms, as can be seen in hospitals and medical practices.

The optimal environmental conditions for using this device are as follows:

- Temperature: 15 ° C to 25 ° C
- Atmospheric pressure: 80 kPa to 106 kPa
- Humidity level: 30% to 75%
- Maximum altitude: 2000 m

The device is not intended to be used:



- In areas where there is a risk of explosion or in a flammable atmosphere (enriched with oxygen)
- Near high frequency surgical equipment
- Near a strong source of heat or light at the risk of corrupting the proper functioning of the device (total cessation of use or malfunction leading to distorted data)
- Near magnetic fields (distorted data or measurement impossible)
- In a dirty environment (risk of contamination of the device)

2.1.5 Obligations of the user



The use of the device is reserved to qualified and trained dentists, or under their control (students in dental surgery).

The device should not be used by unqualified and untrained persons.

All data must be interpreted by a qualified specialist who is able to verify the appropriateness of the latter, taking into account any medical history.

Under no circumstances should the device be used for invasive measurement or invasive surgery, putting the patient at risk based on measurement results. The outputs of the device Tech in Motion are adjunctive to other diagnostic and therapeutic modalities.

The user must ensure that all operating instructions provided on the system are accessible to all users at all times and that they are kept near the device.

The elements of the device are not designed for use with any other system than Modjaw's.

Any inappropriate use is prohibited:



- Do not attempt to prepare or maintain the device in any way other than those described in this manual
- Do not modify the device and its instruments, if the device is changed without the permission of Modjaw, the device warranty will no longer be valid
- Never attempt to introduce any inappropriate object that is not part of the device into the device.

3 Product description

3.1 List of components

Modjaw's Tech In Motion feature consists of:

Quantity	Name of the components	Reference	Picture
1	M-JEE CART (Cart without camera or computer)	AR00011	
1	M-JEE CAM (Camera)	AR00010	

1	PC panel	AR00009	
1	Modjaw Software	AR00012	
2	TALLY Stylus	AR00033	
1	TIARA frontal tracker	AR00034	
200	Marqueurs réfléchissants	AR00038	
20	Support marqueur mandibulaire	AR00022	
2	Marqueur mandibulaire SMIL'IT	AR00035	

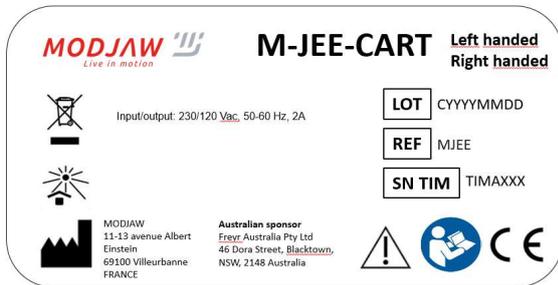
3.2 Labelling

The following components of the system have their own individual labelling:

- M-JEE CART (Cart)
- M -JEE CAM (Camera)
- PC panel
- Modjaw software
- Mandibular tracker SMIL'IT
- TIARA frontal tracker
- TALLY pen tracker
- fork
- fiducials

M-JEE CART (Cart)

The identification label of the cart is located behind the base of the cart. The label specifies whether it is a right-handed or left-handed version of the carriage.



PC panel

The Panel PC's rating label is located on the back of the Panel PC. It includes at least the following information:

- Serial No
- Product No
- Input : 100-240 Vac (voltage), 50-60 Hz (network frequency), 2A (maximal power)

Place of manufacture, cULus logo, CE logo, FCC logo, IC logo

Software

The labelling of the software is given by its homepage which includes the software version.

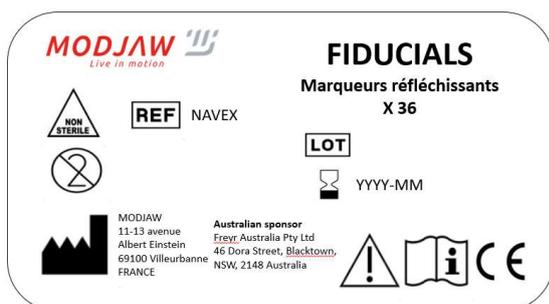
TALLY pen tracker



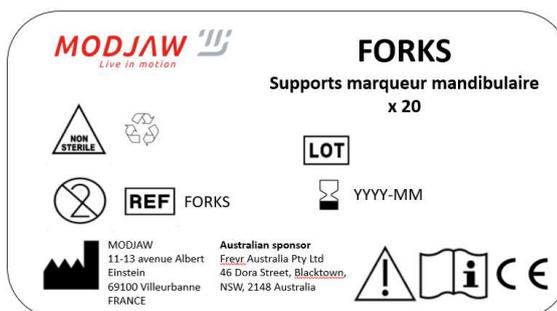
TIARA frontal tracker



Fiducials



Forks



Mandibular tracker



3.3 Tech In Motion feature description

3.3.1 M-JEE CART cart

The aluminium cart is composed of several elements:

- A bracket that carries the Panel PC (inside this bracket transit several cables: RJ 45, PC power ...)
- An articulated arm that carries the camera and allows the camera to be positioned approximately 0.8 to 1m from the patient's face
- A bracket that carries the PC panel
- A base on which are attached 4 wheels with brakes allowing its movement
- A box of the base under which the power supply and the isolation transformer are installed
- The connection cable to a dental office wall socket (the cable can be wound for less space)



Warning: the cover of the cart must not be removed and none of the electrical elements inside this cover must be removed and / or replaced.

The arm locks at 90 ° on the right or left side. There is therefore a possible total movement of 180 ° from below. The cart is delivered already assembled and ready to use (camera and PC panel are fixed on the cart). The camera is attached to the carriage and delivered in right or left-handed configuration, depending on the user's preference.





Warning: the cart is mounted on wheels, the user must make sure to lock the wheels before each use.

3.3.2 M-JEE CAM

The M-JEE CAM Camera is an optical location system specifically designed to detect and track reflective sensors in real time.

The M-JEE CAM camera is delivered mounted on the cart. The camera is fixed on the arm of the cart in right-handed or left-handed configuration, according to the choice of the user. The following sections detail the characteristics of the equipment.

Specifications of the M-JEE CAM camera

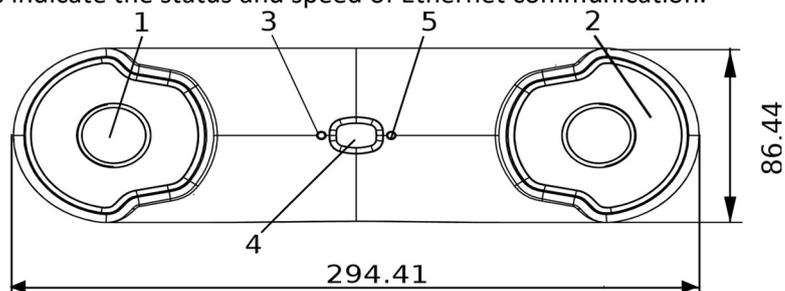
The camera specifications are shown in the table below:

Characteristics	Data
Dimensions (L × W × H)	294mm × 86mm × 99mm
Weight	1.28kg
Infrared	~ 850nm
Power requirements	Power over Ethernet (PoE+ IEEE 802.3at-2009) 48V 0.6A

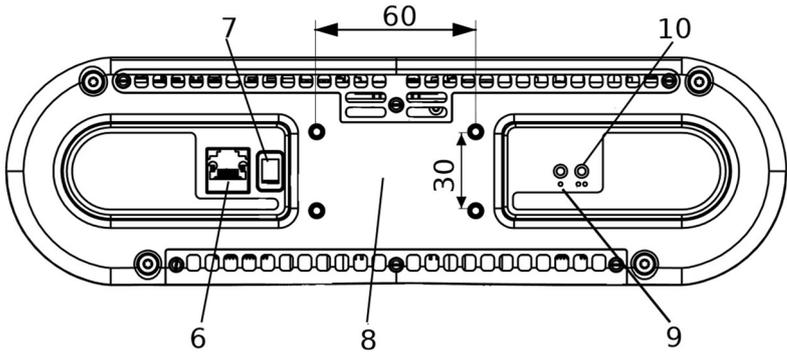
Description of the M-JEE CAM camera



1. The figure below shows the front view of the camera. It should be noted that "Left" and "Right" always refer to the vision of the camera.
2. The rear plane of the camera is shown in the following figure. The Ethernet interface provides both communication and power. The device is switched on / off using the power switch. Finally, both LEDs indicate the status and speed of Ethernet communication.



Front view of the M-JEE CAM camera, showing: (1) camera sensor; (2) IR LEDs sound; (3) User status LED; (4) IR receiver; (5) Device status LED.



Description of the rear panel of the M-JEE CAM camera, showing: (6) the RJ-45 connector, provides power and data transmission between the camera and the computer; (7) Power switch, turn on or off the unit; (8) Permissible surface for mounting on 4 × M4 screws; (9) LED Ethernet RX (10) LED Ethernet TX.

The LEDs on the front of the camera can have multiple states indicating normal operation or not of the camera. The different states are described in the table below.

LED indicating the status of the camera	green	Intermittent	The camera is heating, initialization course
	green	Continuous	The camera is ready to use
	red	Intermittent	Critical error, Please contact ModJaw

Description of indications provided by the LEDs on the front of the camera

Principle of operation of the camera M-JEE CAM

- Here is a simple description of how the camera works:
1. The camera emits infrared light (IR)
 2. Infrared light is reflected by reflective markers
 3. The camera detects reflected (or emitted) infrared light and transmits the information to the host computer with status information
 4. The computer, equipped with the software, extracts the position of each detected point, calculates the 3D position of each detected source, then attempts to match the geometries of known markers.



The camera should not be used covered: this would change the operating temperature of the device and could change the optical path, which would cause a change in the calibration parameters, resulting in a degradation of the accuracy of the device.



Be careful not to obstruct the ventilation ducts of the camera and the PC panel.

3.3.3 PC panel

The cart is delivered with the PC panel attached to the cart. The connectors are already installed and the user must not modify the connections in place. The attachment allows the PC panel to be oriented to adjust the screen to the user's position. The PC panel must however be handled with care in order to avoid any deterioration.

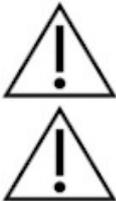
When delivered or in storage position, the PC panel can be rotated and placed in a vertical position (see picture below of the storage position of the cart) to minimize the size of the device. The user must ensure that the cables connecting the computer to the cart remain free at all times to prevent premature wear.



Illustration of the two possible storage positions of the truck

The PC panel mounted on the device is an all-in-one computer. To enable optimal operation, the PC panel must have the minimum configuration shown below:

Components	Characteristics
Operating system	Microsoft Windows 10 Pro Downgrade Win 7 Pro 64-bit OS FR
Processor	Intel Core i7-6700 3.4G 8M 2133 4C CPU
RAM	32GB DDR4-2133 SODIMM (2x16GB)
Hard disk	256GB Turbo Drive G2 SSD- M.2 PCIe cd
Storage	1TB 7200 RPM SATA 6G 2.5 HDD
Touchscreen	Greater than 21 inches



To ensure proper data protection, the user must ensure that **an updated antivirus and firewall are properly installed on the computer** as soon as the Tech in Motion device is brought into service.

Connecting the PC to the internet exposes the system to the risk of data piracy. The user must ensure that appropriate protection and cyber security measures are in place and functional on the PC (antimalware installation).

The device is not intended to be used in a network. If the user decides on a network installation, they are required to check, analyse and evaluate all associated risks.

The update of the operating system of its Panel PC is under the responsibility of the user. The user is required to have their own Windows account installed and configured on the PC.

The minimum display configuration required for optimal rendering is 1920 x 1080 pixels.

The procedure for installing and using the PC panel is detailed in section 4.1.



The user must use a PC that meets Modjaw's specifications and minimum requirements.



The user must check the PC panel at commissioning.

3.3.4 The tools (TALLY pen tracker, TIARA frontal tracker, fiducials, SMIL'IT Mandibular tracker)

The technology of the camera is based on the emission and detection of an infrared (IR) signal. Detection of reflected IR is enabled by the use of reflective trackers placed in the dedicated slots on the TALLY pen tracker, the SMIL'IT mandibular marker and the TIARA headset. The frontal and mandibular trackers, placed on the patient's head, allow the capture of the mandibular movements following a calibration and the acquisition of the characteristic points previously identified on the 3D models using the TALLY pen tracker provided for this purpose.

3.4 Install and update software

To use the software on the PC panel of the system, directly go to step 3.4.3.

3.4.1 First installation of the software

Click on the link provided by ModJaw to access the software download webpage and follow the instructions:

DOWNLOAD MODJAW SOFTWARE

MODJAW 2.1

LICENSE FILE

INSTALLATION GUIDE



DOWNLOAD MODJAW

Download the installer and the license file



INSTALL MODJAW

Launch the Modjaw installer and follow the instructions



START MODJAW

Click on the Modjaw shortcut on your desktop



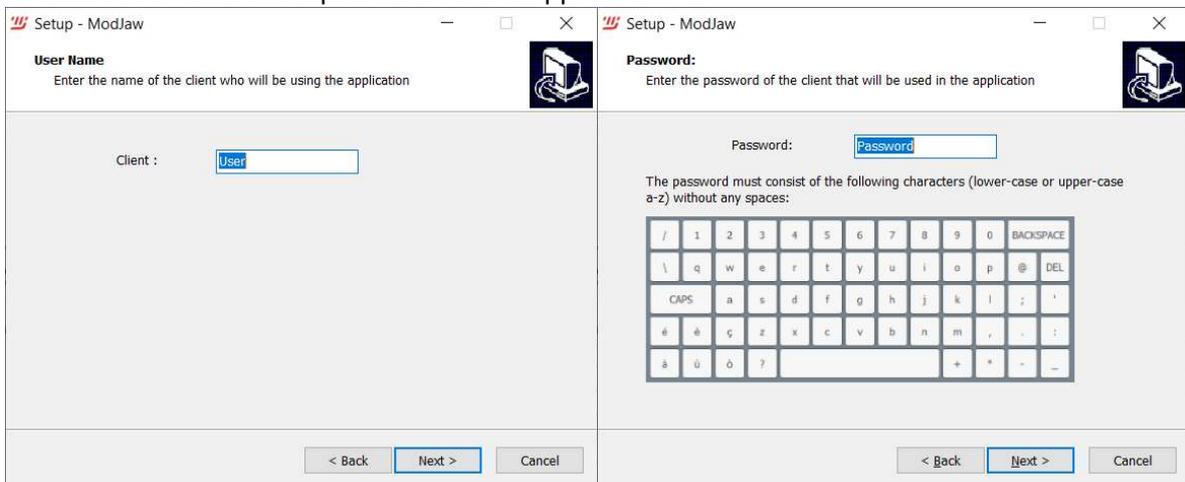
IMPORT THE LICENSE FILE

Import the license file downloaded at the step 1

1/ Download the installer (left button) as well as the license file (right button).

2/ Launch the installer to install the software and follow the instructions.

Choose a username and a password for the application:



The screenshot shows two side-by-side windows of the 'Setup - ModJaw' application. The left window is for 'User Name' and the right is for 'Password'.

User Name window:

- Title: Setup - ModJaw
- Label: **User Name**
- Instruction: Enter the name of the client who will be using the application
- Field: Client :
- Buttons: < Back, Next >, Cancel

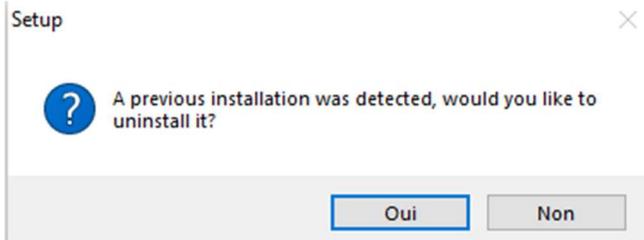
Password window:

- Title: Setup - ModJaw
- Label: **Password:**
- Instruction: Enter the password of the client that will be used in the application
- Field: Password:
- Requirement: The password must consist of the following characters (lower-case or upper-case a-z) without any spaces:
- Character Set Table:

/	1	2	3	4	5	6	7	8	9	0	BACKSPACE		
\	q	w	e	r	t	y	u	i	o	p	@	DEL	
CAPS	a	s	d	f	g	h	j	k	l	:	'		
é	è	ç	z	x	c	v	b	n	m	,	.	:	
à	ù	ó	?							+	*	-	_
- Buttons: < Back, Next >, Cancel

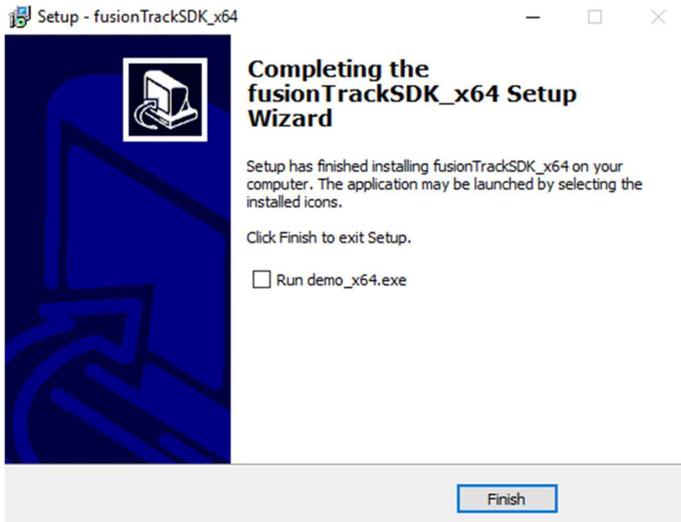
The password will be required when launching the software.

If a previous version of the software was already installed, the following window appears:



Click on “Oui” and follow the instructions.

At the end of the installation, uncheck “Run demo.exe” then click on “Finish”.



ModJaw will then be installed automatically, wait while it is being installed.

Installing ModJaw requires restarting the computer, check “Yes, restart the computer now” then click on “Finish”.

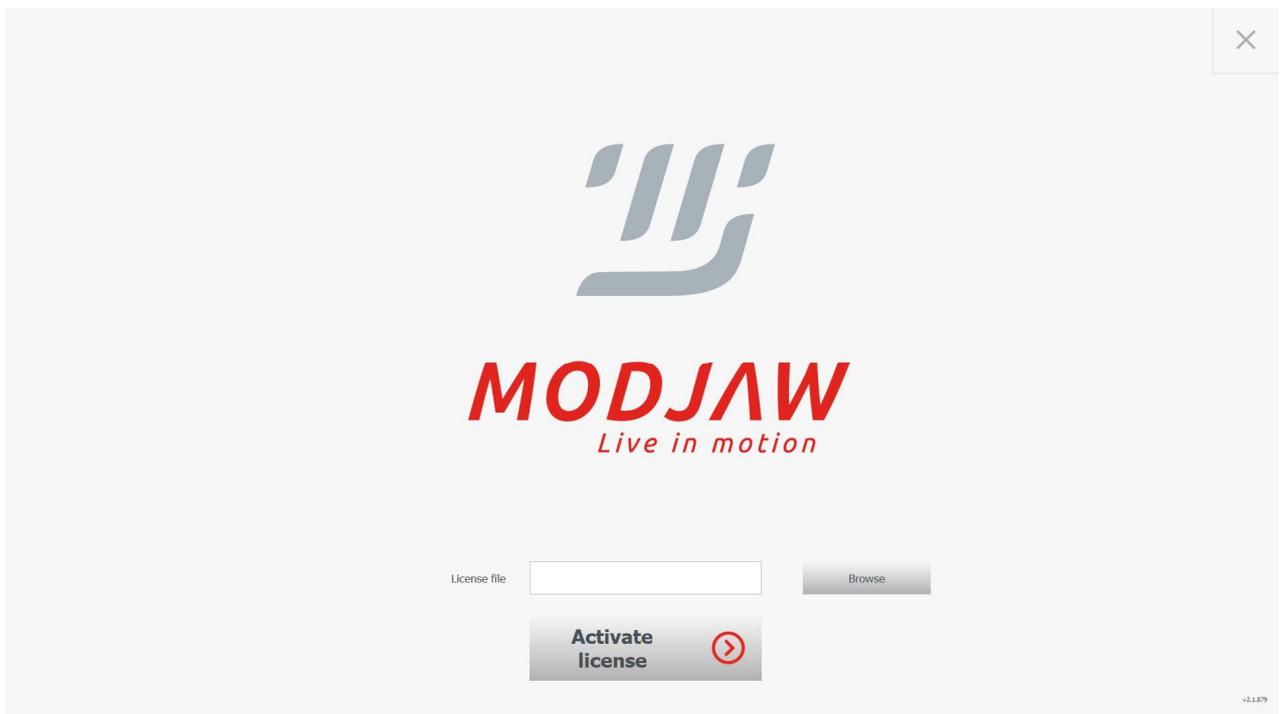


The installation is complete. The computer will restart.

3/ Once the computer has restarted, launch the software. The license activation page appears.

3.4.2 Activate the license

Launch the software. If no license has been activated, the license activation page appears.



Click on the “Browse” button and browse to the license file downloaded in step 1/ of 3.4.1 then click on the “Activate license” button.

The activation of the license requires an Internet access.

The license is regularly checked online. As such, the ModJaw system must be connected to the Internet at least once a month.

The software can now be used.

3.4.3 Update the software

When updating the software, a link to download the new version is sent to the user.

Follow the instructions in 3.4.1 and 3.4.2 to update the software.

4 Preparation of the exam

4.1 Setting up the cart

- Unfold the articulated arm of the trolley so that it makes a 90 ° angle with the stem



The user must check that the camera is oriented: the label on the back of the camera must be in place. If the camera works upside down, its performance is no longer assured.

- Place the cart along the dental chair between the knees and the patient's pelvis,
- Engage the brakes on each wheel of the truck,



Block the cart wheels before each use.

- Connect the trolley to the mains (to a wall socket of the dental office) containing a grounding connection.



Do not make unplanned connections (network connection, keyboard with non-waterproof wire, mouse with wire ...). Do not remove the capping accessories on the back of the computer.



The truck is not liquid tight.
Do not use liquid near the truck.

In case of fluid penetration:

- immediately switch off the device,
- Stop any use in progress,-
- Notify Modjaw's technical service.

- Make sure the truck is stabilized and the wheels are locked.
- Check that the truck is connected to the mains.
- Make sure the camera and the computer are securely attached to the carriage.
- Turn on the camera and let it warm up for about 20 minutes, until the LED indicating the status of the camera is green.

Note: the camera is only operational after a warm-up time. Do not attempt to use it until the end of the warm-up period.



The M-JEE CAM camera should not be used if a hot air outlet is present between the camera and the markers. This could cause bad .



The camera should be placed horizontally. An orientation other than horizontal can deteriorate the accuracy due to thermal gradients inside the camera.

- Make sure the camera turns on properly and is properly connected to its RJ45 cable.



The user must ensure that the camera is never placed within 20 cm of the patient's skin or eyes.

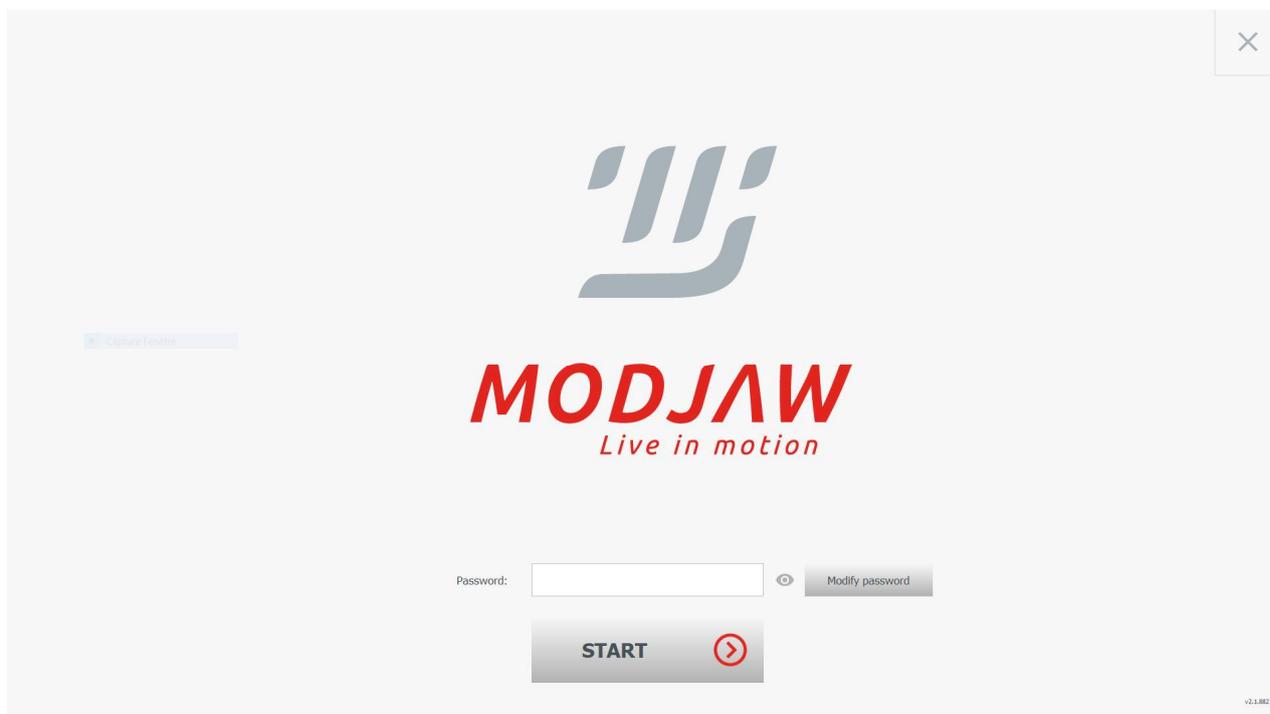
- Check that the camera is on (LED on)
- Check that the PC panel is connected to its power cable and to the RJ 45 cable,
- Turn on the Panel PC. The operating system starts automatically.

4.2 Starting the software and preparing the patient file

4.2.1 Starting the software

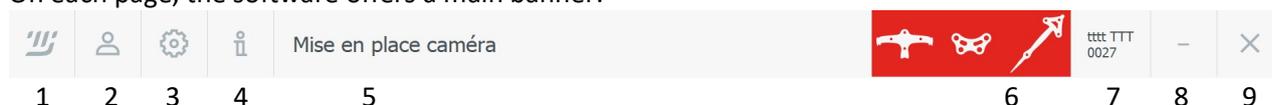
Start the PC panel and launch the application, if it has not been configured to automatically launch on computer start. The homepage of the software is accessible.

Enter the password, then press the "Start" button to start the use.



The software is organized into pages that correspond to the different stages of the analysis protocol.

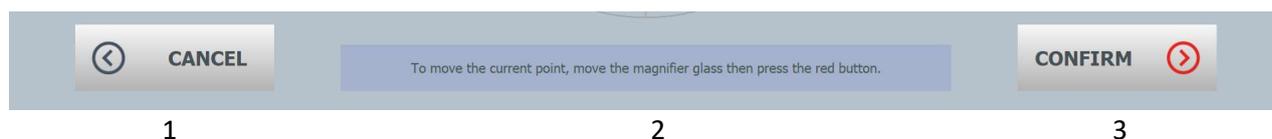
On each page, the software offers a main banner:



From left to right, this banner allows you to:

- Go back to home page (1)
- Go back to the Patient Record page (2)
- Return to key steps of the protocol and access advanced functionalities (3)
- Get additional information, export logs to support, or visualise tutorials (4)
- Identify the title of the current step (5)
- View the visibility status of the instruments. When the pictogram of the instrument is displayed on a red background, the instrument is not visible by the camera (6)
- View the selected patient and their identifier (7)
- Minimise the application in the task bar (8)
- Quit the application (9)

In the lower part of each page, the user finds the following information:



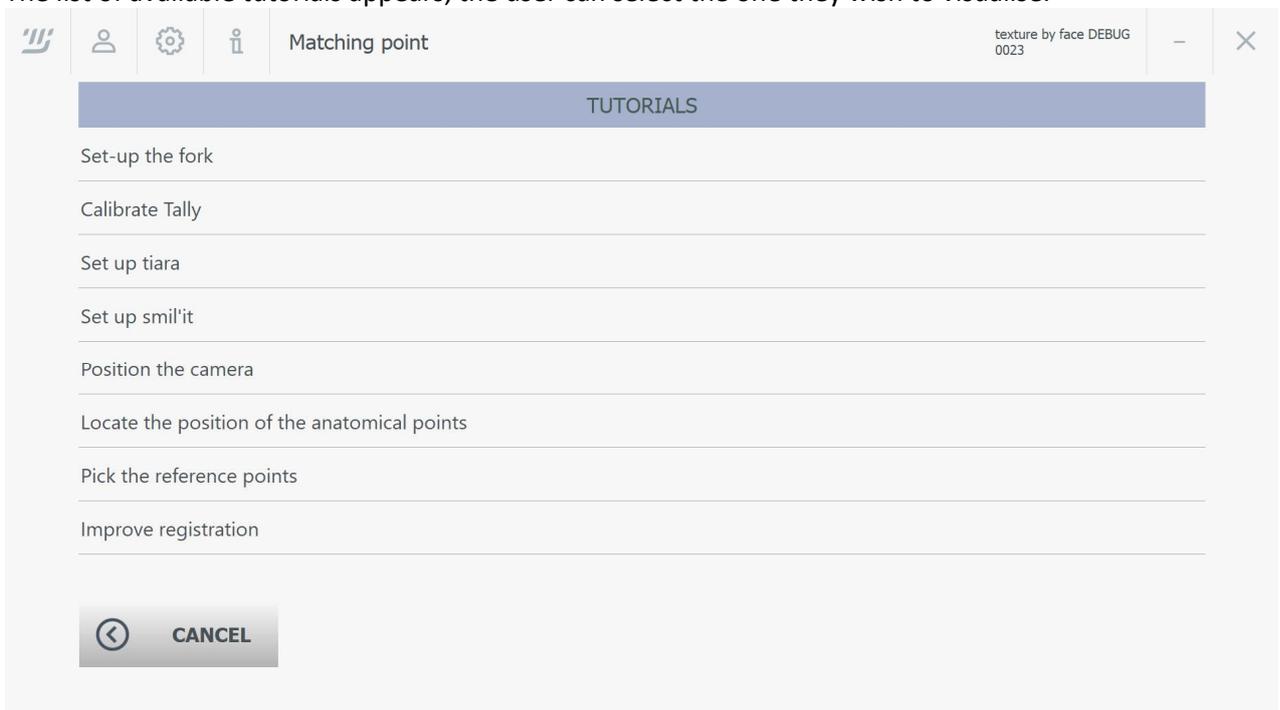
- A button to go back in the protocol (1)
- Contextual help (2)
- A button to advance in the steps of the protocol (3)

4.2.2 Help and tutorials

ModJaw tutorials are available. To access them, click on the “i” button of the banner (4) then click on the Tutorials button.



The list of available tutorials appears, the user can select the one they wish to visualise.

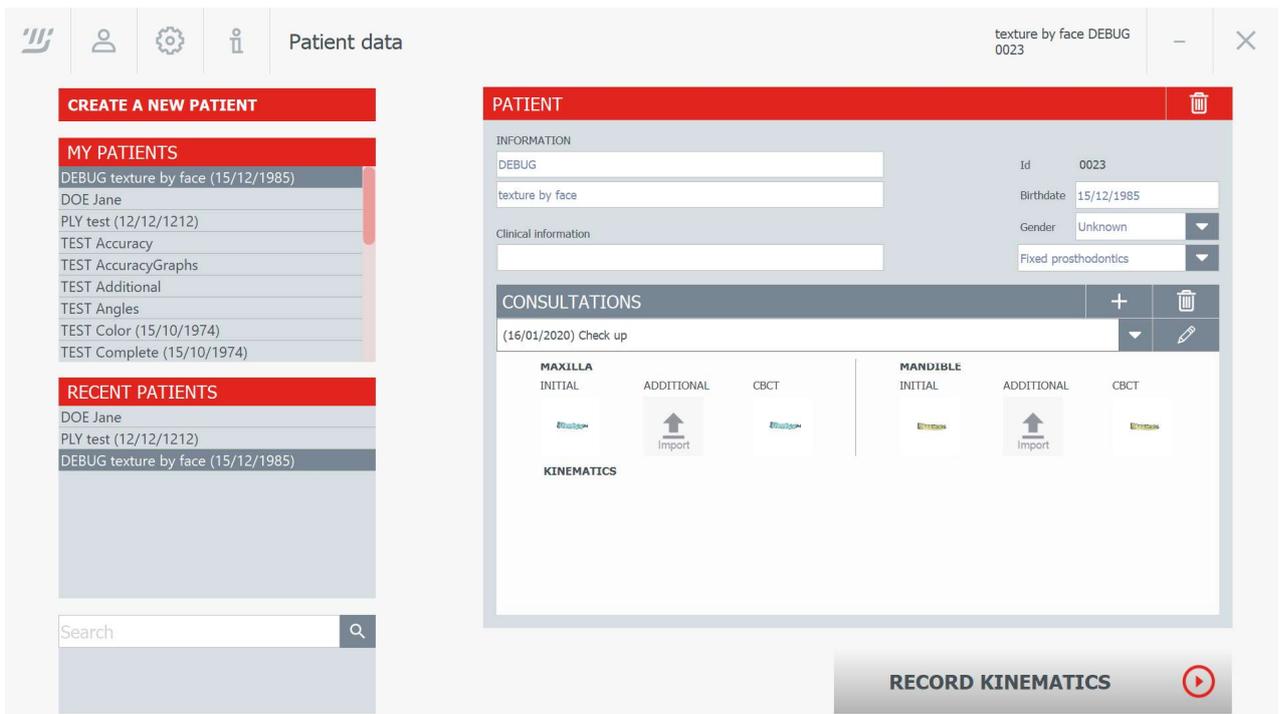


If viewing the tutorials does not work (blank page), install the video codecs (for example by installing https://www.codecguide.com/download_kl.htm).

4.2.3 Creation and management of the patient file

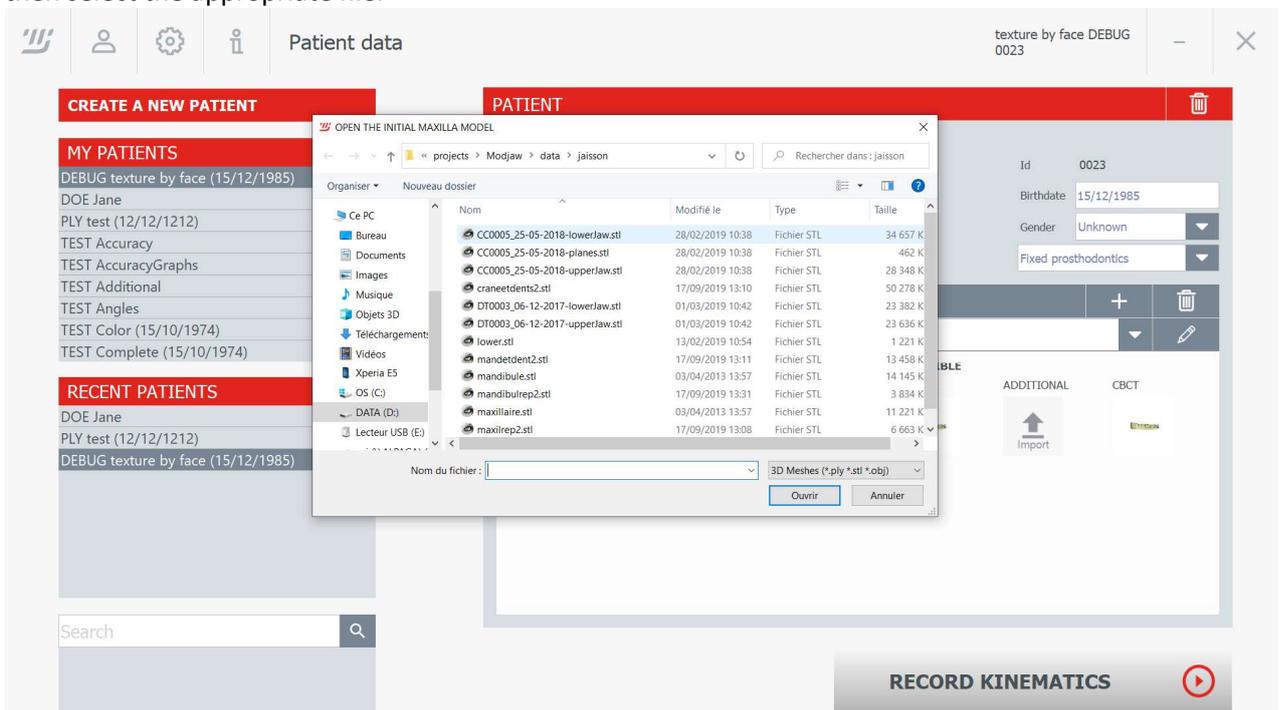
The Patient Data page allows you to:

- Create a new patient record
- Access the file of an existing patient
- Search an existing patient record
- Enter patient information
- Add and manage different patient consultations
- Import a consultation shared by another user (click on CREATE A NEW PATIENT then on the  button)



4.2.4 Importing the initial 3D models

Once the patient and the consultation are selected, the practitioner can import the 3D models of the patient's dental arches. To do this, they click on the "Import" button corresponding to the desired model, then select the appropriate file.



Prerequisites of 3D models:

- Mesh type models
 - in binary STL format
 - in binary or ASCII PLY format with a unique texture and texture coordinates per vertex, or with texture coordinates per face, or without an associated texture but colour per vertex data.
- Mesh at 1:1 scale, expressed in mm

- The Maxillary model and the Mandible model are imported in the patient's reproducible occlusion position. They are expressed in the same frame of reference.

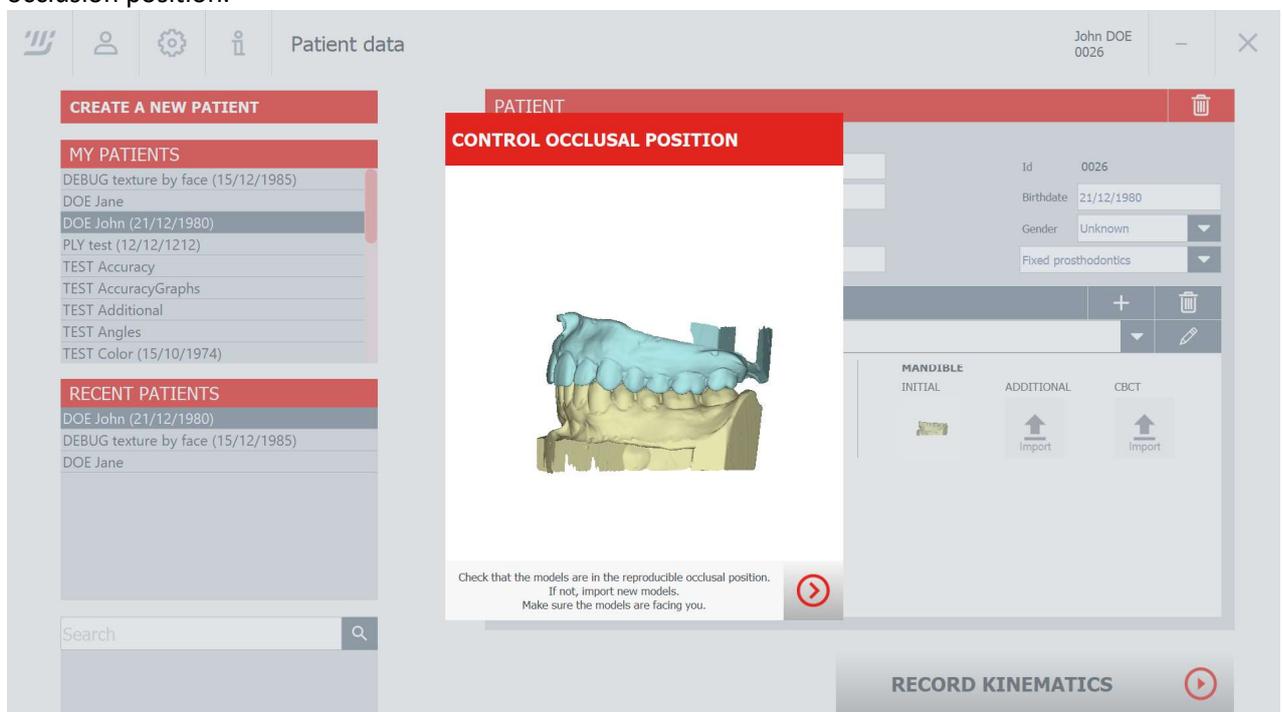
Recommendations on 3D models:

- Minimum mesh precision: 200 μm
- Homogeneous and regular mesh, especially in contact areas
- Average edge size: 300 μm
- Maximum resolution: 300,000 vertices



The quality and precision of 3D models of dental arches imported into the application have a direct impact on the accuracy of the system. It is the user's responsibility to select models that conform to the above prerequisites and recommendations, as well as their intended use.

When importing models, the user must visually check that the models are imported and that they correspond to their current patient. They must also visually ensure that the models are in the reproducible occlusion position.



The user is responsible for importing mandibular and maxillary models generated in the patient's reproducible occlusion position, and visually checking that is the case when importing the models into the software. Any relative positioning defect of the models has an impact on the accuracy of the software.



The user is responsible for importing the mandibular and maxillary models corresponding to their patient.

4.2.5 Import CBCT models

Once the initial models have been loaded, the user can import the CBCT models of their patient. These models must be matched to initial imported 3D models beforehand.



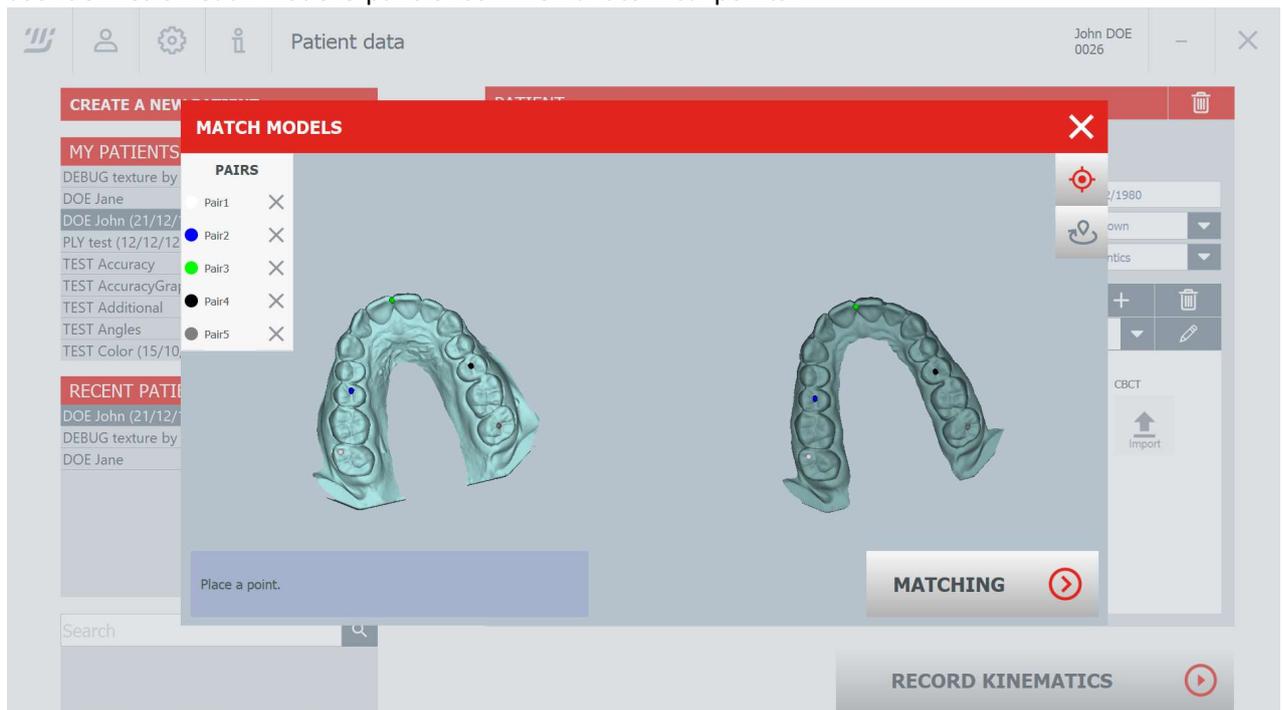
The quality and precision of 3D CBCT models imported into the application have a direct impact on the accuracy of the system. It is the user's responsibility to select models that conform to the above prerequisites and recommendations, as well as their intended use.



The user is responsible for importing the CBCT models corresponding to their patient and segmented and registered on the initial models with sufficient precision.

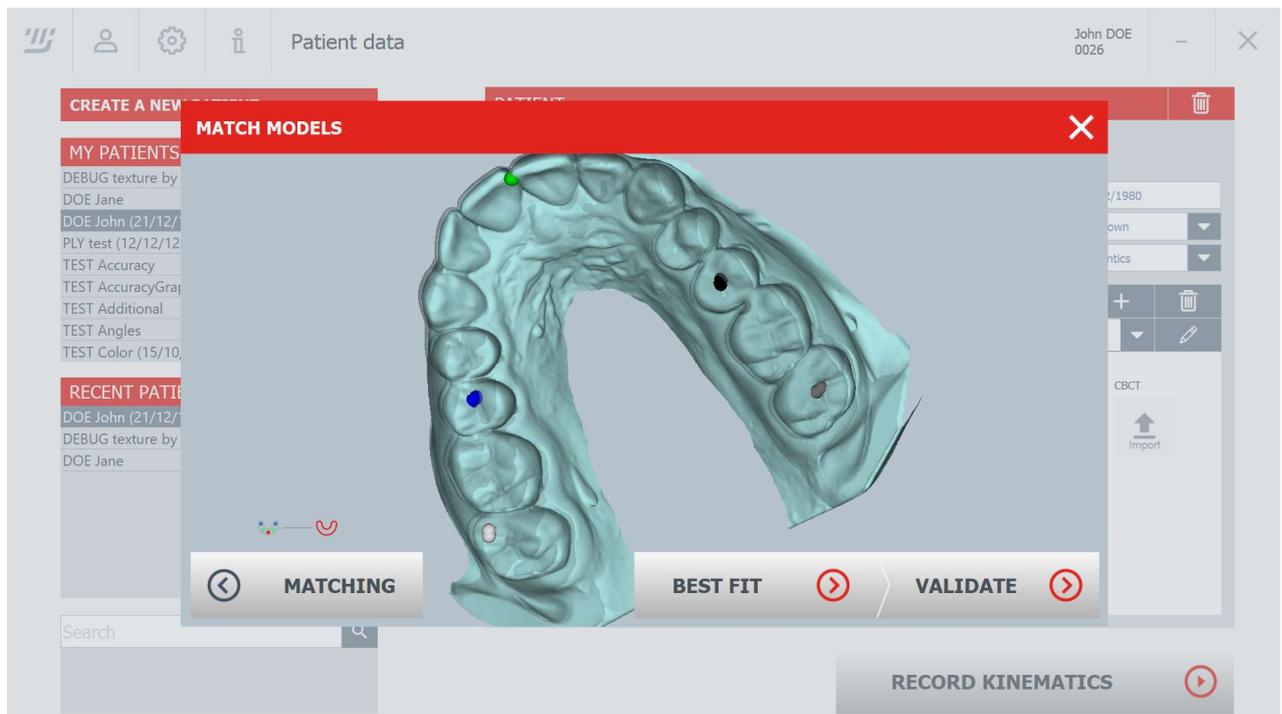
4.2.6 The import and the matching of additional 3D models.

Once the initial models have been loaded, the user can also import additional models of their patient, for example modified models. These models are then matched compared to the initial models. For this, the user defines on each model 5 pairs of common anatomical points.

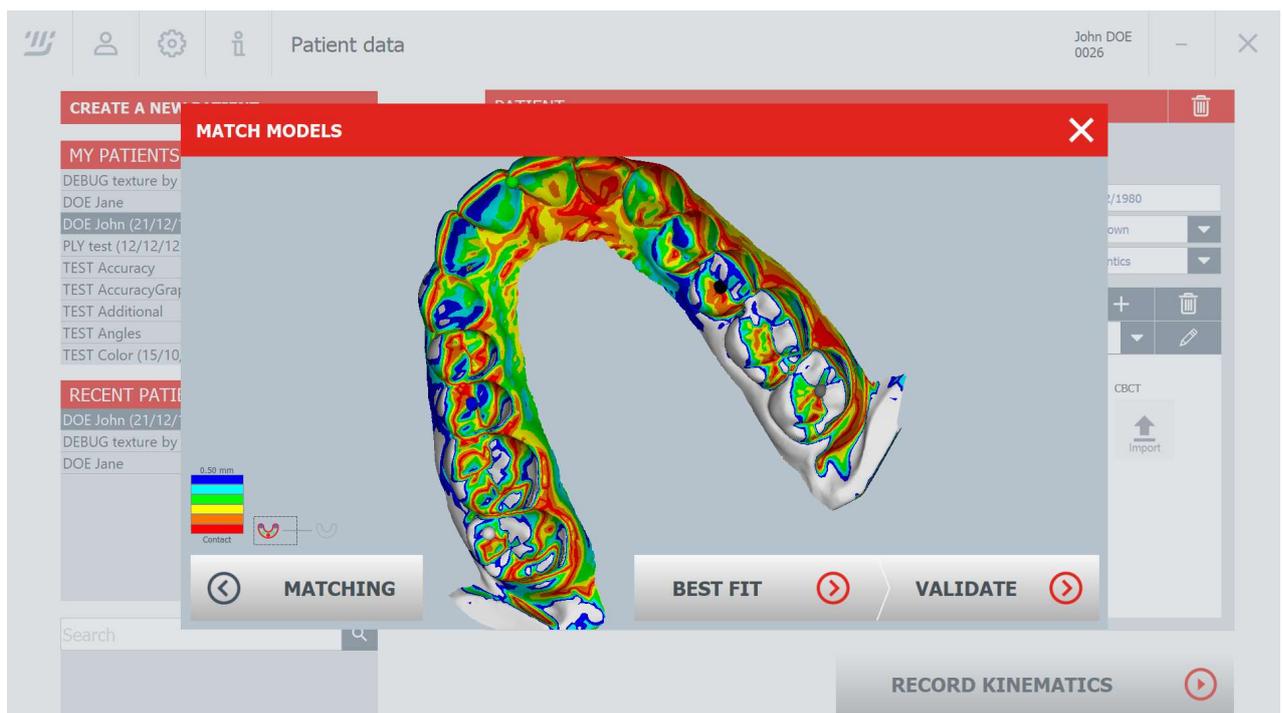


The user then validates the quality of the matching, by visually verifying the superposition of the models. Two modes of representation are available:

- A transparency mode



- A distance map mode quantifying the level of superposition of the models

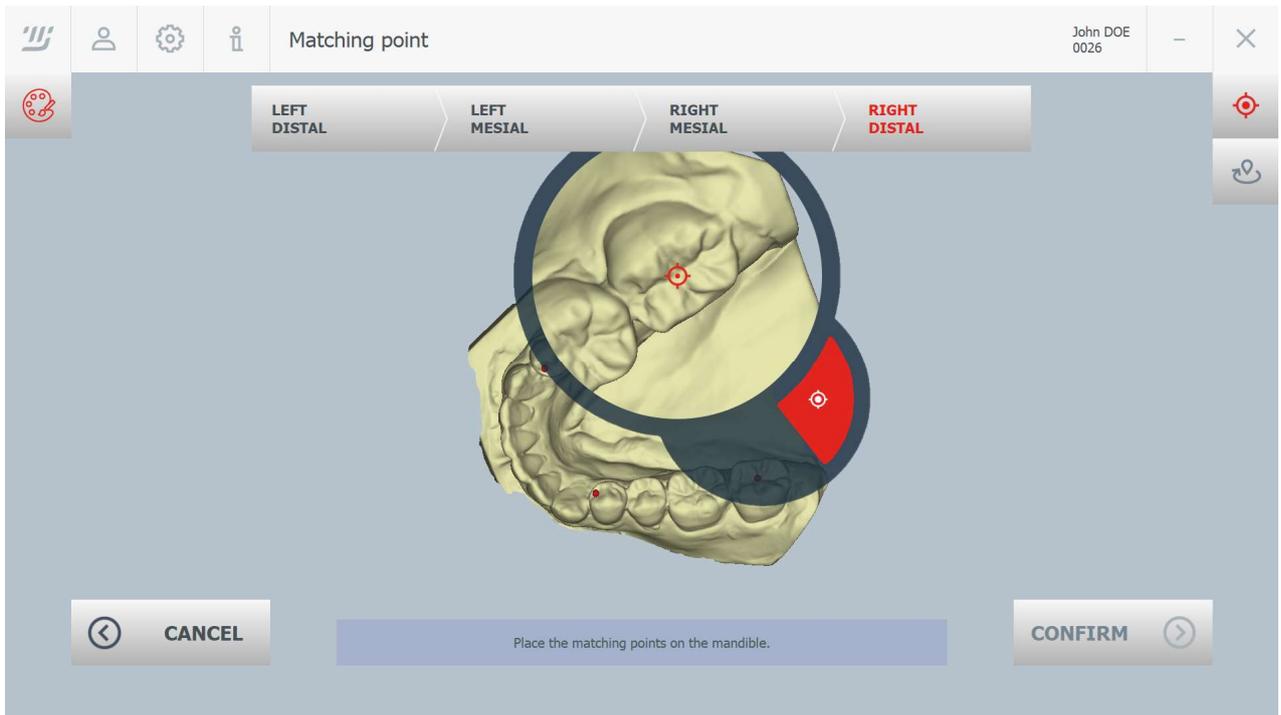


If the quality of the matching is insufficient, the user can return to the matching step ("matching" button) to modify the positioning of the points, or click on the "Adjustment" button so that the software refines the registration automatically.

When the matching is satisfactory, the user clicks on the "Validation" button.

4.2.7 Identification of the matching points

In order to be able to register the 3D models of the patient, the user identifies on the 3D model of the mandible 4 remarkable points that they will acquire in the mouth later in the protocol.



For this, they can zoom the 3D model or rotate it, then switch to the “point selection” mode to position each of the 4 points. A previously positioned point can be readjusted.

2 modes of interaction with the model are proposed:

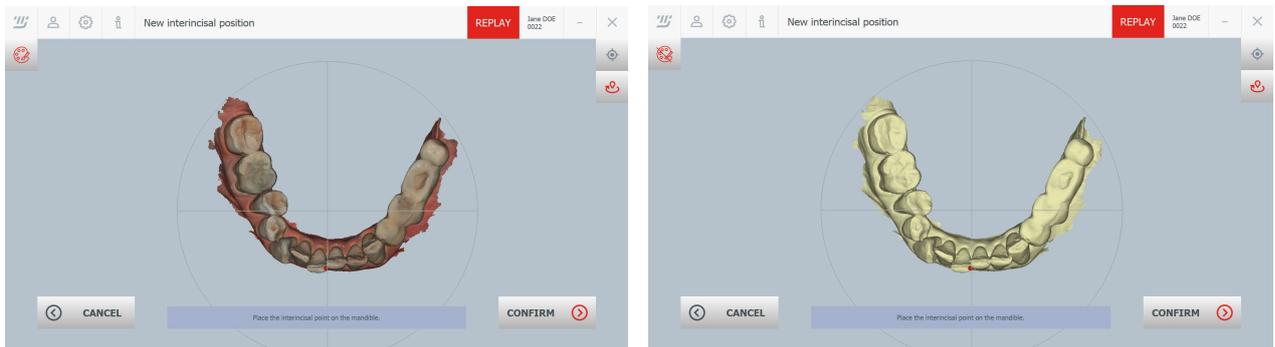


- the model can be rotated and zoomed. Points cannot be selected



- points can be selected. The orientation and zoom of the model cannot be modified.

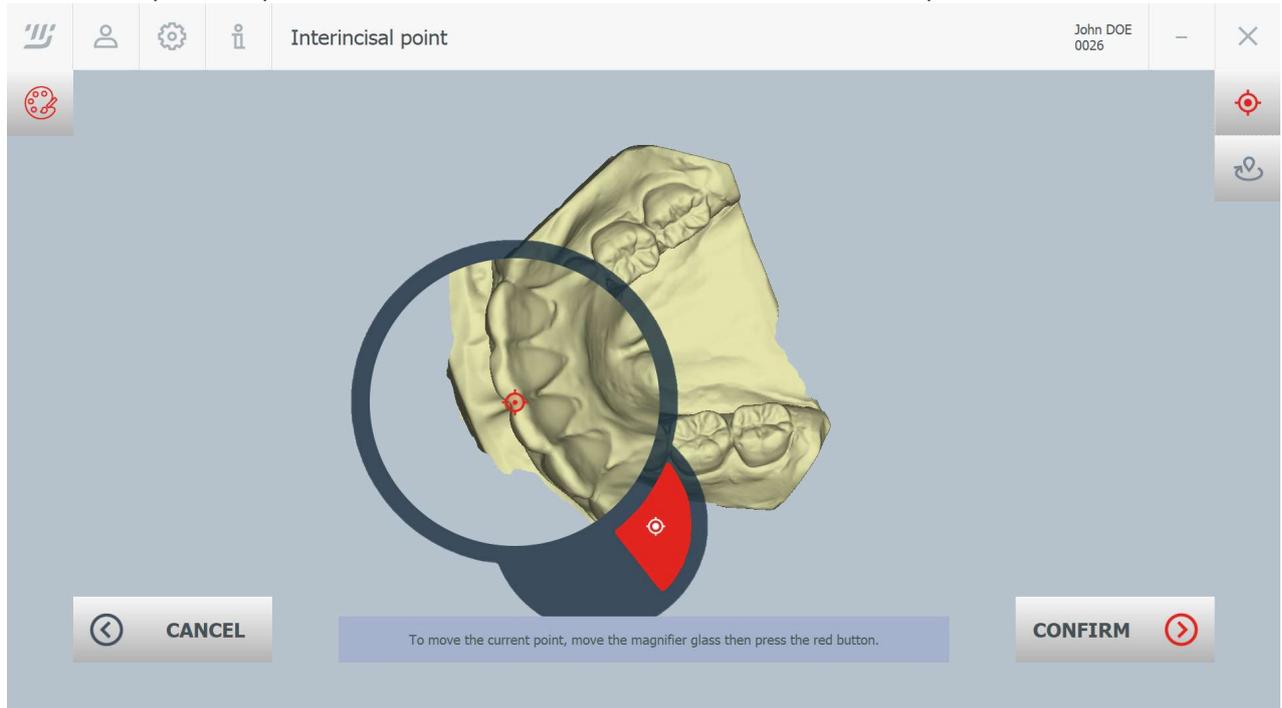
The button  activates or deactivates realistic colours on the model:



The choice of points is free. However, to ensure an accurate matching, it is recommended to position the points in the dental dimples, and distribute these points over the entire occlusal surface. In addition, these points should be easily accessible in the mouth with the tip of the Tally pen tracker.

4.2.8 The identification of interincisal point

As for the 4 previous points, the user identifies on the model the interincisal point of the mandible:



4.2.9 Analyze previous consultations

The user can reread the data from an earlier consultation in which kinematics were recorded. For this, they select a previous consultation and click on "Replay the kinematics". They do not need the presence of the patient or the instruments. It goes directly to the kinematics step in "Replay" mode.

The user can also add modified models or CBCT models as described above, in order to apply to the previously recorded kinematics.

4.3 Preparing the instruments

4.3.1 Some recommendations before you begin

Before use, instruments should be cleaned following the procedures described in section 7.3 of this document. All reflective markers must be removed from instruments before cleaning.



The stylus is not delivered sterile. **The user must sterilize the stylus before the first use** and before each new use by following the protocol described in chapter 7.3. Sterilization should take place immediately after cleaning.

In summary, prior to use, SMIL'IT mandibular trackers and TIARA frontal trackers were cleaned and disinfected by soaking in Enzyme Anios solution (see section 7.3 for detailed protocol or refer to the manufacturer's instructions) then dried and stored in the storage case. The TALLY pen tracker has been similarly cleaned and autoclaved to prevent cross-contamination.

Clean instrumentation should be unpacked on a clean surface to prevent contamination.



The user must check the condition of the instruments before use. The instruments must not be deformed or damaged, as this may degrade the performance of the device or injure the patient.



The integrity and proper functioning of all instruments (frontal tracker, reflective sensors, mandibular holder, mandibular tracker and pen tracker) must be checked before use in accordance with the instructions below



Check before each use that the instruments positioned on the patient are secure.

4.3.2 The assembly of fiducials

Fiducials are for single use only. They are in a bag in the patient kit box (see section 3.1 of this manual). In preparation for each examination, fiducials must be assembled on previously cleaned instruments.

On each instrument are housings to set-up the fiducials. The silver side of the fiducials should be positioned towards the front of the tracker. A simple thumb press can clip the fiducials.

Each fiducial must be locked at the bottom of its housing and its edges must be in contact with the bottom of the housing (see illustration below)



Illustration of the positioning of fiducials in the housings provided on the frontal tracker



The user must verify that the instruments are equipped with clean and new reflective fiducials before starting the instrument placement. The use of deteriorated, deformed reflective fiducials can affect the accuracy of the system.



Check for proper clipping of fiducials. Any poorly clipped fiducials can alter the accuracy of the system.



The user must wear gloves to assemble the fiducials to avoid contaminating clean parts.

Once the instruments are ready, the user can continue with the calibration of the tip of the TALLY pen.

4.3.3 Calibrating the TALLY picking head



The tip of the Tally Pen must be calibrated before each use.

This calibration step is performed by following the corresponding instructions on the software interface. For this, the user clicks on the "Calibration of the Tally" button.

Then, the user positions the TIARA frontal tracker held in hand facing the camera, at a distance of about 80 cm. They make sure not to hide the reflective markers with their fingers, then position the tip of the TALLY pen in the calibration slot, small cone located at the top of the TIARA frontal tracker, as shown on the screen (see illustration below).

When the two instruments are visible by the camera, they start the calibration by clicking on the screen on the "Launch" button. The start is delayed a few seconds.

The user then makes circular pivot movements, wide and slow, with the stylus, while maintaining the tip at the bottom of the cone during the calibration period. If the calibration is successful, the software automatically goes to the next step.



Any fall of an instrument before or during use can degrade the accuracy of the system. If the instrument falls between calibration and acquisition, it is recommended to recalibrate the stylus or to change the stylus and redo the calibration

4.4 Instructions to give to the patient before starting

It must be ensured that the patient is able to do the examination. They must be able to understand the instructions and execute them.



The user must inform the patient that they must try not to move during the acquisition. The patient should not touch the device (cart, panel PC, camera).

The patient should be in a semi-sitting position with the head slightly tilted back, facing the camera.



The user must warn the patient that they should not look directly at the camera front.

To enable the camera to provide measurements, the markers must be in the camera's working volume throughout the acquisition process. The camera must be positioned facing the patient.

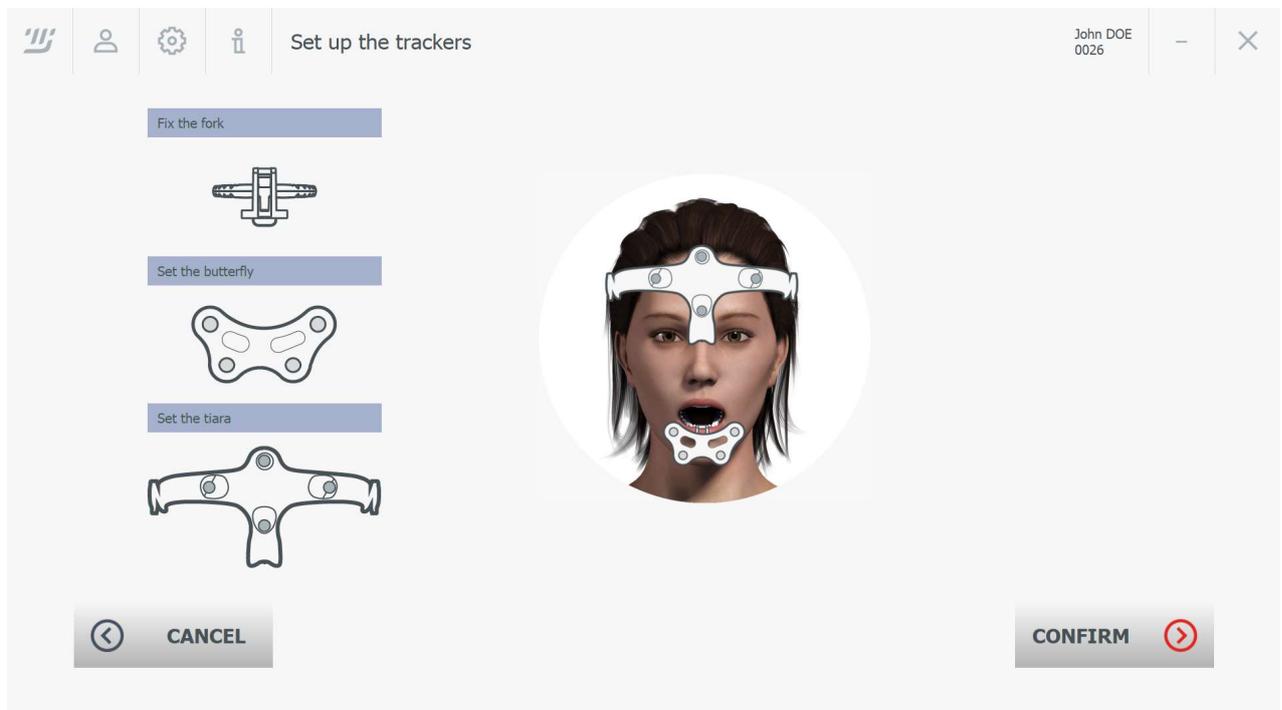
Reflective surfaces and polluting lights (sunlight, lamps with a high IR component of around 850 nm, etc.) should be avoided. During acquisition, potential sources of sunlight (or equivalent) should be removed.

4.5 Setting up the instruments on the patient

The software interface guides the user in setting up markers. As shown below, this step allows to position the frontal markers (TIARA headset) and mandibular markers (SMIL'IT).



It is important to check that the instruments are correctly positioned and that they do not move once in place. Otherwise, the accuracy of the system will be altered.



4.5.1 Mandibular marker placement - SMIL'IT Mandibular Marker

In order to prepare the patient for the examination, the user must position the SMIL'IT mandibular marker. This mandibular marker is held in front of the mandible of the patient with a support. These supports for the mandibular marker are single-use pieces that can be found in the patient kit box.



Supports for the placement of mandibular markers are delivered clean. They must be handled with medical gloves.

The positioning of the mandibular marker is therefore done in two steps:

- Fixing the support in the mouth
- Clip SMIL'IT mandibular marker on the support

These two steps are described below:

Step 1: Fixing the support in the mouth:

Before insertion, the mandibular marker support can be adjusted in length if necessary. For this, just break the ends.



The user should be careful not to injure the patient with the ends of the mandibular marker holder, especially after adjustment. Check before introduction into the mouth that no roughness remains, likely to injure the patient.

The support is glued to the surface of the teeth of the mandible using a self-hardening resin (Structur types, VOCO company) following the protocol indicated by the resin manufacturer. Part of the support remains positioned outside the mouth to allow clipping of the SMIL'IT



It is recommended to use a self-hardening resin model among those recommended by Modjaw. The user must follow the application protocol specified by the resin manufacturer.

After the setting time indicated by the manufacturer of the resin, the user verifies the proper fixation of the support on the teeth of the patient. The support must be positioned in such a way it should not disturb the patient mastication, the movements of the jaw must be possible and natural.

Step 2: Clip mandibular tracker

The mandibular marker, equipped with reflective markers is then added to the support. For this, place the male part located on the mandibular marker SMIL'IT in the female part located on the outer part of the support. The patient must close the mouth during this operation to facilitate posing the marker and avoid any pain. The addition of SMIL'IT Mandibular Marker should not interfere with the patient when moving the lower jaw.



Illustration of the support clip on the mandibular marker

The user then continues with the positioning of the frontal markers.

4.5.2 Installation of frontal markers - TIARA Headset

The TIARA headset should then be positioned on the patient's head. The positioning is correct if the red rubbers located on the posterior face of the front piece are placed on the forehead and the top of the patient's nose.

The white band is positioned high above the ears and is positioned above the patient's neck. Finally, the tightening is adjusted using the knobs on each side.

The TIARA headset must be fixed and move as little as possible to minimize inaccuracies during the acquisition.



Illustration of the position of the headset on the patient.

5 Completing the acquisition

Once the patient is equipped and the M-JEE Cart is in place, some checks should be made to ensure optimal operation of the Tech In Motion device.

The user must check the device is in general good conditions (good connection cables, power supply, power outlets ...) to ensure the protection of their patients, third parties, others operators and assistants.



The user must not use defective products (stripped, worn cables ...). In the event that the hardware condition is incorrect, any use of the device must be stopped.



The user must not disconnect the cables from the system during operation as it may damage the system and make it non-functional.

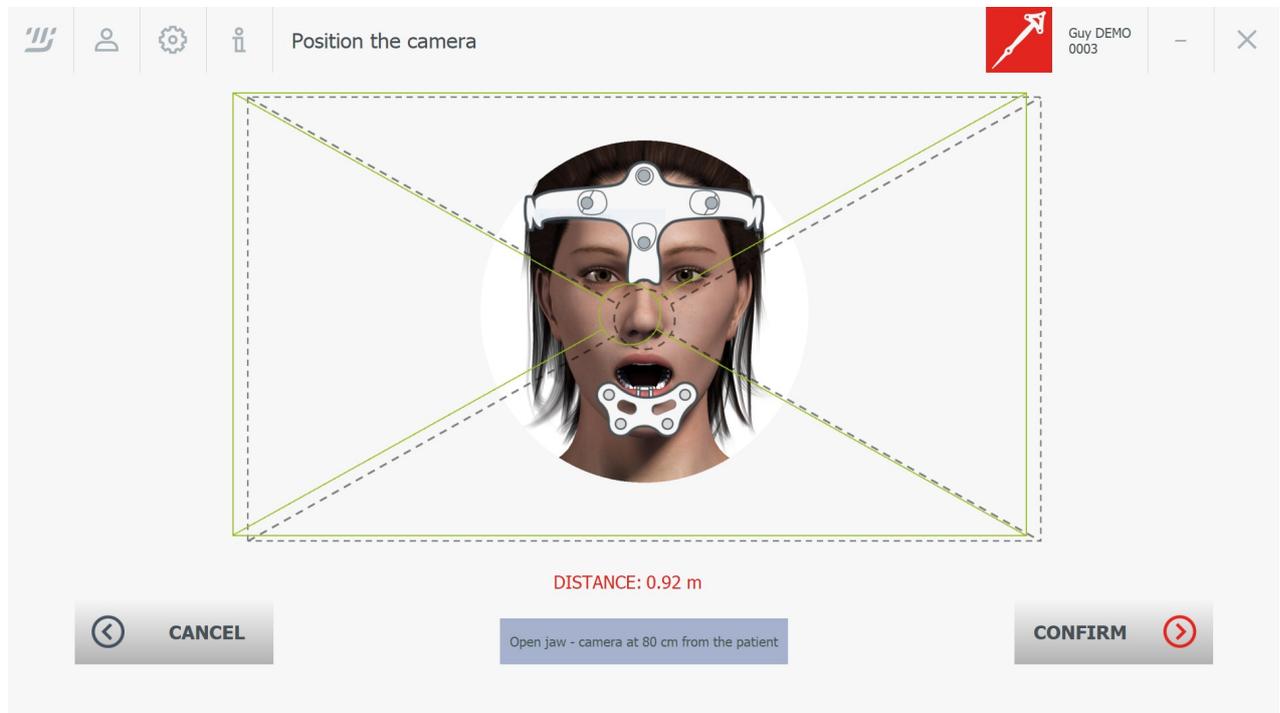
5.1 Step 1: Setting up the camera

The camera should be positioned facing the patient's face at about 80cm.

In the Camera Setup page, the user orients the camera so that the distance to the patient and the rectangle representing the work volume turn green.



The user must ensure that the patient does not remove the markers from the camera's field.



They then check that the TIARA headset and the SMIL'IT mandibular marker are clearly visible by the camera, patient in occlusion and patient mouth wide open.

Throughout the protocol, if a required instrument is not visible by the camera, a pictogram on a red background appears in the upper banner:



- TIARA helmet not visible by the camera



- Mandibular marker SMIL'IT not visible by the camera



- Stylus TALLY not visible by the camera

If an instrument is not visible, the user can:

- Reorient the instrument, facing the camera, the reflective discs facing the camera.
- Adjust the orientation and the position of the camera in front of the patient's face so that the instrument is in the field of view of the camera.
- Clear the line of sight between the instruments and the camera.
- Check the condition of the reflective discs and their correct clipping.

To redo the acquisitions, the user can click on the button  in the top banner, then on the "redo acquisitions" option.

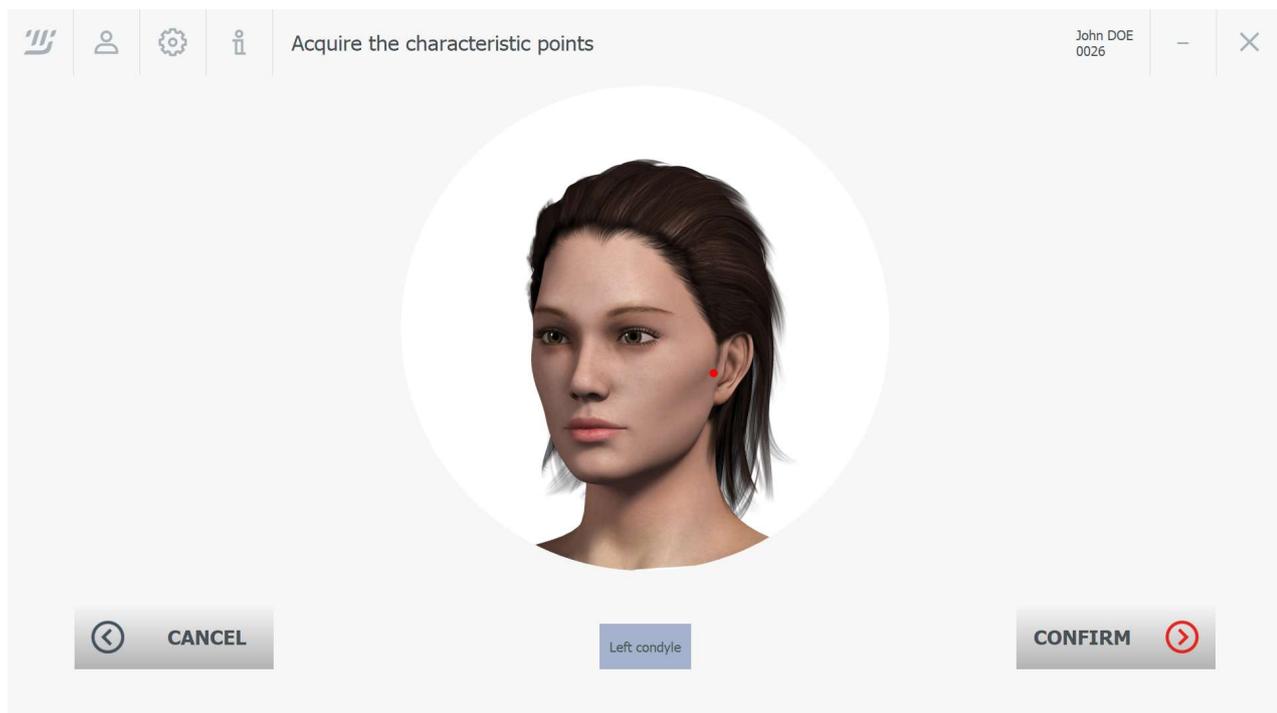
5.2 Step 2: Acquisition of anatomical reference points

Prior to being able to record the kinematics of the patient's dental arches, the user must perform various anatomical acquisitions on the patient.

5.2.1 Anatomical reference points on the patient's face

The following anatomical points are recorded following the instructions given by the software:

- Left condyle
- Sub nasal point
- Right condyle



The user positions the tip of the TALLY stylus on the anatomical point indicated on the patient's face. They check visibility of the instruments and then presses the "Validate" button. The stylus must not move during the acquisition.



The user must be careful not to bend the pen tip with excessive pressure. If bent, the accuracy of the system may be impaired and the patient may be injured.

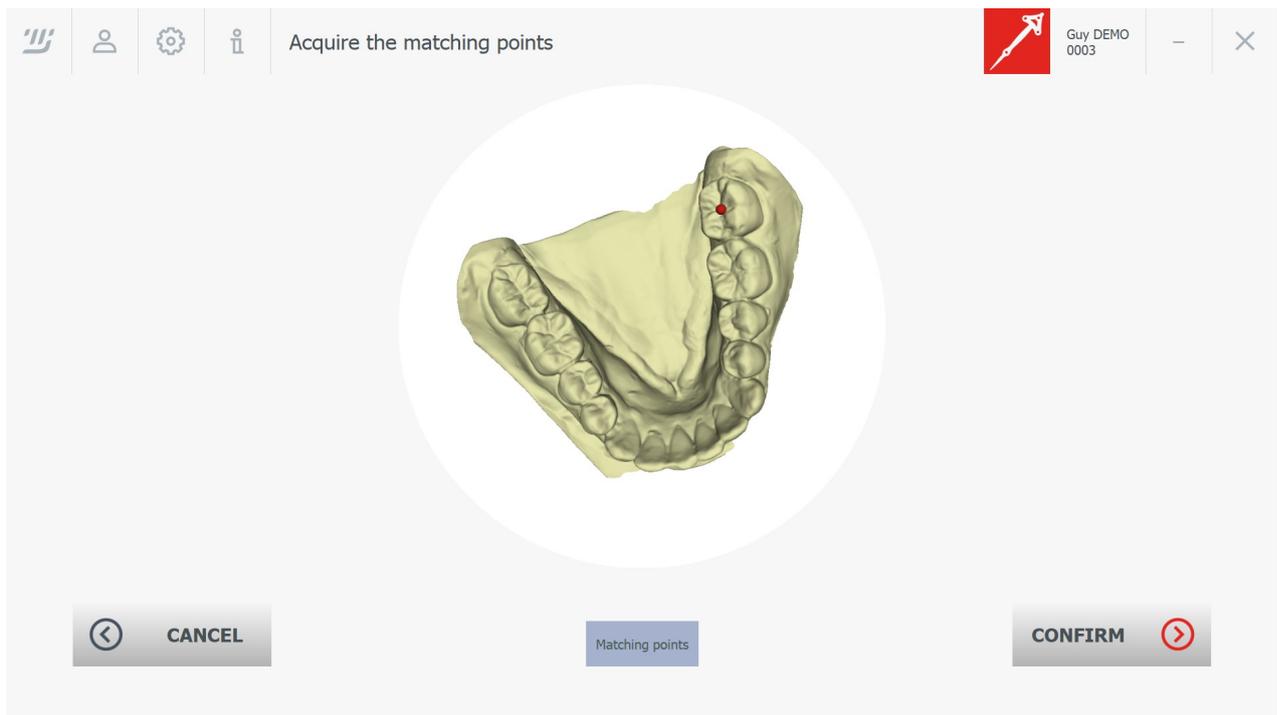


The user should be careful not to injure the patient with the tip of the stylus, especially when placing the stylus near the eyes.

5.2.2 Registration points in the mouth

In order to position the models of the patient in space, the user acquires in the mouth the 4 noticeable points defined above on the mandible 3D model.

For this, they position the tip of the stylus TALLY in the mouth on the remarkable point indicated on the screen. They check the visibility of the instruments and then press the "Validate" button. The stylus must not move during the acquisition and the reflective markers must be seen by the camera.



In order to avoid cross-contamination between the patient's skin and the mouth, it is recommended to clean the tip of the stylus with a disinfectant wipe between acquiring points on the face and in the mouth.

5.2.3 Reproducible occlusion position

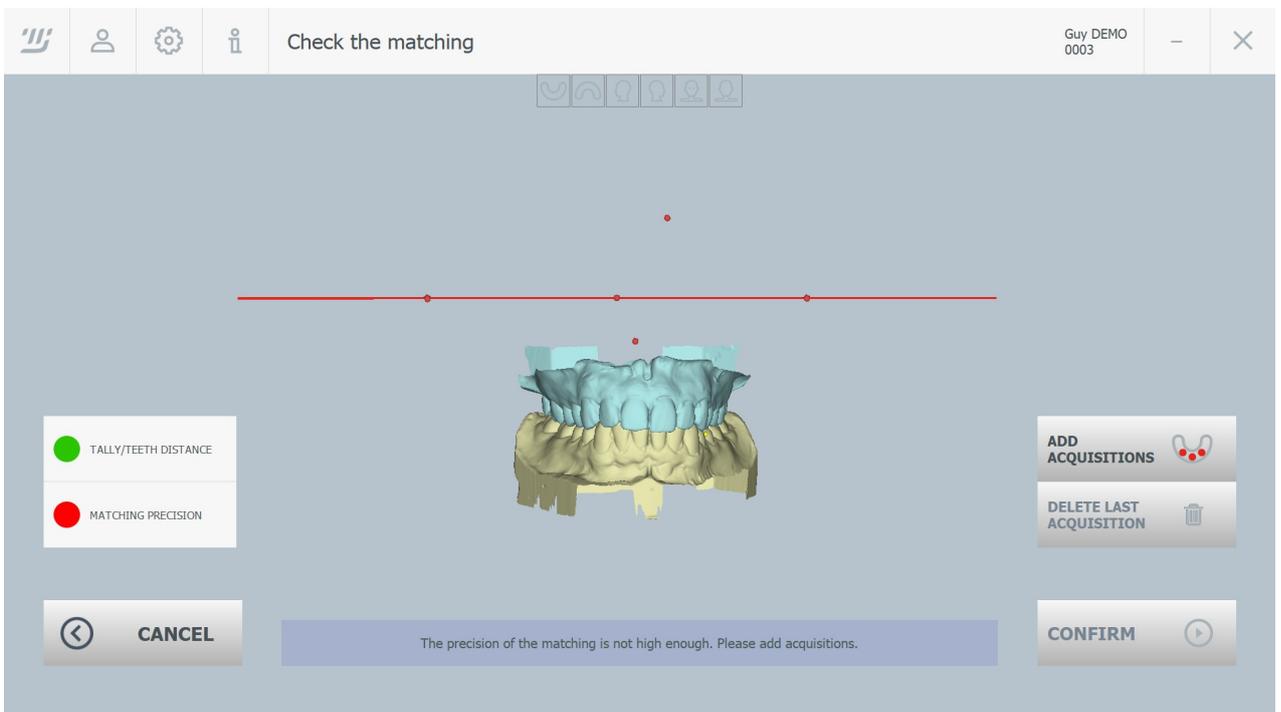
In order to match patient's models, the user records the reproducible occlusion position. For this, they position their patient in the reproducible occlusion position, check the visibility of the instruments and press "Validate".



The user must make sure that the actual occlusion position of the patient exactly matches that of the imported 3D models. Otherwise, the accuracy of the system may be altered

5.2.4 Registration check

In order to guarantee the accuracy of the system, the user checks the registration of the 3D models of the patient.



For this, the user must check the Matching precision indicator:  MATCHING PRECISION
 If the indicator is Green, the registration has good overall accuracy.

If the indicator is Orange, the registration is of average overall accuracy. The accuracy of the system may be impaired. It is recommended to improve the registration.

Then, the user must check the local accuracy of the registration. For this, they position the tip of the Tally pen in contact with the teeth on the mandible and the maxillary, in different areas of interest of the occlusal surface and check the indicator  TALLY/TEETH DISTANCE.

If the indicator is green, the registration is accurate at the controlled position.

If the indicator is orange, the registration is moderately accurate at the controlled position.

If the indicator is red, the registration is inaccurate at the controlled position.

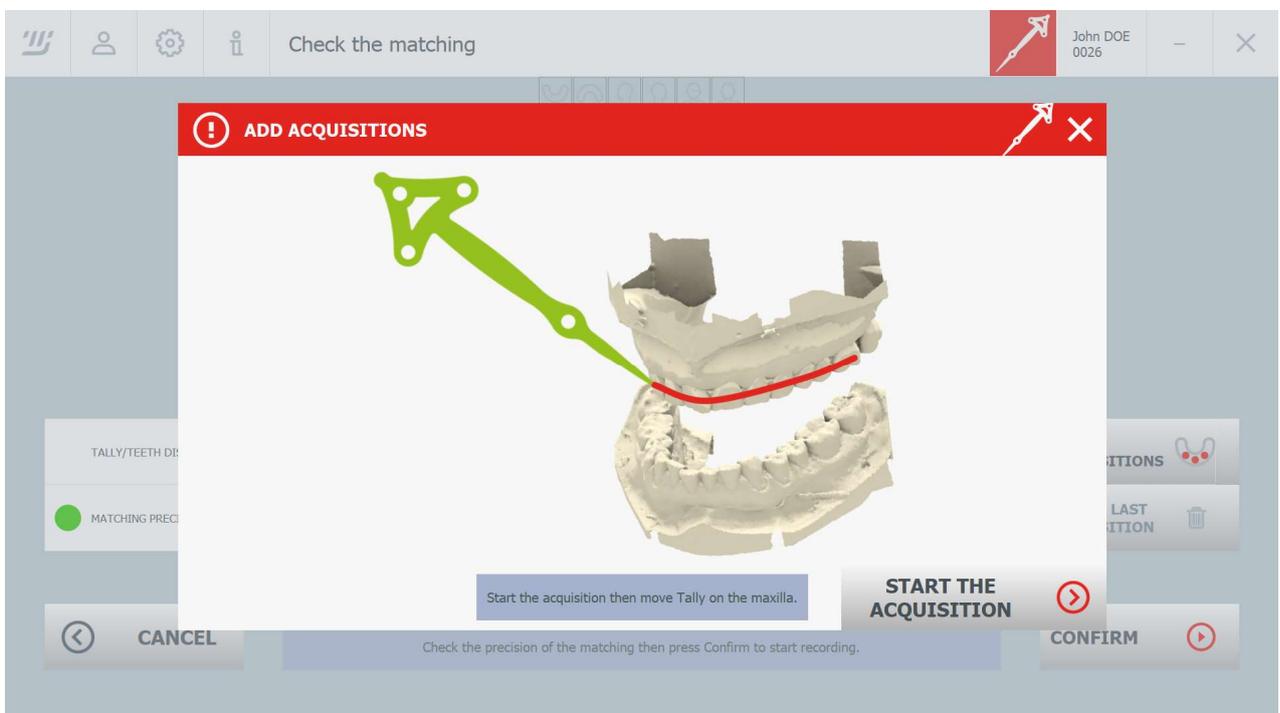
If different areas of interest have a moderately accurate or inaccurate registration, the accuracy of the system may be altered. It is recommended to improve the registration.



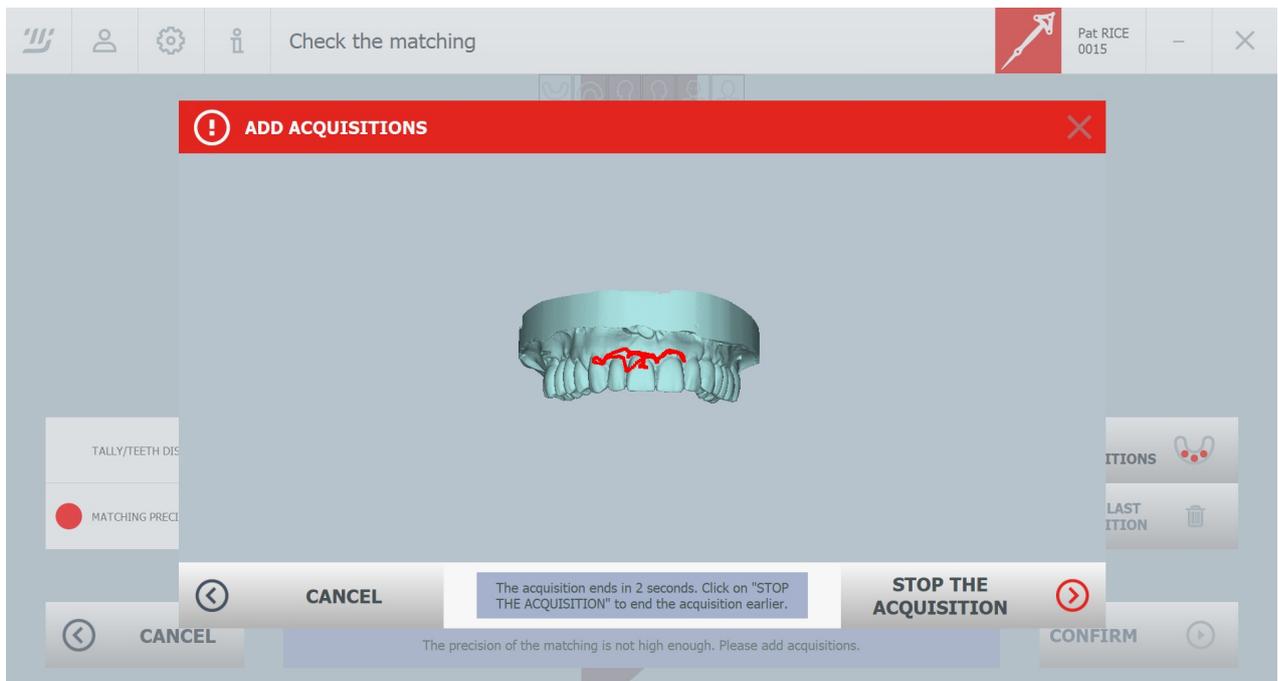
The user must check their registration precision

5.2.5 Improving the registration

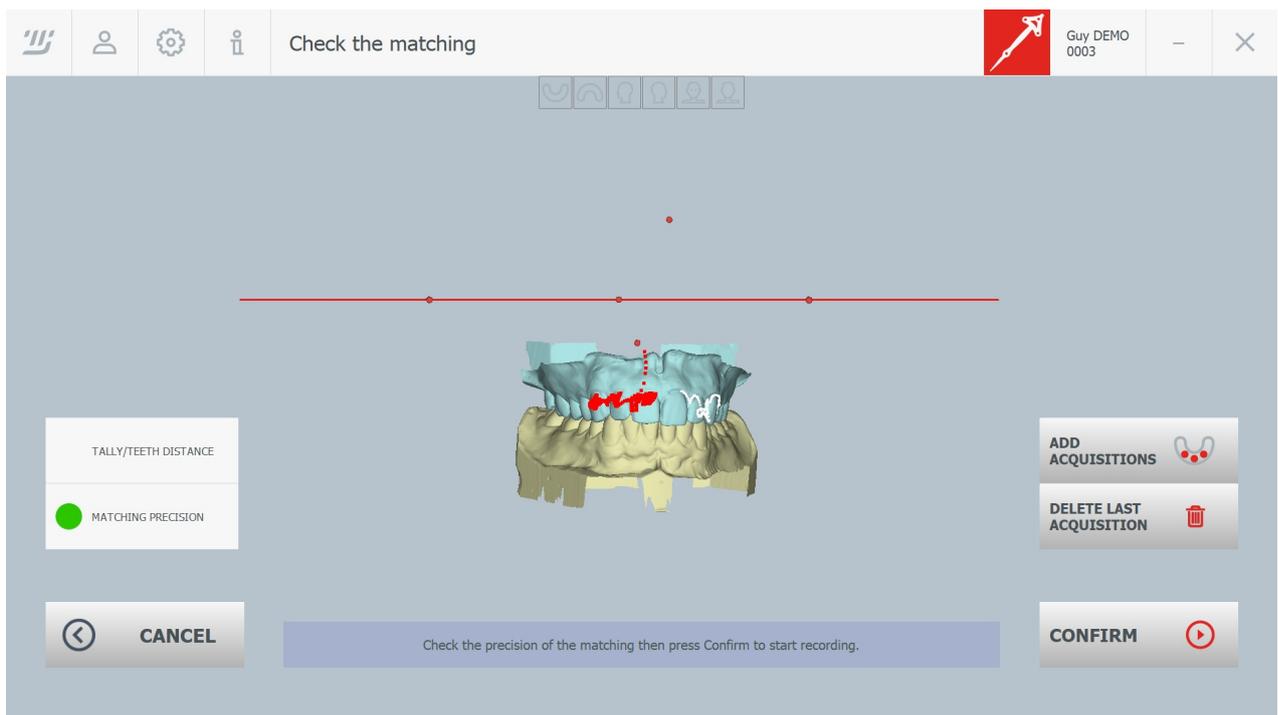
To improve the registration, the user can add or delete acquisitions by clicking respectively on "Add acquisitions" and "Delete last acquisition".



The tip of the pen tracker is placed on the teeth of the maxilla of the patient. The user starts the acquisition and moves the tip on the teeth, while making sure to maintain contact throughout the acquisition. The user then checks the adjusted registration, as previously.

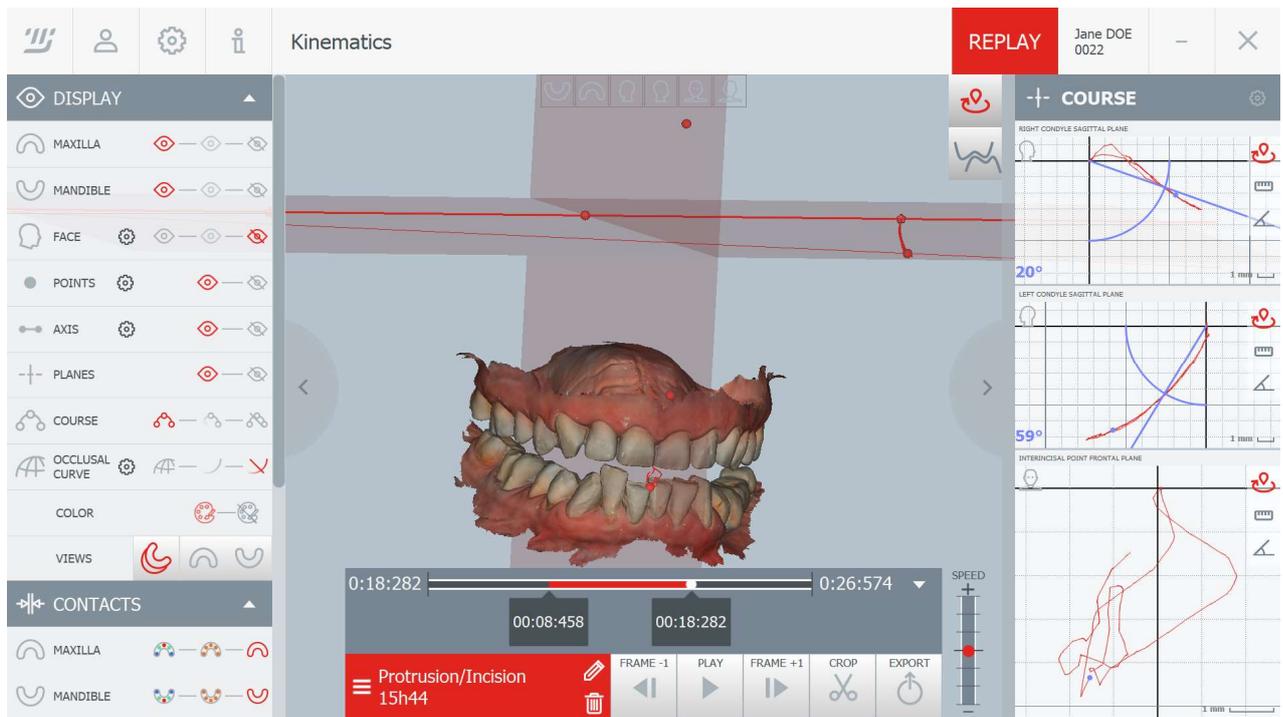


Several sets of acquisitions can be added to improve accuracy, and it is possible to iteratively delete the last acquisition of the list.



5.3 Step 3: Recording cinematics

Once the acquisitions made and the registration validated, the recording of kinematics can be performed.



This *Kinematics* stage, there are 3 different modes, displayed in the main banner:

LIVE

- LIVE mode: The patient's current movements are displayed live. They are not recorded. This is the default mode after acquisitions.

RECORD

- RECORD mode: The patient's current movements are recorded. This mode is triggered from LIVE mode by clicking the kinematics recording button and quit by stopping the recording.

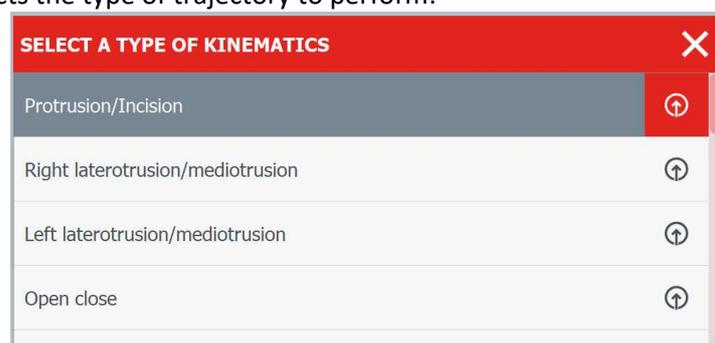
REPLAY

- REPLAY mode: The previously saved movements of the patient are replayed. This mode is accessible directly after recording a kinematic or when the user analyses a previous consultation, without the presence of the patient.

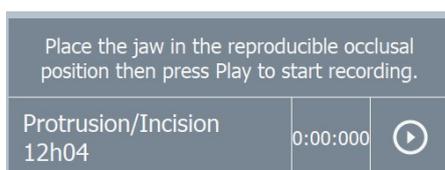
5.3.1 Record a first kinematic

The *Kinematics* stage starts by a step to preview the dental arches motion in LIVE mode. From this step, the user can launch the first recording by clicking on the Play button in the bottom central panel. To record the first kinematics:

- The user selects the type of trajectory to perform:



- In LIVE mode, the patient must be placed in a reproducible occlusion position before recording
- Then the user can start recording from the bottom centre panel (see below)



- The patient performs the movement
- The user stops recording once the movement is made from the lower centre panel



The user must visually check the consistency between the virtual movements and the actual movements displayed. If the movements are inconsistent, abandon the use of the system, or redo the acquisitions.

5.3.2 Record of an additional kinematics

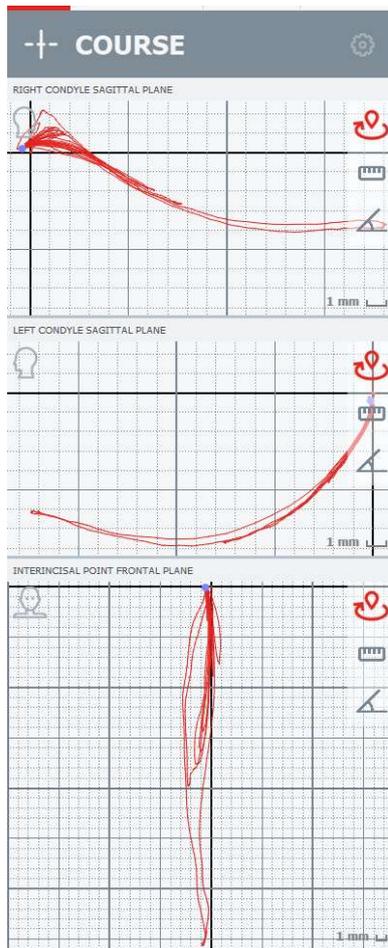
- In REPLAY mode, the user clicks on the lower centre panel button , then selects "Record another kinematics"
- Then they repeat the previous steps.

5.3.3 Replay a kinematic

- In REPLAY mode, the user clicks on the lower centre panel button , then selects the name of the kinematics they want to re-read
- They interact with the lower centre panel to:
 - o Change the name of the kinematics
 - o Remove kinematics
 - o Play the kinematics (continuous play / pause / step by step)
 - o Crop the trajectory
 - o Adjust the playing speed of the trajectory

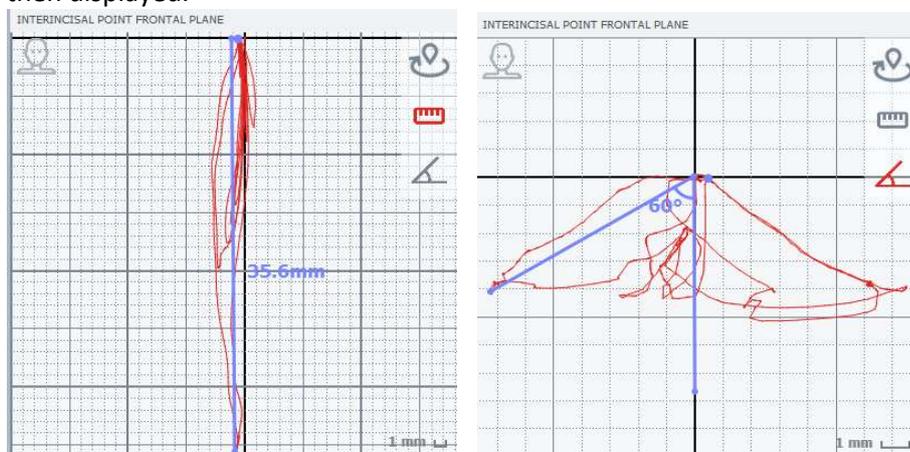
5.3.4 Visualise course graphs

In the right-side panel, the trajectory of the anatomical points is represented on a graph to perform measurements. The displayed trajectory corresponds to the projection of the anatomically selected anatomical point on the selected anatomical plane.



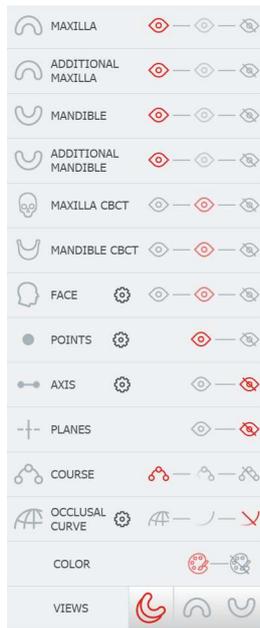
The user can modify the default selection by clicking on the button .

Distances and angles can be measured on the graphs, by clicking respectively on the  and  buttons of the graph. The button  is used to return in default mode: zoom and pan the graph. To measure a distance between two points of the graph, the user successively clicks on the two feature points. The distance between the points is then displayed. To measure an angle, the user successively clicks on the three points defining the angle. The angle between these points is then displayed.



5.3.5 Display configuration

From the left side panel, the user can adapt the displayed elements in the 3D view.



- Maxilla: maxilla model display (opaque / transparent / hidden)
- Additional maxilla: additional maxilla model display (opaque / transparent / hidden)
- Mandible: display of mandible model (opaque / transparent / hidden)
- Additional mandible: additional mandible model display (opaque / transparent / hidden)
- Maxilla CBCT: display of the CBCT model (opaque / transparent / hidden)
- Mandible CBCT: display of the CBCT model (opaque / transparent / hidden)
- Face: display of the face scan (opaque / transparent / hidden)
- Points: displaying anatomical points (displayed / hidden)
- Axis: display of the condylar axis (displayed / hidden)
- Planes: display of anatomical planes (displayed / hidden)
- Course: displaying the 3D trajectory of the anatomical points (whole / disappearing / hidden)
- Occlusal curve: Sphere / spherical cap / hidden
- Colors: Display the models with realistic / generic colours
- Views: 3D models view (normal view / exploded view)

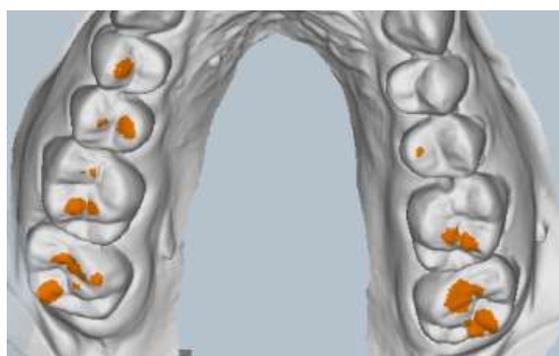
5.3.6 View and configure arches contacts

The software displays the contacts between the 3D models of the arches.

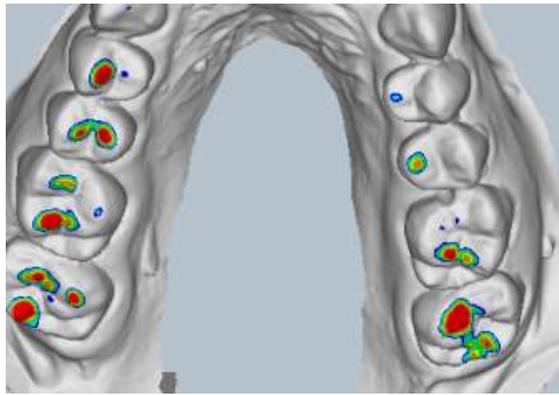
2 types of contacts are available:



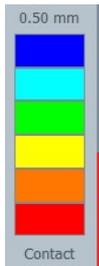
: Presence of contacts: the areas of contact between the teeth are identified by orange traces. A contact is identified if both models of the arches are less than 300 μm apart. This type of representation is available in all modes, and allows to visualize the teeth in contact, without quantifying the contact.



: Proximity maps of the arches: the zones of strong proximity or contacts between the teeth of the 2 arches are mapped by colour according to the distance between the models. This type of representation is only available in REPLAY mode, and allows a quantitative analysis of contacts and proximity between teeth



Colour mapping of the contacts:



- Blue: the models are distant from 500 μm (+/-50 μm)
- Cyan: the models are distant from 400 μm (+/-50 μm)
- Green: the models are distant from 300 μm (+/-50 μm)
- Yellow: the models are distant from 200 μm (+/-50 μm)
- Orange: the models are distant from 100 μm (+/-50 μm)
- Red: Models are in contact (+/-50 μm)



The accuracy of distance and contact is directly related to the accuracy of the imported models, the quality of the acquisitions, and the proper fixation of the instruments on the patient. The distance measurements provided are not absolute.



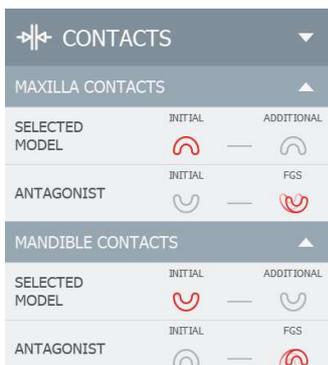
Acquisitions are sampled and there is a risk of missing the most significant contacts.

The left side panel can change the type of display of the contacts between the dental arches:



Maxillary: display of contacts (proximity map / presence of contacts / no contacts)
Mandible: display of contacts (proximity map / presence of contacts / no contacts)

The user can select which models are used to calculate the contacts, from the left side panel, "Maxillary Contacts" and "Mandible Contacts" sections:



Calculation of maxillary contacts from a maxillary model and an antagonistic mandible

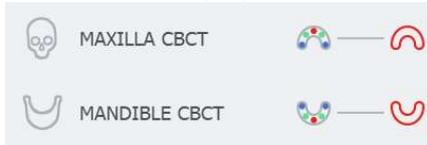
Selected model: initial or additional maxillary model
Antagonist: selected antagonist mandibular model or FGS

Calculation of the mandibular contacts from a mandible and maxillary model antagonist

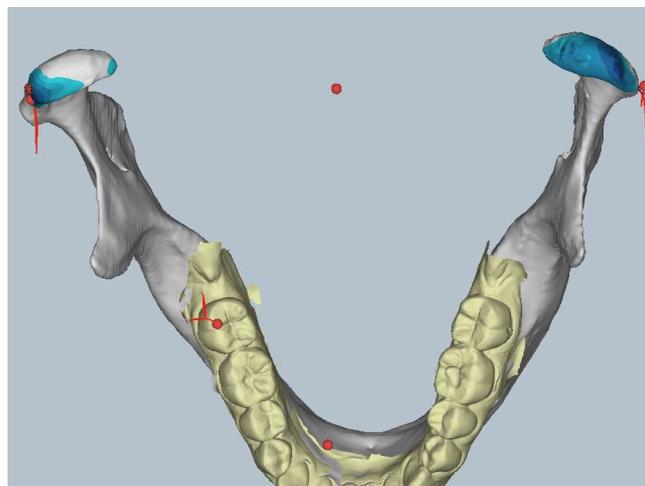
Selected model: initial or additional mandible model
Antagonist: selected antagonist maxillary model or FGS

5.3.7 View and configure CBCT contacts

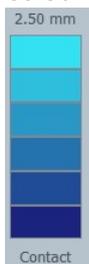
The software displays the contacts between the 3D CBCT models in the temporomandibular joint region.



: Proximity maps of the arches: the zones of strong proximity or contacts between the 2 CBCT models are mapped by colour according to the distance between the models. This type of representation is only available in REPLAY mode, and allows a quantitative analysis of contacts and proximity between in the temporomandibular joint region



Colour mapping of the contacts:



- Cyan: the models are distant from 2.5 mm (+/-0.25 mm)
- Very light blue: the models are distant from 2.0 mm (+/-0.25 mm)
- Light blue: the models are distant from 1.5 mm (+/-0.25 mm)
- Blue: the models are distant from 1.0 mm (+/-0.25 mm)
- Dark blue: the models are distant from 0.5 mm (+/-0.25 mm)
- Very dark blue: Models are in contact (+/-0.25 mm)



The accuracy of distance and contact is directly related to the accuracy of the imported models, the quality of the acquisitions, and the proper fixation of the instruments on the patient. The distance values provided are not absolute.

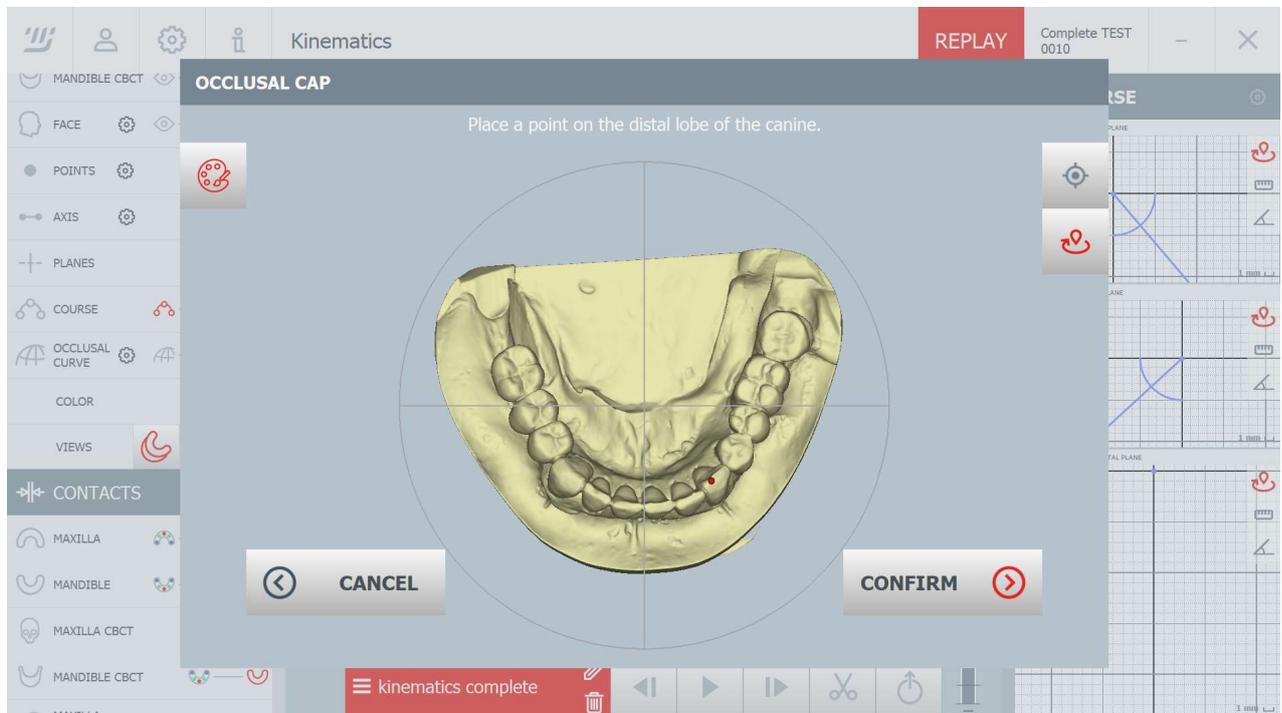


Acquisitions are sampled and there is a risk of missing the most significant contacts.

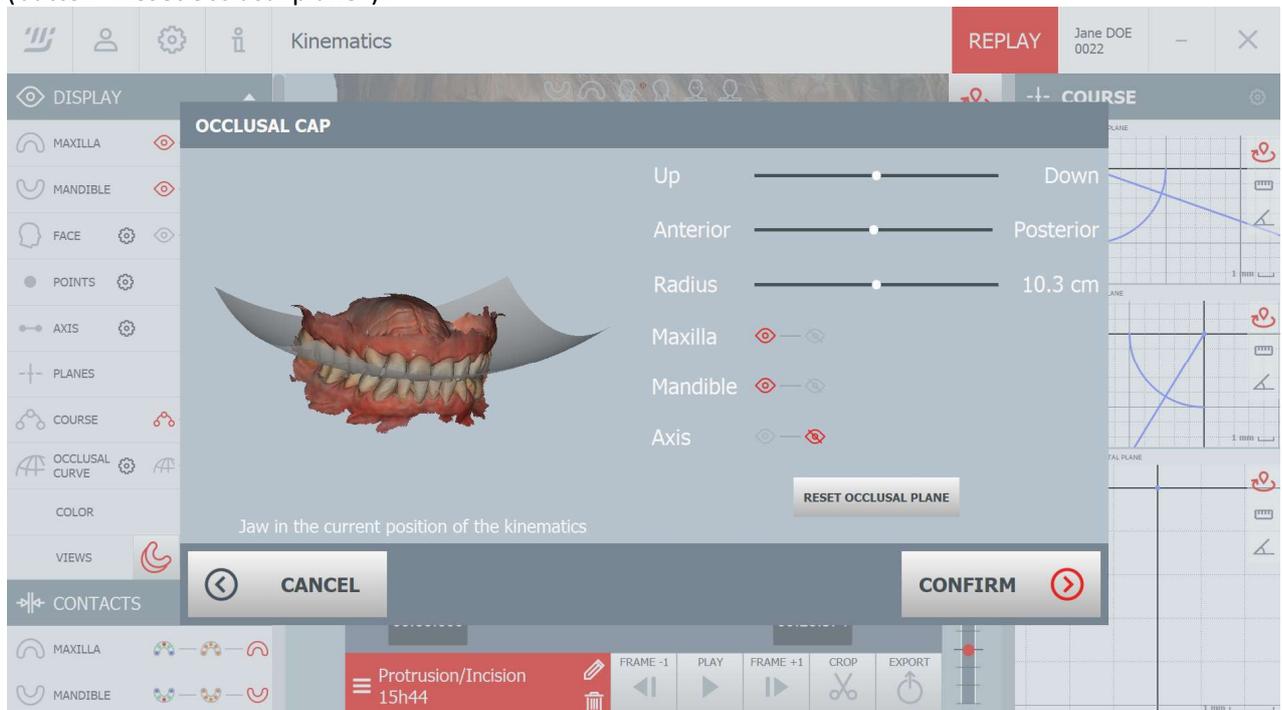
5.3.8 Calculation of the Occlusal Reference Sphere

At the replay stage, the occlusal reference sphere can be calculated. For this, the user must press the button

 in the Displays panel. The distal lobe point is placed by the user on the model of the mandible, then the sphere is automatically calculated and positioned.



The user can then manually adjust the centre of the sphere and its radius or relaunch the computation (button “Reset occlusal plane”).



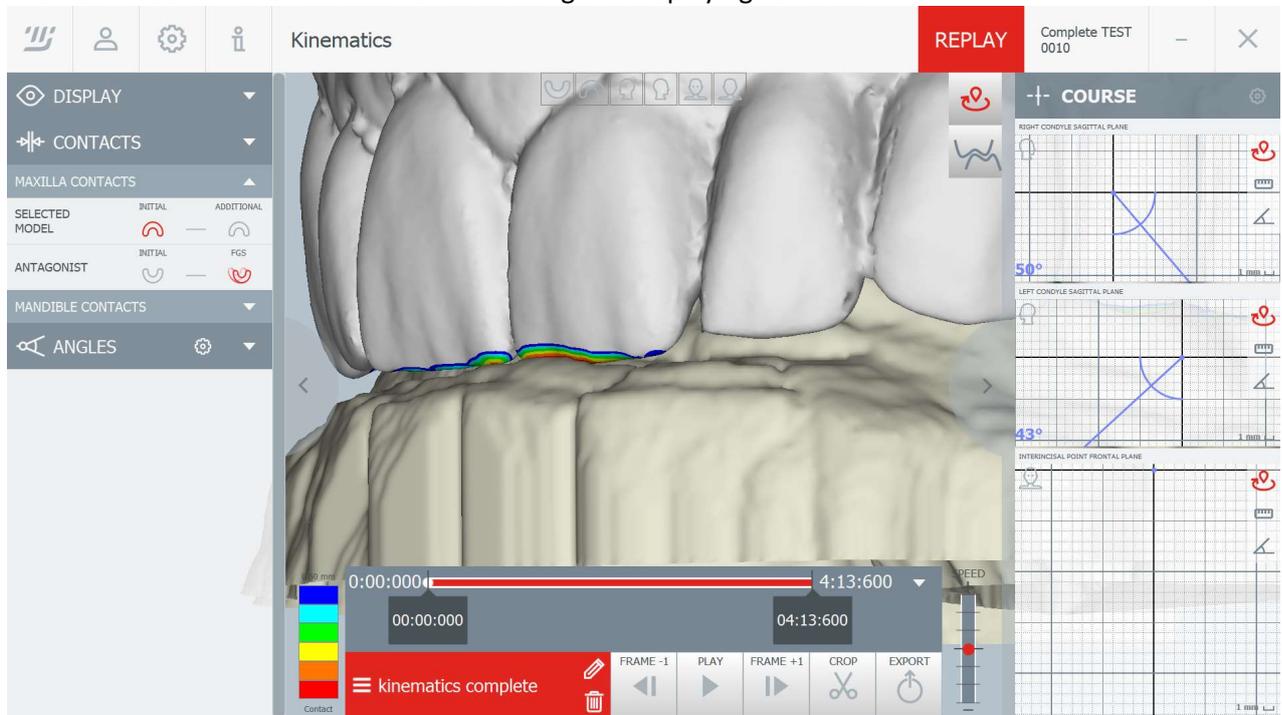
5.3.9 FGS (functionally generated surface) calculation

Whilst at the replay stage, models of the Maxillary or Mandibular FGS can be calculated. For this, the user



must press one of the following buttons:

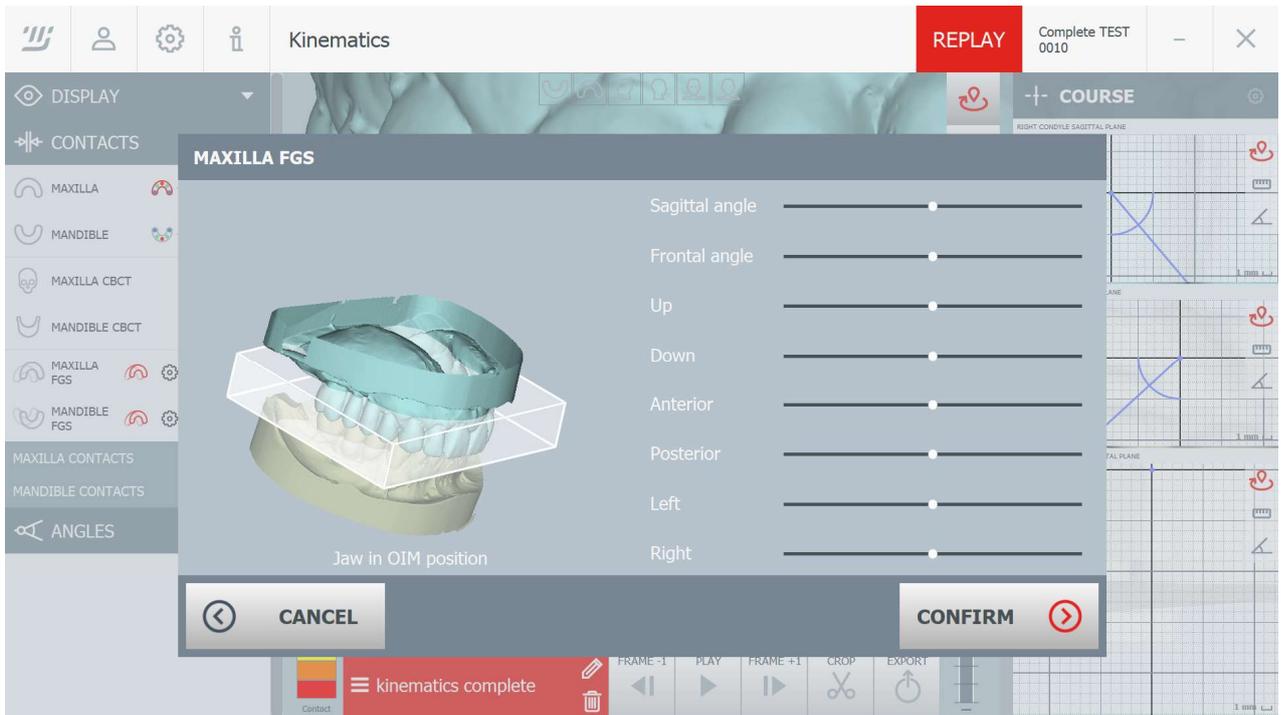
The FGS model can then be used for calculating and displaying contacts.



Note: The FGS model is calculated only on the selected subsequence of the current trajectory. If the subsequence or kinematics is changed, the user must manually restart the calculation of the FGS by pressing the button above. The calculation time depends on the duration of the subsequence.

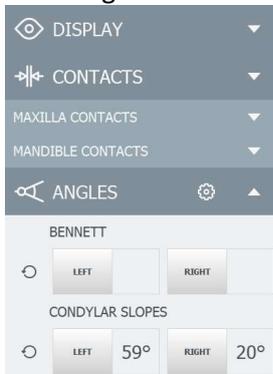
The user can then manually adjust the position, orientation and size of the volume in which the FGS is computed, by clicking on the now red dental arch button that has been activated by computing the FGS.





5.3.10 Calculation of Bennett's Angle and Condylar Slope

The software automatically calculates the Bennett angle, as well as the condylar slope, of the current trajectory. In order to do this, the user selects a registered open-close kinematics, then clicks on one of the following buttons to launch the corresponding calculation:



The Left buttons launch the calculation on the trajectory of the left condyle, the Right buttons start the calculation on the trajectory of the right condyle.

Note: The calculation is performed on the subsequence of the selected trajectory. The user must manually restart the calculations in the event of a change of trajectory or modification of the subsequence. The user is responsible for launching calculations on trajectories relevant for this type of calculation.

The little gear next to the ANGLER title is used to select the radius of the condylar slope, either 3 or 5 mm.

5.3.11 Data Export

From the Kinematic screen, the user can export their analysis data by clicking the button:



Then select which type of export to perform:



5.3.11.1 Share with another ModJaw user

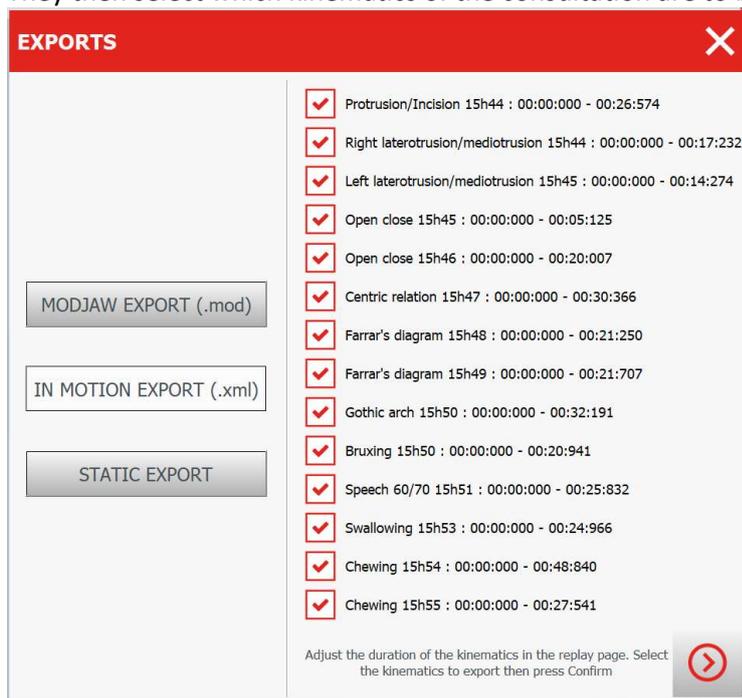
If the user wants to export a consultation in order to share it with another user, they click on “MODJAW EXPORT (.mod)”.

They then select the kinematics to include and export the .mod file that can later be imported in the software.

5.3.11.2 Export of the kinematics of a consultation

If the user wants to export the kinematics of a consultation, they click on “IN MOTION EXPORT (.xml)”.

They then select which kinematics of the consultation are to be exported:



Only the sub-parts of the kinematics selected in the main screen are exported.

The exported data is anonymised and saved in STL format for the mandible and maxilla models and in XML format for the kinematics data.

A file in PDF format sums up the Bennett angles and condylar slopes computed in the consultation.

5.3.11.3 Export of a specific position

If the user wants to export a specific position, they click on “STATIC EXPORT”.

They then choose whether they export the data in the reproducible occlusal position or in the current position of the sequence, as displayed on the screen:



The exported data is anonymised and saved in STL format, in order to be exploitable with third party software. All exported models are expressed in a common reference frame.
A file in PDF format sums up the Bennett angles and condylar slopes computed in the consultation.

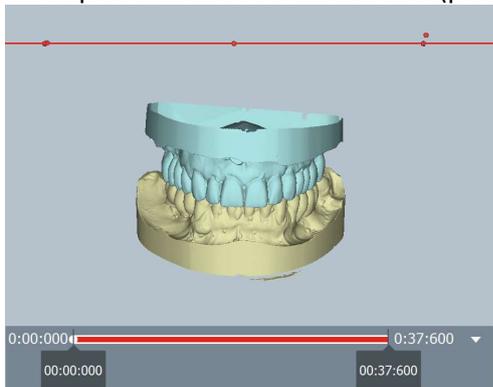
5.3.12 Define a new inter-maxilla relation

From the Kinematics screen, the user can define a new inter-maxilla relation (IMR). They can define as new intermaxillary relation either a position recorded with the system or a simulated position.

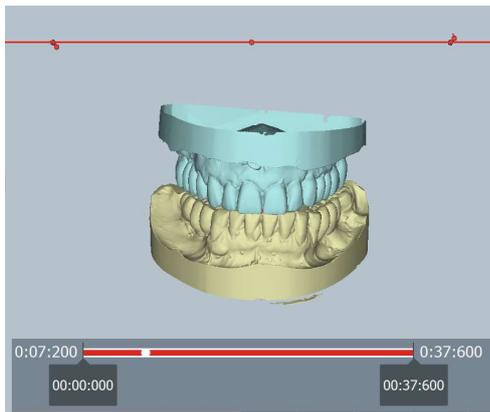
5.3.12.1 Select a recorded position

To select a recorded position as new intermaxillary relation, the user selects the position they wish to use as new inter-maxilla relation in the recorded sequence.

Initial position of occlusal reference (position at time 0:00:00):



Desired new inter-maxilla relation (position at time 0:07:20):



Once on the desired position, the user clicks on the button:

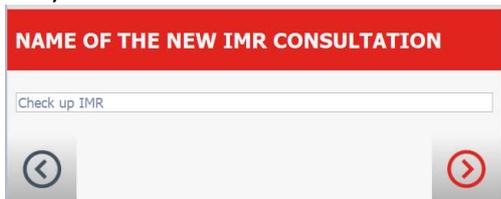


in the options.

They then select "CURRENT POSITION":

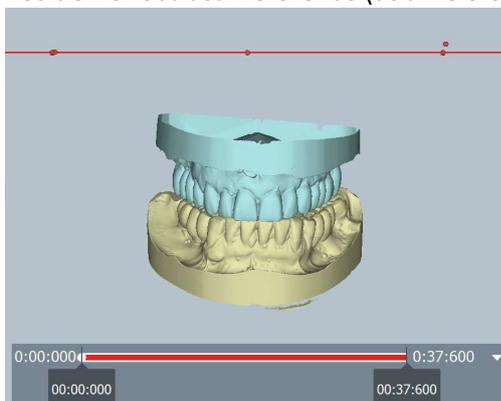


They then select a name for the new consultation about to be created:



Once confirmed, a new consultation is created for the patient. In this consultation, the kinematics have been transferred to the new inter-maxilla relation.

Position of occlusal reference (at time 0:00:000) in the new consultation:



5.3.12.2 Simulate a position

To simulate a position to use as new intermaxillary relation, the user can rotate the mandible about the hinge axis starting from a recorded position.

Once on the desired starting position, the user clicks on:



In the options.

They then select "SIMULATED POSITION":



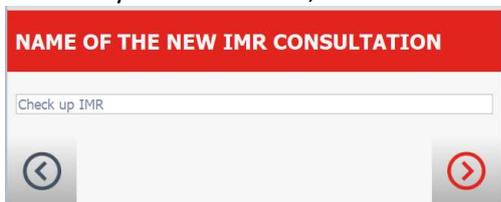
They can then apply a rotation to the mandible to get the desired new intermaxillary relation by using the following slider:



The user can:

- Go back to the replayed kinematics by clicking on "CANCEL"
- Export the current simulated position by clicking on "EXPORT"
- Go back to the starting position by clicking on "RESET"
- Validate the selected position by clicking on "CONFIRM".

Once they have validated, the user selects a name for the new consultation about to be created:



Once confirmed, a new consultation is created for the patient. In this consultation, the kinematics have been transferred to the new inter-maxilla relation.



The user must make sure to select a new intermaxillary relation that is appropriate for treatment.

5.3.13 Add a face scan

From the Kinematics screen, the user can add a face scan to the current consultation by clicking on



in the options.

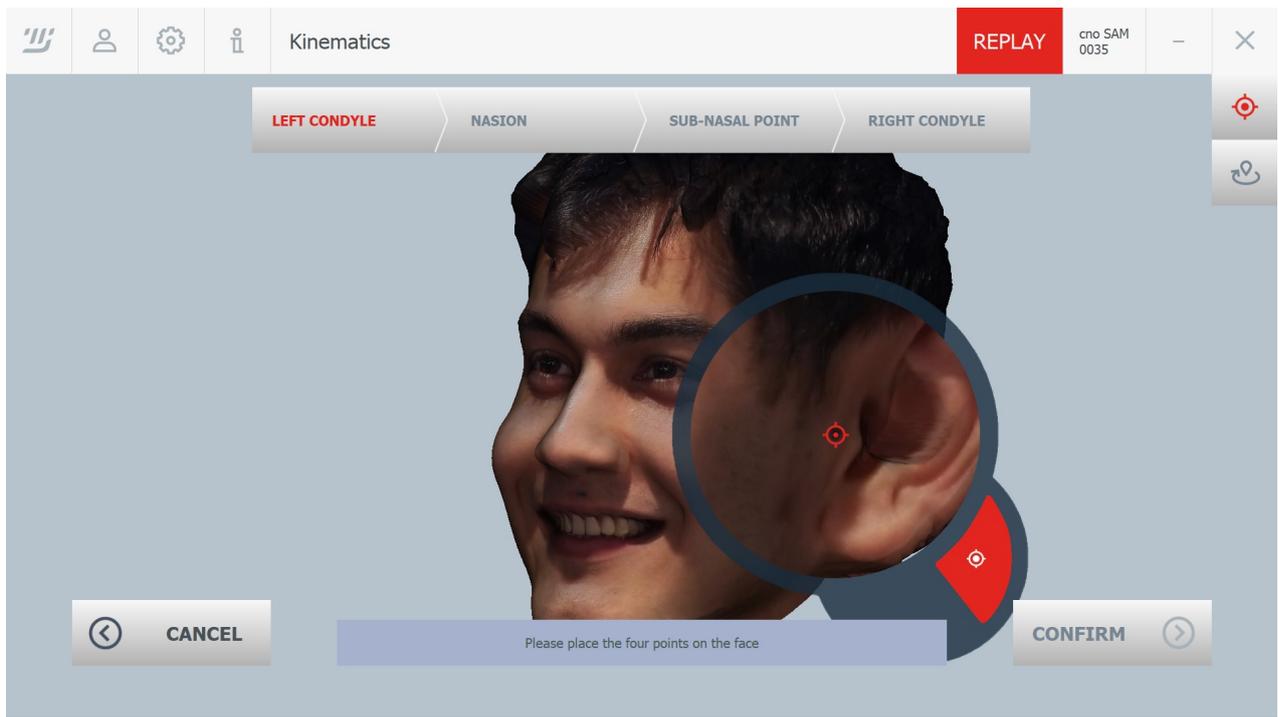
A file browser appears, allowing the user to select a face model.

A pop-up to preview the model appears.

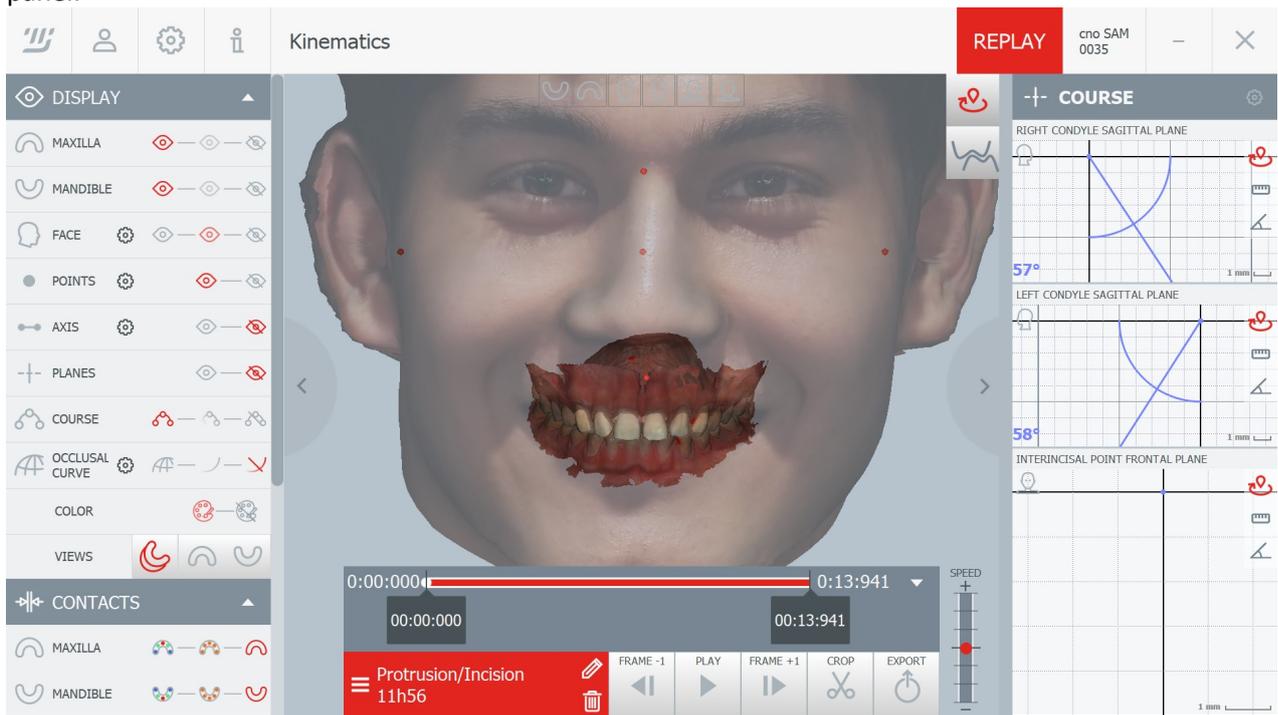


To import the model, click on the red arrow at the bottom right of the pop-up.

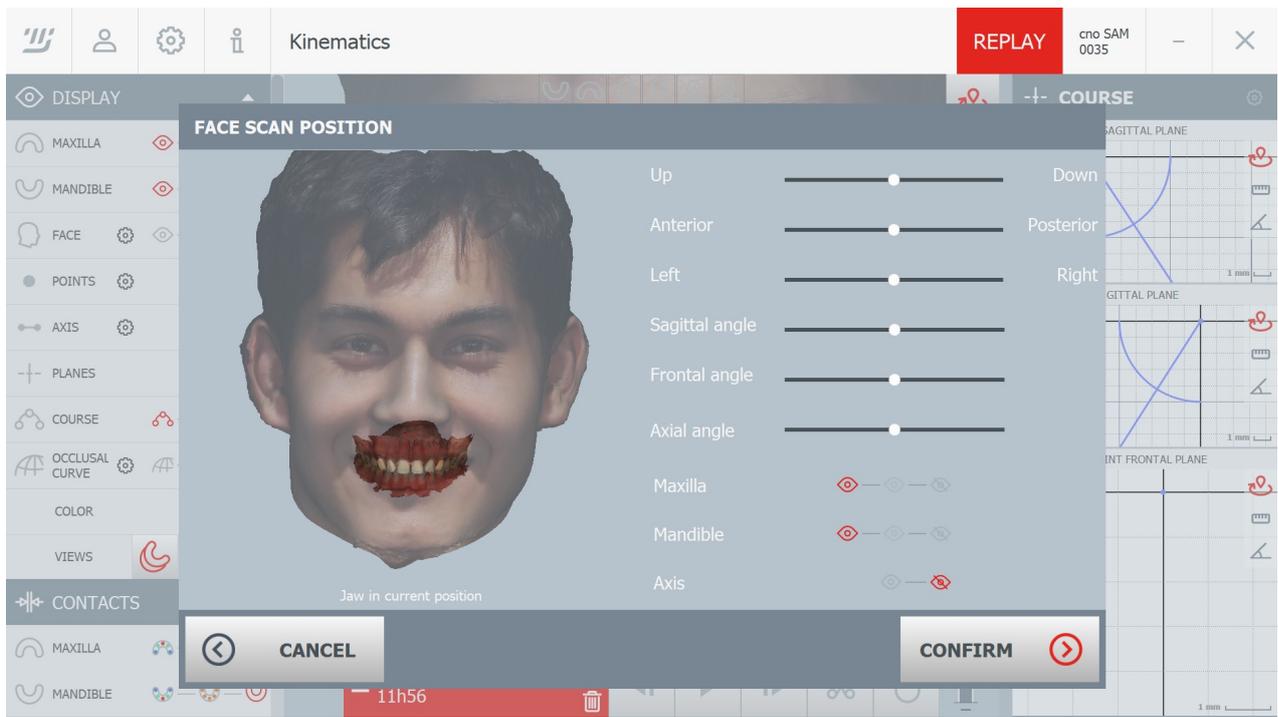
The user must then locate four anatomical points (left and right condyles, sub-nasal point and nasion) on the face and validate to match the face model on the dental arches.



The matched face model is then displayed in the 3D view and the option “FACE” appears in the display panel.



The user can manually adjust the position and orientation of the face model by clicking on the gear in the “FACE” option of the display panel.



5.3.14 Automatically compute the hinge axis

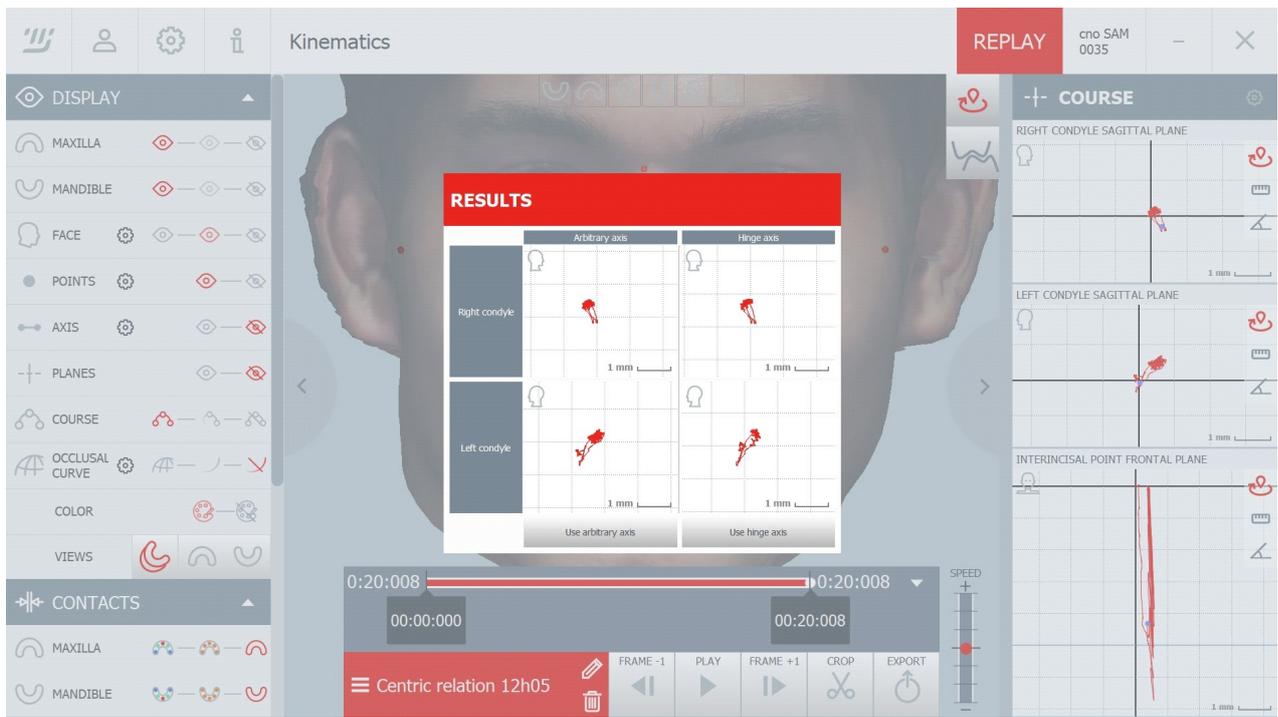
It is possible to automatically compute the rotation axis of the jaw and position the left and right condyles (as well as the bicondylar axis) on this axis.

To do so, the user must first select part of the appropriate kinematics i.e. with a pure rotation motion (for example a centric relation).

Then, click on the gear of the "AXIS" option in the display panel.



The axis of rotation is then automatically computed, and the trajectories of the new condyles as well as the ones of the initial condyles can be compared in a preview window.



The user can then either keep the condyle positions recorded with TALLY by clicking “Use arbitrary axis” or use the condyles on the computed hinge axis by clicking “Use hinge axis”.



The user must select a kinematics suitable for the automatic computation of the hinge axis.

5.3.15 Display a cut view of the models

5.3.15.1 Display the cut view

A cut view of the currently displayed models can be viewed by clicking on the button .

A cut plane then appears in the 3D view and the intersecting contours between the visible models and the cut plane are displayed in the bottom graph. The user can move the cut plane by clicking on the point of interest of the models in the 3D view. The cut plane is automatically rotated, but its orientation can be

adjusted by clicking on the button  in the cut view, which gives access to the buttons to adjust the plane

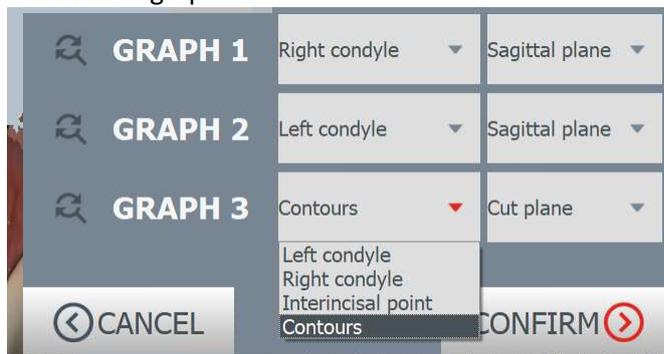


orientation.



To go back to manipulate the 3D view (zoom, pan, rotate), click on the button .

To show or hide the cut view, click the gear button of the graph panels and select the desired options for the bottom graph.

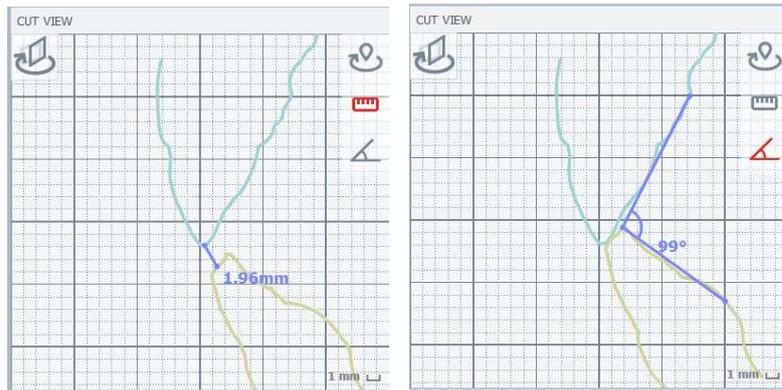


5.3.15.2 Measures on cut view

Distances and angles can be measured on cut view, by clicking respectively on the  and  buttons of the graph. The button  is used to return in default mode: zoom and pan the graph.

To measure a distance between two contour points, the user successively clicks on the two contour points. The distance between the points is then displayed.

To measure an angle, the user successively clicks on the three points defining the angle. The angle between these points is then displayed.

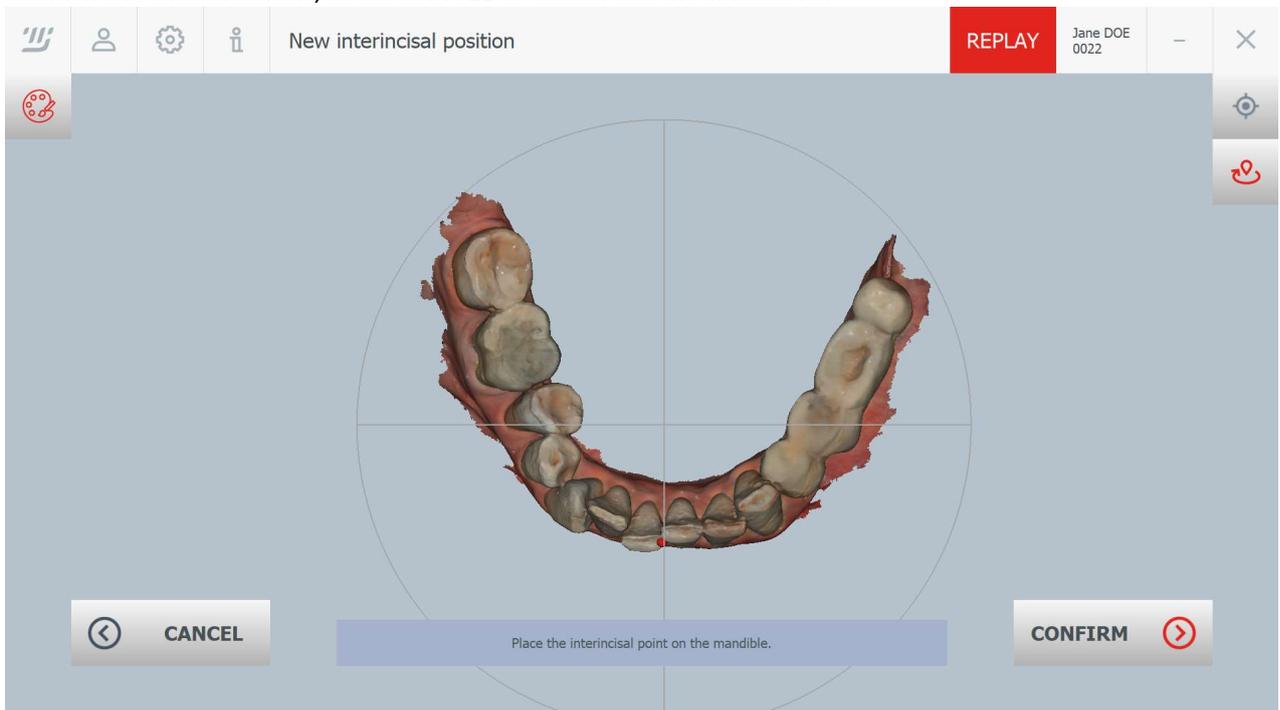


5.3.16 Modify the position of the inter-incisal point

The position of the inter-incisal point can be modified once kinematics have been recorded. To do so, click on the gear in the “POINTS” option in the display panel:



The page to locate the inter-incisal point appears, and it is possible to move the point. Click on CONFIRM to confirm the modifications, or on CANCEL to cancel the modifications.



5.3.17 Screenshot the current configuration

The user can do a screen grab of the 3D view and the graphs by clicking on the button



in the options.

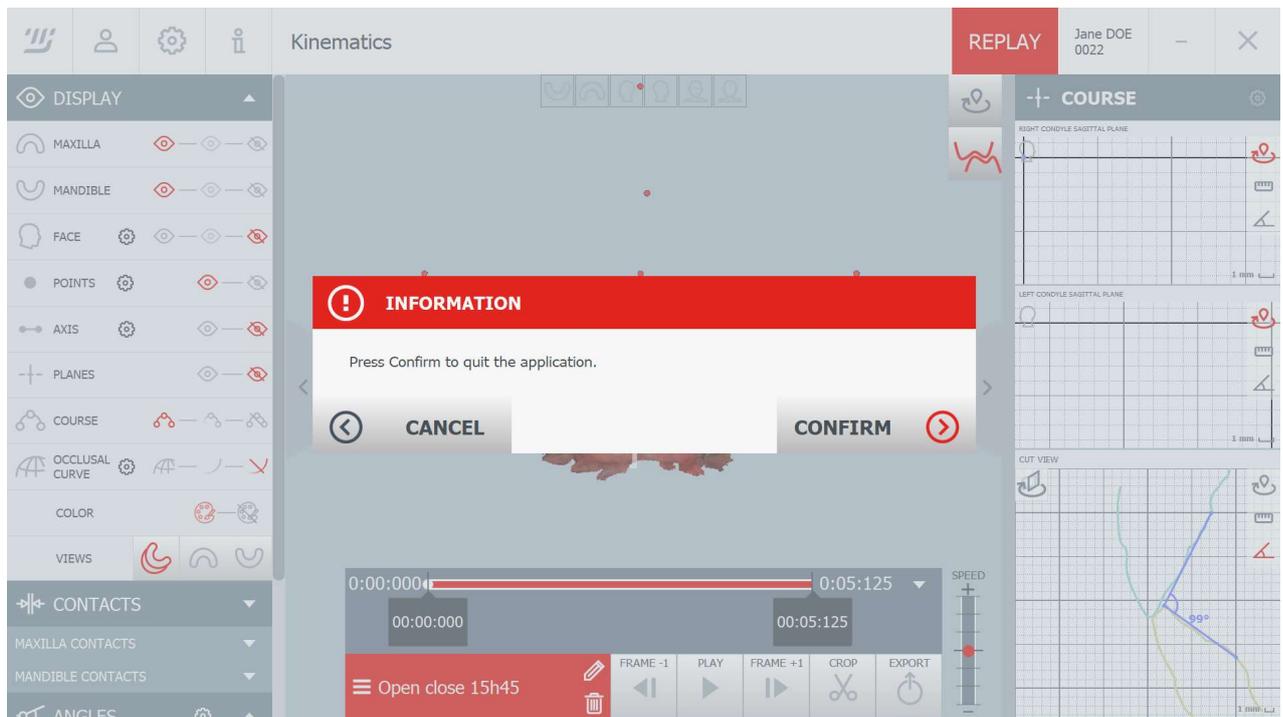
A file browser then appears, opened on the folder in which the screen grab has been saved as an image.

5.4 End of Acquisition

The software can be closed using :



Data are automatically saved.



The TIARA headset is removed from the patient's head, the SMIL'IT marker is removed from the support still in the mouth. SMIL'IT marker support can then be removed from the patient's mouth. Be careful not to injure the patient by removing the support.

All instruments must be cleaned according to the protocol indicated in this user manual (see section 6.3) between 2 uses.

The PC and camera are turned off and the carriage is put in the storage position until the next use (see section 7 of this manual).

6 Hygiene and Cleanliness

6.1 Cleaning of the M'JEE cart

Once the cart has been cleaned, the articulated arm must be placed along the stem. The cart should be cleaned with Anios Dentaspet SH wipes.



Do not spray cleaner on the cart to clean it, liquid could come into contact with the protected components, damage them or create an electrical hazard.

6.2 Cleaning the camera

The camera can be disinfected with hospital disinfectant detergent type Anios Dentaspet SH wipes. Optical parts should be cleaned only with lens cleaning solutions. Eyeglass wipes should not be used as they may scratch the lens. Other surfaces should be dried with a clean, dry cloth.



The appliance must be switched off and unplugged before cleaning. Disinfectant detergent must not be spilled directly onto the device or any of its components.



Spraying cleaning agent directly on the equipment is prohibited. It must be ensured that no fluid enters the camera. This can damage electrical components by causing short circuits and corroding the material.



Only non-corrosive and non-acidic detergents, whose interactions with materials are known, can be used.

Consequences of multiple clean up

The optics of the camera may be scratched or the transparency of the window may be changed, resulting in poor image quality and therefore poor tracking accuracy.

6.3 Cleaning the instruments



All reusable instruments (headset, mandibular marker) must be disinfected and cleaned before re-use in accordance with the described process.

Instrument cleaning procedure:

Remove the reflective sensors from the instruments and clean the instruments by soaking with any Anyos Dentaspet enzymatic detergent following the protocol recommended by the manufacturer.

As an indication, the washing steps are as follows (refer to the manufacturer's instructions before starting cleaning):

1. Dilute the detergent to 1% (for example, 20mL for 2L of water)
2. Immerse the instruments completely in the solution, cover and soak for a recommended contact time of 15 minutes to achieve microbiological efficacy.
3. Remove the instruments from the solution and check for visible debris. If necessary, brush them.
4. Rinse under running water or by immersion.
5. Dry the instruments

Particular case of the stylus: After each use of the stylus, since the latter comes into contact with the patient's oral mucosa, it must be cleaned according to the procedure indicated above and then sterilized before being used on a new patient.



The stylus is not delivered sterile. The user must sterilize the stylus before first use and before each new use by following the protocol described in this chapter. Sterilization must take place immediately after cleaning and must be carried out in accordance with good practice.

The recommended sterilization cycle is 134 ° C for 18 min.

The effectiveness of the sterilization is the responsibility of the user, who will have taken care to validate the process.

The stylus is designed to withstand at least 25 cycles of autoclaving according to the protocol outlined above. After this number of cycles, the accuracy of the stylus and its robustness are not guaranteed by ModJaw.

Single use pieces:

Supports for mandibular markers and reflective markers are single-use pieces and are discarded at the end of the exam.



The user must discard the mandibular markers support as well as the reflective markers (disposable instrument) after each use and never reuse it for another patient.

Transportation and storage

In order not to compromise the performance of the device, it is essential that the various components of the device are protected from falls, shocks, vibrations, inappropriate environmental conditions and possible contamination.

The storage and transport conditions to respect in order not to risk damaging the device are as follows:

- Temperature: -10 ° C to 50 ° C
- Atmospheric pressure: 50kPa to 106kPa
- Humidity level: 10% to 90%

As indicated on the packaging and protections, it is necessary to take the following precautions to not compromise the performance of the device:

- The device must not be sheltered from the sun's rays,
- The device must be protected from hot or cold temperatures,
- The device must be protected from fluids.

Between two acquisitions, the device must be in storage position, the articulated arm of the carriage folded in storage mode along the stem.

7 Device malfunctions

In case of malfunction:

- stop using the device immediately,
- Try to identify or eliminate the cause of the malfunction by referring to this document
- If it is not possible to identify or eliminate the cause with this document, turn off the power and call Modjaw customer service (see the manufacturer section at the beginning of the document for detailed contact information)

In the event that the user is obliged to contact Modjaw customer service, please provide the following information to the customer service:

- Serial number of the device (it is on a cart),

- The software version of the device,
- The operating system version of the Panel PC,
- Screenshot of the bug or problem,
- Log exports, available with button "Export to support" in the "i" button of the ModJaw banner,
- Export the consultation on which the problem occurred,
- A description as accurate as possible of the process that led to the error message

In the event of malfunctions of the device and / or defects suspected and / or noted, several measures must be taken:

- The user must remove the device from use,
- The device must be labelled as "Out of Service",
- The device must be secure and isolated to prevent its use.

The user may only use the device again after the repair or replacement of the defective parts.

The user must warn Modjaw of malfunctions so that the latter can carry out an inspection.

Immediate maintenance measures should be taken in the following cases:

- Penetration of liquids into the device,
- Damaged covers and cases,
- Damaged power cables,
- Malfunction of the cart wheels,
- Erased or detached labels,
- Other defect(s) suspected or verified.



In case of malfunction or difficulty using the device, contact the ModJaw team at the coordinates listed at the beginning of this document.

8 Maintenance and monitoring

Contact Maintenance and monitoring:

Modjaw
 354 Voie Magellan,
 73800 Sainte-Hélène-du-Lac
 France
 Telephone: +33 (0)6 99 60 07 77

Email: info@modjaw.com
 Website: www.modjaw.com/fr/

9 Guidance and Manufacturer's Declaration: Electromagnetic Emissions

Special precautions should be taken with electromedical devices regarding electromagnetic compatibility, their installation and commissioning must be carried out in accordance with the electromagnetic compatibility information provided in this document.

This statement currently applies to the entire TECH IN MOTION system

This device complies with the requirements of EN 60601-1-2 which describes the conditions of electromagnetic compatibility (EMC) for medical devices. MODJAW Tech in Motion requires precautions against EMC. MODJAW Tech in Motion must be installed and commissioned in accordance with the recommendations of this manual.

Conformity of the EMC standards does not mean that a device is entirely immune from interferences. MODJAW Tech in Motion can be affected by portable or mobile RF communication equipment. MODJAW Tech in Motion should not be used next to other devices or stacked with them. If it is not possible to do otherwise, MODJAW Tech in Motion should be monitored to check the normal operating conditions in the configuration in which it will be used.



Interference Hazards: The use of accessories, sensors and cables other than those specified, except sensors and cables sold by the manufacturer as spare or replacement parts could induce an increase in emission levels or a decrease in MODJAW Tech in Motion immunity levels.

10 Recycling

The cart, the camera and the PC panel must be recycled according to the WEEE directive. These components should not be thrown away with household waste but via suitable sorting channels.

Single-use items are discarded as healthcare waste.