Instructions for Use

seethrough studio

DID-200

DID-200 - ENG - Rev01

Table of contents

Conformity

The seethrough studiosoftware conforms with the following Regulations, Directives and Standards:

CONFORMITY TO EUROPEAN AND AMERICAN REGULATIONS, STANDARDS AND DIRECTIVES

QMS

ISO 13485:2016	Medical devices - Quality management systems - Requirements for regulatory purposes

Risk management

ISO 14971: 2019	Medical devices - Application of risk management to medical devices
IEC/TR 80002-1:2009	Medical devices - Part 1: Guidance on the application of ISO 14971 to medical device software

Safety

IEC 81001-5-1:2021	Health software and health IT system safety, effectiveness and security – Part 5-1: Security – Activities in the product life cycle.
IEC 82304-1:2016	Health software – Part 1: General requirements for product safety.

Software

IEC 62304:2006 + AMD1:2015	Medical device software: software life cycle processes

CONFORMITY TO REGULATIONS, STANDARDS AND DIRECTIVES ONLY FOR CE MARKET

Regulations for medical devices

CE 0051	Medical Device Regulation (MDR). Regulation (UE) n. 2017/745 for medical devices. Class IIa devices, in accordance with the Rule 11 – ANNEX VIII of the above Regulation.

Note: seethrough studio is delivered with a EU Declaration of Conformity.

Symbols and messages

SAFETY SYMBOLS USED IN THIS MANUAL

CAUTION: Indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

PROPERTY DAMAGE MESSAGES

Notice: Indicates information considered important, but not hazard-related. Typically to avoid damage to the product.

SYMBOLS ON LABELS

The following symbols are reported on external labels and on the shipping box of the device. To check the position of labels, see Labels on the unit.

MD	Medical Device
#	seethrough studio device type or model
REF	Catalogue number
SN	Serial Number
UDI	Unique Device Identification
HIBC	Health industry bar code in accordance with HIBC Standard
ITA	Country of manufacture, followed by manufacturing date (YYYY-MM-DD)
CE 0051	CE mark

	Manufacturer
	Consult electronic instructions for use
	Product information
	Refer to instruction manual
	Software version/release
	Technical Support

Introduction

CONTENTS

This section deals with the following subjects:

About this manual

INTRODUCTION

This manual contains the Instructions for Use of W&H seethrough studio.

FOR YOUR SAFETY AND THE SAFETY OF YOUR PATIENTS

The purpose of this manual is to provide information about seethrough studio to ensure:

- optimal use.

Please read carefully the safety information (refer to Instruction for Use).

OBLIGATIONS WITH REGARD TO THIS MANUAL

This manual is an integral part of the product and accompanies it for its entire working life. It must be consulted in all situations related to the life cycle of the product, from its delivery through to decommissioning. For this reason, it should always be accessible to operators both online and offline.

To this effect, the last and most up-to-date version of this IFU is always available on the download center at https://www.wh.com. In accordance to the 2021/2226, a paperback copy of this manual can be requested by the user.

Contact customer service in the event the manual is unavailable. If the device is transferred, always attach the manual for the new owner.

MANUAL CONTENT

This manual contains the Instructions for Use and guidelines for seethrough studio version 2.x.x.

INSTRUCTIONS FOR USE

This software is designed to be mainly used together with W&H devices. However, seethrough^{STUDIO} allows to import DICOM data captured from other devices. The complete manual (Instructions for Use) is available at the www.wh.com website. See back cover of this manual.

Refer to the Instructions for Use of the specific device for:

- Conformity.
- Classification in Accordance with IEC 60601-1.
- Electromagnetic compatibility.
- Symbols on labels.
- Labels on the unit.

- Use restrictions.
- Safety information.

DISCLAIMER

All pictures, graphics and illustrations provided in this manual are for the comprehension of the text. They are not meant to be an accurate representation of product details. Thus, they should be taken as indicative only, and may differ from the actual product.

For any suggestions or remarks please send an email to office.sterilization@wh.com.

For any suggestions or remarks please contact W&H or an authorized service partner.

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The information contained in this document is subject to change without prior notice.

Use restrictions

INTENDED USE

The seethrough studio software is intended for use by healthcare professionals to support diagnosis and treatment planning through the analysis of radiographic images acquired from 2D and 3D x-ray imaging devices, intra-oral sensors, and PSP plates, as well as 3D surface scans obtained from intra-oral scanners.

It offers tools for image enhancement, documentation, and optional features for processing the activities of dental organizations in radiological examinations, including uploading/managing exams/images, screening diagnostic images, saving, sharing, editing, and drawing conclusions.

It is also possible to activate AI functions for general segmentation and object identification.

The software and its functionalities are intended to assist, not replace, the clinical decision-making of qualified healthcare professionals.

Notice: this software does not manage or influence the emission of x-rays.

TARGET USERS

seethrough studio is intended to be used by dentists, radiologists and any other legally qualified health care professionals.

TARGET PATIENTS

The seethrough studio software is intended for use with medical images from both adult and pediatric populations. However, the AI-based segmentation features are designed exclusively for adult images, as these algorithms were trained and validated only on adult datasets. These AI functions are optional.

KNOWN CONTRAINDICATIONS AND LIMITATIONS

No known contraindications and limitations.

APPLICATION FIELD

seethrough studio is intended for used in the following fields:

- Endodontics.
- Periodontology.
- Dental prosthesis.
- Functional diagnosis and therapy of craniomandibular dysfunctions.
- Dental surgery.
- Dental implants.
- Oral and Maxillofacial surgery.
- Orthodontics.
- Otorhinolaryngologist - ENT (middle and inner ear, paranasal sinuses, main nasal cavity, maxillary sinus, ethmoidal cells, sphenoidal sinus, frontal base of the skull, frontal sinus.

Abbreviation used in this manual

2D	Two-dimensional
3D	Three-dimensional
CBCT	Cone-Beam Computed Tomography
IB	Interface board
MB	Master board
NIC	Network Interface Card
PANO	Panoramic exam
PMS	Practice Management System
ROI	Region Of Interest
SB	Slave board
TMJ	Temporomandibular junction

Safety information

CONTENTS

This section deals with the following subjects:

Cyber security

Cybersecurity has been implemented according to the “MDCG 2019-16 - Guidance on Cybersecurity for medical devices”.

Cyber security is the process of preventing unauthorized access, modification, misuse, denial of use or the unauthorized use of information that is stored, accessed or transferred from a medical device to an external recipient. A local administrator, or service provider, is a user who is authorized by the owner to perform security relevant functions that ordinary users are not authorized to perform.

Cyber security risk management is a shared responsibility among stakeholders including W&H, the user, and the healthcare facility. Failure to maintain cyber security can result in compromised device functionality, loss of data availability, loss of data integrity or expose other connected devices or networks to security threats. These threats cab be:

- re-purposing of the system computing capability if a malware can access the operating system;
- re-purposing of the system computing capability if operators can access the operating system;
- exposition to unauthorized use or alteration of the device by malware;
- exposition to unauthorized use or alteration by unauthorized access.

A cyber security event can be detected in several ways:

- operation and/or network connection slower than normal;
- suspicious pop-ups or home page changes in internet browser;
- no passwords working at a certain point;
- unidentified programs in start menu or system tray;
- missing, corrupted or altered data.

W&H seeks to protect the security of your data while also providing measures to strengthen the resiliency of the products from external cyber security attackers. W&H complies with applicable security and privacy regulations.

W&H communications policy strives for coordinated disclosure. W&H works in this way with our customers and other parties, when appropriate, in response to potential vulnerabilities and incidents involving our medical devices, no matter the source.

W&H maintains a set of cyber security controls to assure the cyber security of its units and to maintain their functionality and safety.

DEVICE CONNECTIVITY

The following interfaces are critical for cyber security:

- LAN port for interoperability with:
  - clinical server;
  - DICOM modality worklist;
  - W&H Remote Service (ioDent);
  - DICOM/PACS for image storage;
  - connection to acquisition devices;
- USB ports of the PC, for connection to various USB-storage devices.

RECOMMENDATION FOR CYBERSECURITY

W&H recommends always to follow network security best practices, such as maintaining software, segmenting via firewalls, closing unused ports, restricting user permissions, limiting third party access and monitoring network activity. This device is designed to be used either as a standalone unit or connected to the facility's internal PACS or other closed- loop networks. It is not intended to be connected to the Internet, unless:

- the facility is specifically instructed to do so by W&H;
- the facility takes adequate precautions to ensure the cyber security of the unit from threats related to its Internet connection.

In addition, seethrough studio software is password protected; therefore, only authorized users can access to the software and its data, while other users can get to the operating system without being able to access the software.

W&H will develop updates or patches for the seethrough studio software, in order to continuously ensure the product safety, as needed throughout the life-cycle of the unit.

CLINICAL SERVER DATA STORAGE

The clinical server stores clinical image files in the OS filesystem, in order to optimize and simplify data backups. This requires careful selection of the storage location as recommended in this IFU, in the following chapters. Clinical server keeps other patient data (personal identification) in a database, not accessible directly by users.

CLOUD SECURE COMMUNICATION

A secure communication (with authentication and authorization) can be established between the application and the cloud server for the following functionalities:

- remote software update;
- setting management;
- device monitoring;
- clinical image sharing.

The user and authorized technicians can interact with the cloud server by means of a generic device (e.g.: PC, tablet, smartphone) with a web browser and proper authorization and authentication.

INFRASTRUCTURE REQUIREMENTS

In order to minimize the possibility of cyberattacks, it is user responsibility to apply the following measures:

- software update/install shall be done by authorized and trained personnel only;
- it is recommended to activate a firewall on the router/modem used for the Internet connection.

In addition, the definition and maintenance of the local IT network configuration, including firewall rules, routing policies, VLAN segmentation, Group Policy Objects (GPOs), access control lists, and

any network-level authorization or blocking mechanisms, are under the full responsibility of the customer or the healthcare facility's IT administrator.

W&H provides the necessary technical information for interoperability but does not manage or validate customer network configurations. The customer must ensure that such configurations are compliant with applicable cybersecurity standards and do not interfere with the intended use of the medical device.

Note: further security information is mentioned in the MDS2 document, which is available on request.

SOFTWARE BILL OF MATERIAL (SBOM)

The device provides the possibility to access the SBOM.

EVENTS POSSIBLY CAUSED BY A CYBERATTACK DETECTABLE BY THE USER

The following situations, visible by the user, could be caused by cybersecurity events:

- frozen screen;
- corrupted or inaccessible clinical image files;
- significant slowdown when navigating the menus;
- malfunctioning or blocked network services (such as: remote data storage and access, cloud server access, etc.).

EVENTS POSSIBLY CAUSED BY A CYBERATTACK DETECTABLE BY THE USER

If a cybersecurity event or incident occurred, or in case of a suspect, the following indication shall be followed to minimize the impact and prevent further damage:

- disconnect the customer server and the customer PC from the network (Ethernet cable and/or WiFi dongle) to prevent spreading the damage to other devices and protect the stored data;
- disconnect the USB storage media to reduce the possibility to corrupt stored data;
- inform the IT department and an authorized technician (or device manufacturer) and follow the indications they would provide to secure the affected device.

USER RESPONSIBILITIES

Authentication of OS users

The operating system itself allows the end user to establish and configure "User Accounts". The authentication shall be performed with a password and/or with more secure approaches e.g. 2FA (two factor authentication).

In order to minimize the possibility of cyber-attacks, the following protection measures are strongly recommended:

- protect with personal password every user account on the Windows login. Passwords shall be:
  - strong (made at least of 8 alphanumeric characters),
  - safely managed by every user,
  - periodically changed.

Authentication of Application users

The seethrough STUDIO system allows the end user to establish and configure "Application User Accounts" . The authentication shall be performed with a password.

In order to minimize the possibility of cyber-attacks, the following protection measures are strongly recommended:

- Passwords shall be:
  - strong (made at least of 8 alphanumeric characters),
  - safely managed by every user,
  - periodically changed.

Auto-logoff/Screen Lock

The operating system can prevent access and misuse by unauthorized users if the device is left idle for a period of time. The following precautions are recommended:

- the length of inactivity time before auto-logoff/screen lock is customizable by the user/administrator,
- the auto-logoff/screen lock should be always enabled,
- the local supervisor should prevent unauthorized user from accessing the dedicate laptop or PC, in order to preserve system and data confidentiality, integrity and availability,
- the local supervisor must set the logon screen saver timeout time to reduce accidental view of data.

Malware, virus, and network threat protection

Due to the risk of viruses and other malware, users are required to install and configure appropriate antivirus software (such as Windows Defender or XProtect) to protect their device. Please ensure that your system is properly secured before use.

It is recommended also to:

- make sure that all the other PCs in the network are protected by an anti-virus,
- implement policies for periodic scan of the entire system and third party software updates by the local administrator,
- keep the OS up to date by installing all the security patches;
- activate the OS firewall on the customer PC and customer server,
- activate a firewall on the WAN router/modem used for internet connection, if present,
- avoid installation of any unknown or untrusted software since it may undermine performance and safety of the PC and the equipment.

Application installation and updates

In order to avoid unintended installation of malicious software, all application installers are signed by the manufacturer. It is required for users and technicians to verify the signature of the installers upon new installations or upgrades. Users and technicians shall not proceed with installation if the signature is not verified.

As periodic updates for seethrough studio software become available, the local administrator should evaluate these against the site needs and determine whether the update is suitable and/or applicable to their usage. The local administrator should only use updates/installation materials from the manufacturer as provided by the manufacturer or a representative service provider.

Data storage configuration

The clinical server application requires the selection of the clinical image file path upon installation. The path must be selected by users and technicians, considering the strictest safety and security approaches in cooperation with the local IT and network system administrator. The customer server PC and the PC containing the clinical image path shall be installed in a secure location, not accessible by unintended users, as disassembling the customer server PC or the PC containing the clinical image path might result in confidential data exposure.

Data backup

To avoid the loss of patient data due to damage to the storage device of the user's PC, it is recommended to regularly backup the data.

The application provides features to create snapshots of data. This feature is compatible with an intense and continuous use of the application and does not require the normal operations to be paused or stopped. This data snapshot is not to be considered as a long term backup solution; it is under the responsibility of the users to keep this data snapshots copied in a secure location, for long term backup.

To this end, it is recommended to:

- store the data in multiple different and independent storage media to disperse the risk of data loss or damage to the storage device,
- make regular copies (backup) of all your valuable data and store them in a safe place, separately from the host PC,
- make a virus scan of USB sticks or CD/DVD media before using them to check they are free from viruses, malware or any dangerous software.

INSTRUCTION FOR USE

- The user is responsible for the correct use and maintenance of the device in accordance with these Instructions for Use.
- The Instructions for Use updated to the latest version is always available at www.wh.com
- Keep these Instructions for Use for future reference.

MANUFACTURER RESPONSABILITIES

- The manufacturer can only accept responsibility for the proper installation, safety, reliability and performance of the product when the product itself is installed, used and serviced in accordance with the Instructions for Use.
- Servicing by unauthorized persons invalidates all claims under warranty and any other claims.

W&H RECOMMENDATIONS

Elements of our product and solution security program are included in this list:

- the initial software installation and system setup shall be done by authorized and trained personnel only,
- W&H provide information in the Instructions for Use to facilitate secure configuration and use of our medical devices in your IT environment.

Responsibility

USER RESPONSIBILITY

- The user is responsible for the correct use and maintenance of the device in accordance with these Instructions for Use.
- The Instructions for Use updated to the latest version is always available at www.wh.com
- Keep these Instructions for Use for future reference.

MANUFACTURER RESPONSIBILITY

- The manufacturer can only accept responsibility for the proper installation, safety, reliability and performance of the product when the product itself is installed, used and serviced in accordance with the Instructions for Use.
- Servicing by unauthorized persons invalidates all claims under warranty and any other claims.

CAUTION: serious incidents that have occurred in relation to this medical device should be reported to the manufacturer and competent authority in the country where the incident occurred.

Getting started

CONTENTS

This section deals with the following subjects:

Important information

- The seethrough studio software is intended for use exclusively by qualified healthcare professionals.
- Accuracy may vary depending on the quality of the input image.
- The seethrough studio software provides numerical annotations and measurements based on pixel data and image resolution. These values are approximate and do not represent calibrated physical measurements. They are intended solely to support clinical evaluation

and must be interpreted by qualified healthcare professionals.

- The software must be used in a dedicated, suitable environment free from distractions.
- **Small Structures:**
  - The accuracy (Dice score) for the Mandibular Canal may be lower than for larger anatomical landmarks due to the small size of the structure.
- **Performance Relative to Image Size/FOV:**
  - Processing time increases proportionally with the image volume and the number of teeth included in the analysis. Larger images or those acquired with a wide field of view require substantially longer processing times compared to smaller image datasets.
- AI-segmentation module is not available on macOS.
- **In regards to the AI-based functions within the software:**
  - **They are intended to assist healthcare professionals during the diagnostic process.**
  - **They do not have an autonomous diagnostic purpose.**
  - **They do not replace the clinical judgment of the healthcare professional, who remains solely responsible for the final diagnosis.**
  - **They can and may make mistakes.**
  - **They have been developed using images of adult patients. They are intended for images from adult patients.**

Requirements

WORKSTATION – NETWORK CONNECTION

Notice: All connectivity aspects are under the sole responsibility of the practice's IT management. W&H technicians are not authorized to access, modify, or configure workstations, PCs, or networks other than those provided by W&H. If intervention is required, contact the IT management.

- The practice must have a stable Internet connection. The acquisition workstation shall be connected to the practice network.
- The recommended network connection is a 1Gbit Ethernet (Cat6A minimum, Cat7 preferred). Wi-Fi connections are not permitted.
- The communication interface of the acquisition workstation is RJ45 for LAN cables.
- Verify the IP address of the practice network. If the IP address falls within the classes 172.30.30.0/24 or 172.30.40.0/24, contact IT management to change it.

WORKSTATION – MONITOR CONNECTION

W&H does not provide the monitor, nor the HDMI / DisplayPort cable.

- The minimum monitor size suggested is 15", the recommended is 24".
- The minimum resolution is 1920 x 1080, the recommended is 2560 x 1440.
- The monitor minimum recommended interface is HDMI 1.4 or DisplayPort1.2.

INSTALLATION SCENARIOS

It is possible to install seethrough studio alone, seethrough studio with Clinical Server, or All in One: seethrough studio and Clinical server together.

Additionally, there are two installation scenarios:

- First scenario: everything is installed in one workstation, both seethrough studio and Clinical Server. This means that it must be installed on Windows PRO (therefore considering the clinical server requirements to be more restrictive).
- Second scenario: seethrough studio and Clinical Servers are installed on two separate PCs and therefore have different requirements. For the client requirements see the tables below.

CLIENT REQUIREMENTS

Windows	Studio	Clinical Server	Studio + Clinical Server
OS Version	Windows 10/11 HOME 64-bit	Windows 10/11 PRO 64-bit	Windows 10/11 PRO 64-bit
CPU	Intel Core i7	Intel Core i5	Intel Core i7
Hard Drive	512 Tb	1 Tb	1 Tb
RAM	8 Gb (*)	16 Gb	16 Gb (*)
GPU	Integrated	Integrated	Integrated
GPU with AI	NVIDIA 4060 (6RTX Gb) (*)	N/A	NVIDIA 4060 (6RTX Gb) (*)
Ethernet interface	1x Gigabps Ethernet, 1x 100 Mbps Ethernet	1x Gigabps Ethernet, 1x 100 Mbps Ethernet	1x Gigabps Ethernet, 1x 100 Mbps Ethernet

An Internet connection is required for license activation.

(*) For a faster and better performance of the AI functionality, a NVIDIA 5060 Ti (16gb) GPU and 32gb RAM are recommended.

Product description

The seethrough^{STUDIO} software is a component of W&H Sterilization Srl radiographic medical devices. It processes information such as density and shape to construct tomographic images.

Note: a buzzer sound will be emitted as long as the X-ray emission is ON.

ARTIFICIAL INTELLIGENCE

The seethrough studio software uses artificial intelligence algorithms for the automated analysis of dental radiographic images. The system is designed to identify anatomical structures.

The AI model is not self-learning in the post-market phase and does not modify its behavior without authorized updates.

AI-USER INTERACTION

Only use DICOM-format images acquired according to standardized protocols.

The software generates an output that includes the visualization of areas of interest with graphical highlighting and a diagnostic PDF report.

To report a malfunction, contact the Service Partner for assistance. Find your nearest service partner at www.wh.com.

AI PERFORMANCE

The software was evaluated on CBCT images for anatomical and dental segmentation, demonstrating overall high performance.

Segmentation Accuracy

Segmentation of major anatomical structures achieved an average accuracy (average Dice score) above 0.8 of anatomical landmarks (Mandible 0.960, Maxilla 0.817, Maxillary Sinus 0.975, and Mandibular Canal 0.840).

Tooth detection accuracy

Tooth detection showed near-perfect results, with corresponding precision of 98.81% and recall of 97.38%, confirming reliable identification and numbering.

Dental segmentation accuracy

Dental segmentation achieved an average accuracy above 0.8 for the common landmarks of a tooth, and in particular: Pulp Chamber and Canals 0.929, Dentine 0.969, Enamel 0.952, Restoration 0.873, Crown and Bridge 0.888, Root Canal Filling 0.781, Endodontic Post 0.675, Implant 0.983.

CAUTION: if the acquired or reconstructed image provided as input to the AI is inaccurate or contains errors, the resulting segmentation will also be unreliable.

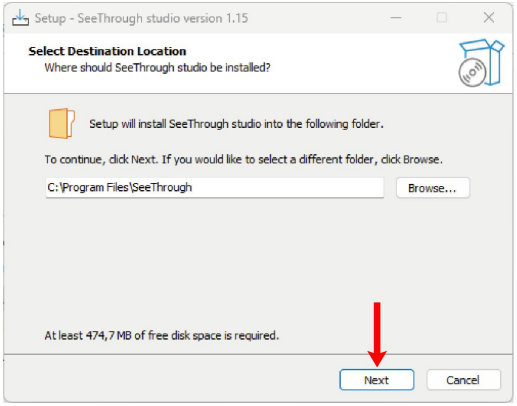
Operating the unit

1. Press the power switch located in the Workstation.
2. Open the software seethrough studio.

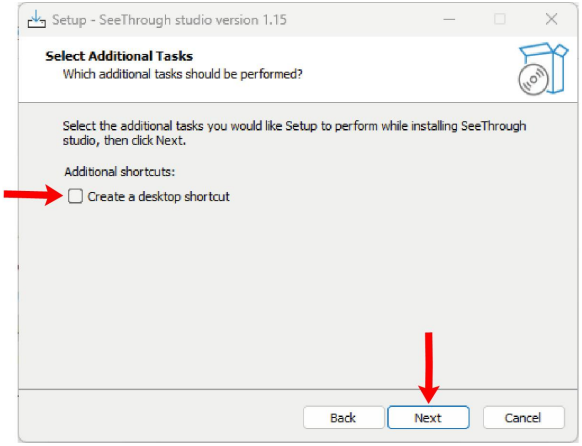
Software installation

Note: The customer and/or service technician is fully responsible for a correct installation.

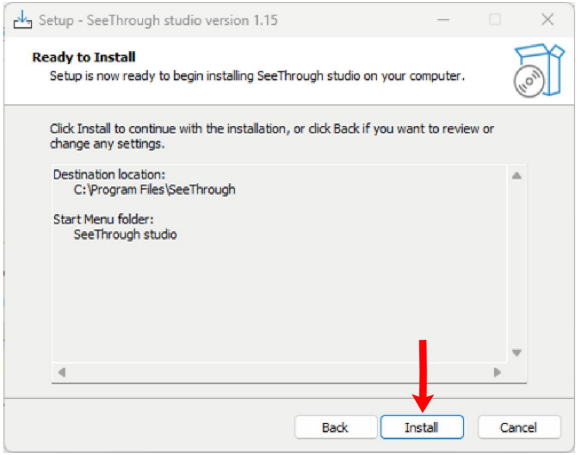
It is possible to install seethrough studio on a workstation/PC/laptop other than the one supplied by W&H, provided that the minimum system requirements are met. Ensure that the latest version of seethrough studio is available. To install seethrough studio, download or copy the installer and follow the guided installation procedure as described below:



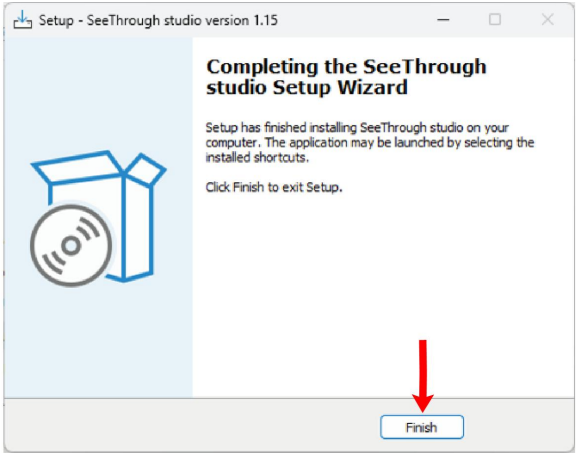
1. Open the installer:
SeeThroughStudioSeetup_X.XX.exe; where (X.XX) refers to the software version and release. As the installer pops up, click **Next**.



2. When requested, choose if you want a desktop shortcut or not (it is recommended you do).
Then click **Next**.



3. Click **Install** and wait for the installation to finish.



4. When the process is complete, click **Finish**.

Clinical Server Installation

It is possible to install the Clinical Server on different PCs as part of the seethrough studio functionality, provided that the new machine meets the minimum hardware requirements.

Note: It is not necessary to uninstall the Clinical Server from the original W&H workstation or other PCs.

Double click on the Clinical Server installer and follow the installation steps.

NETWORK SERVICES USER

For the installation of Clinical Server on an external customer PC, we need a user (Network Services User) with read and write permissions on the directory.

The adjustment of these permissions has been automatically configured in our installer.

During the installation, the system creates the folder intended to host the data cluster using the current user with administrator privileges. Subsequently, the PostgreSQL service is registered using the following command:

```
pg_ctl.exe register -N "%SERVICE_NAME%" -D %DATA_DIR% -o
"-p %PORT%" -U "NT AUTHORITY\NetworkService"
```

Required permissions for the NetworkService user

To ensure the correct functioning of the service, it is necessary to assign the NetworkService user full control permissions over the folder that contains the data cluster.

In most cases, these permissions are inherited automatically. However, in the specific case of this installation, they are assigned explicitly using:

```
icacls "#percorso_data" /grant *S-1-5-20:(OI)(CI)F /T
```

Note: *S-1-5-20* corresponds to the SID of the NetworkService user.

Similarly, it is necessary to assign the current user the permissions on the data folder with:

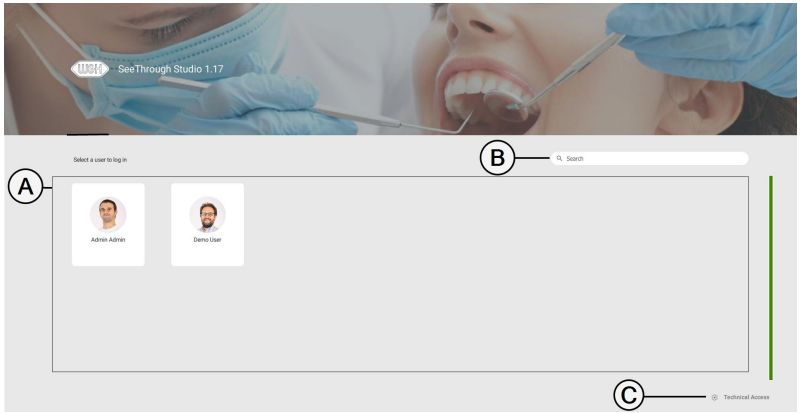
```
icacls "%DATA_DIR%" /grant "%USERNAME%":(OI)(CI)F /T
```

In this way, the installation forces the necessary permissions with these commands, thus avoiding failures during the process.

User authentication

AUTHENTICATION PAGE

First, enter the personal profile, choosing among all the registered users.



Part	Description
A	Cards with registered users
B	User search box
C	Technical access

A - CARDS WITH REGISTERED USERS

Access the personal area by selecting the corresponding user card. Cards are sorted alphabetically by surname.

Each card consists of the user avatar (likely a photograph), name, surname, and role (*e.g.*, admin, doctor, other).
In case many cards are available, use the scroll bar on the side.

B - USER SEARCH BOX

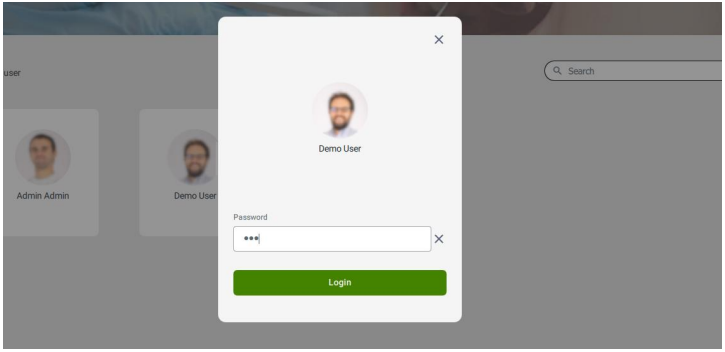
To quickly find a user card, type their name or a part of the name in the user search box to refine the search.

C - TECHNICIAN LOGIN

Access the program as a technician.

LOG IN

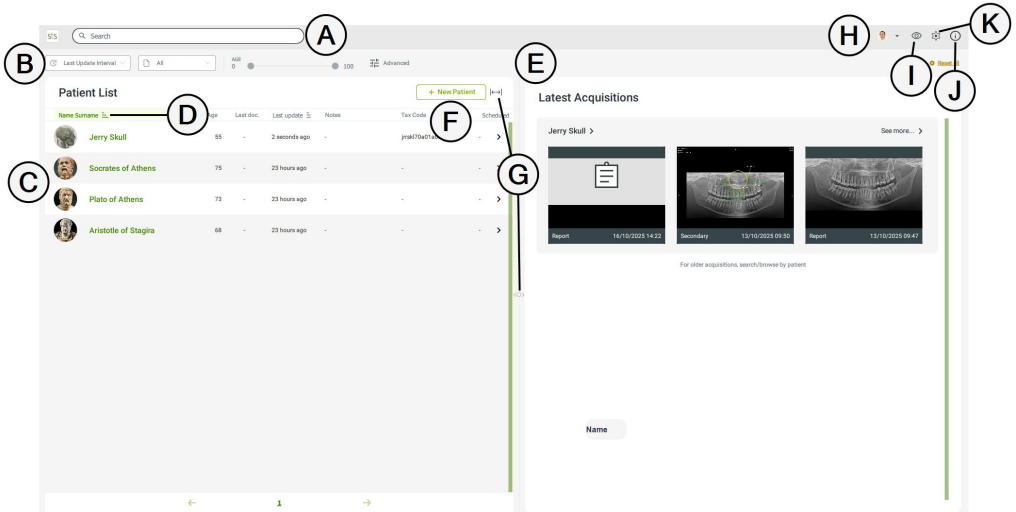
Once the right card is found, enter the password and open the homepage by clicking on the **LOGIN** button.



Home menu

The Home menu allows the user to navigate into patient profiles.

HOME MENU DESCRIPTION



Part	Description
A	Patient search bar
B	Toolbar
C	Patient list
D	Sorting tool
E	Latest acquisitions
F	New patient button
G	Resizing Tools
H	Active user
I	User visualization
J	Info
K	Settings

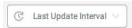
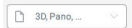
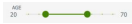
Home menu functions

A - PATIENT SEARCH BAR

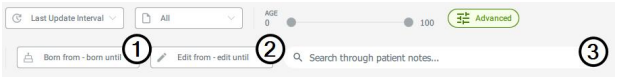
Quickly find a patient by writing their name or part of their name in the search bar.

B - TOOLBAR

The toolbar includes shortcuts for easily detecting patients or documents.

	Filters documents updated in a specific interval of time (last week, last month, last three months).
	Shows documents of a specific type (3D, panoramics etc...).
	Filters patients within a specific interval of age.

Alternatively, you can use the **Advanced** query for choosing among more parameters.



1. Birth date interval: filter patients born within a set of given dates.
2. Last edit interval: filter patients that have a study that has been edited between a set of given dates.
3. Search bar: allows to look for specific words or sentences contained within patient notes.

 Reset all	Removes all current filters.

C - PATIENT LIST

Access a patient file through the list. For each patient, the list reports:

- Name
- Age
- Last document type
- Last update time
- Scheduled
- DICOM ID
- PMS ID

D - SORTING TOOL

In the Patient List, patients can be sorted as follows:

- By surname, when clicking on the "Name Surname" label.
- By last modification, when clicking on the "Last update" label.
- By time schedule, when clicking on the "Scheduled" label.

	This symbol represents the attributes that can be selected as sorting methods. The currently active sorting method is displayed in green.

E - LATEST ACQUISITIONS

The Latest Acquisitions panel clusters preview cards of recent patient documents. Type of document, date, and hour are reported on the document preview card.

	When hovering with the mouse on the preview card, a blue lens icon appears on the top right. Clicking on it opens a small window previewing the document, including a button to open it in Analysis (refer to "Analysis module" on page 46).

Alternatively, it is possible to open the documents by directly clicking on the preview card (refer to "Analysis module" on page 46).

F - NEW PATIENT BUTTON

Create a new patient when needed. Click on the specific buttons to:

NEW PATIENT	Create a new patient.
Save	Save the new patient.
Close	Go back without saving.

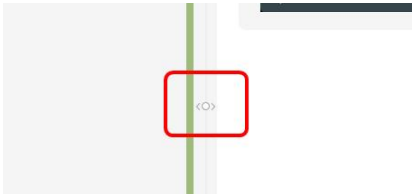
Among all the fields, birth date, name, and surname are mandatory for creating a new patient.

After saving, the patient will appear in the patient list.

G - RESIZING TOOLS

	Expand the Patient list as the "Recent document file" is consequently hidden. Thus, more patient attributes are shown. By clicking the icon again, the window is restored as shown in the "Home menu" on page 27.

Alternatively, it is possible to adjust the panels size by handling the draggable middle separator.



Find the resize icon between the Patient List and the Latest Acquisitions panels, and then click and drag left or right to adjust the panels to your liking.

H - ACTIVE USER

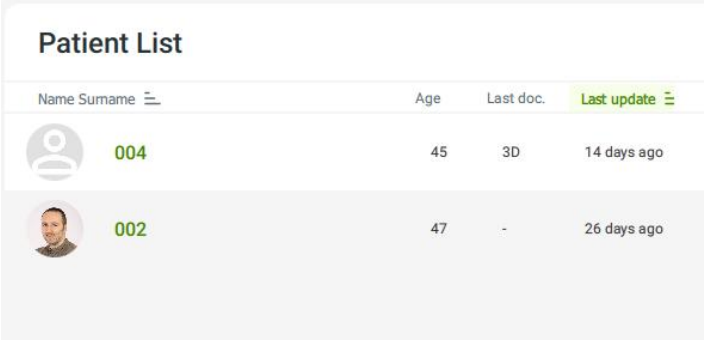
The active user is reported on the top right of the screen. Click on the user profile picture to lock the screen or log out.

After locking the screen, the user password will be required to access the system again.

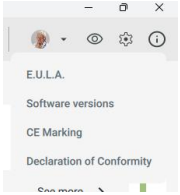
CAUTION: Lock the screen every time you leave the workstation area.

I - USER VISUALIZATION

This option allows to toggle the visualization of user details on the home screen. When toggled, user names are hidden and replaced by user numbers.



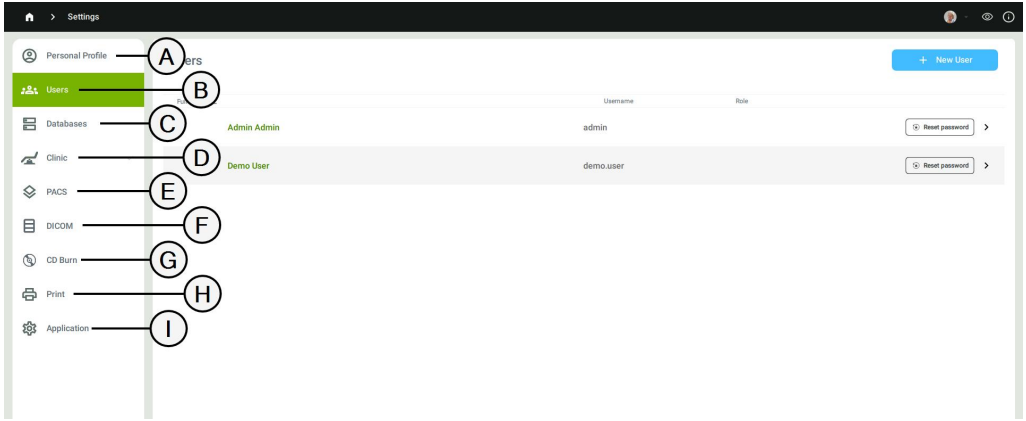
J - INFO

	Click to display a dropdown menu that allows you to open the following information documents: ■ End User License Agreement (EULA) ■ Software versions ■ CE Marking ■ Declaration of conformity

seethrough studio Settings

Use the settings menu to customize the software. Settings can be edited only with administrator rights.

SETTINGS MENU



Part	Description
A	Personal Profile
B	Users
C	Databases
D	Clinic
E	PACS
F	DICOM Servers
G	CD Burn
H	Print
I	Application

Note: In order to close the Settings menu, click on  . This will bring you to the home screen.

Settings functions

A- PERSONAL PROFILE

Edit active user details.

B - USERS

The **User list** shows users full name, username, and role. Users are sorted by surname.

With **administrator rights**, it is possible to add a new user or edit each existing user by clicking on the specific row in the list:

Save	Confirm the modification.
Close	Discard the modification.
NEW USER	Add a new user.

C - DATABASES

Databases include a name, connection status, type, PACS reference, Cloud status, and IP address.
Edit a database by clicking on the specific row in the list.

Click on:

- **Save** button to confirm a modification;
- **Close** button to discard the modification;
- **Delete** button to delete the database.

Add a new database:

 **New Database**	Add a new database.

Complete the values for Name, Host, Port, Database folder, Dicom folder, ClinicalServer Version, Database version, Database size, Database drive, Dicom drive.

In regards to Dicom folders, it's possible to:

- Toggle an option that keeps Dicom files in their original folders;
- Import a Dicom Folder by clicking on Import Dicom Folder

As for Backup options, it's possible to:

- Toggle on/off automatic backups.
- Select the Output folder for the backup.
- Create a Backup scheduling.
- Toggle on/off an option to shutdown the PC after backup.
- Choose the amount of backup copies to keep.
- Create a manual backup by clicking on Backup now.

The date and time stamp for the last backup is reported within Backup settings.

When finishing creating a new database, click on:

- **Save** button to confirm the new database;
- **Close** button to discard the new database.

D - CLINIC

The clinic menu manages three sub-menus:

- Rooms:

	Enable or Disable an existing room.
	Edit an existing room.
	Discard an existing room.
+ New Room **New Room**	Create a new room.

When creating a new room, set name, address, city, area code, and type. Then, click on:

  - **Save** button to confirm the new room;
  - **Close** button to discard the new room.

- Details: edit information on the clinic and save it.
- Roles: find the clinic's roles and their corresponding rights. If necessary, add a new role and assign its permissions:

	Permitted action.
	Non permitted action.
+ New Role **New Role**	Add a new role.

After adding the role, click on:

  - **Save** button to confirm the new user;
  - **Close** button to discard the new user.

E - PACS

The PACS list shows title, name, connection status, default modality, and IP address.

It is possible to add a new PACS or edit each existing PACS by clicking on the specific row in the list:

+ New PACS **New Pacs**	Add new PACS.

Click on:

  - **Save** button to confirm;
  - **Close** button to discard.

F - DICOM SERVERS

The DICOM Servers list shows server name, default status, server status, and IP address.

It is possible to add a new Server or edit each existing DICOM Server by clicking on the specific row in the list:

 **New Server**	Add a new DICOM server.

Click on:

- **Save** button to confirm;
- **Close** button to discard.

G - CD BURN

Enable this feature to allow seethrough studio to save DICOM exports on an external CD.

Note: the feature requires a CD Burner capable of monitoring the configured directory, where the DICOM files are stored together with the viewer as configured by the user.

 **Browse**	Select the unit associated with the CD Burner.

H - PRINT

The list of connected printers shows printer name, description, connection status, default printer status, and IP address.

It is possible to add a new Printer or edit each existing Printer by clicking on the specific row in the list:

 **New Printer**	Add a new printer.

Click on:

- **Save** button to confirm;
- **Close** button to discard.

I - APPLICATION

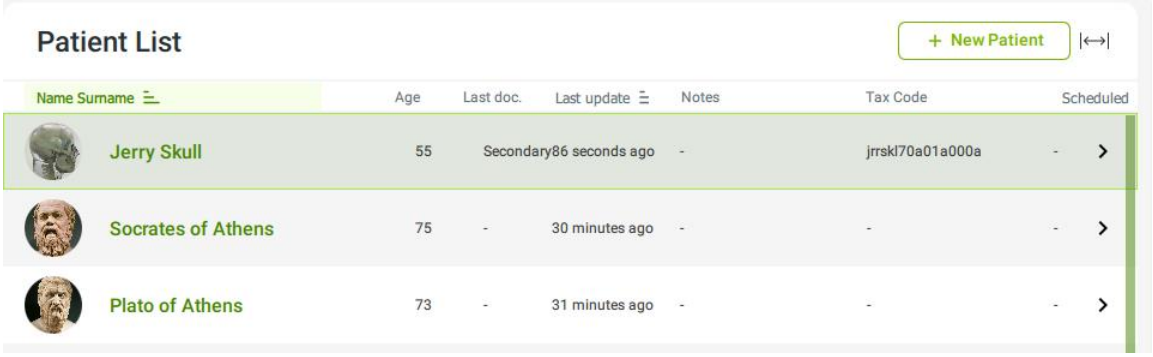
Manage the application's preferences.

Station AE Title	Value used by seethrough studio to communicate with Modality Worklist. This field is optional.
PACS Calling AE Title	Value used by seethrough studio to communicate with the PACS server. This field is optional.
Language	Select your preferred language among: English (US), Italian (IT), French (FR), and German (DE).
Render	Choose the default Render for image quality among: Best speed, Default, Better quality, Best quality.
3D Default Style	Select the default Style for 3D imaging among: Smooth, Cinematic, Glass (refer to "3D documents" on page 66

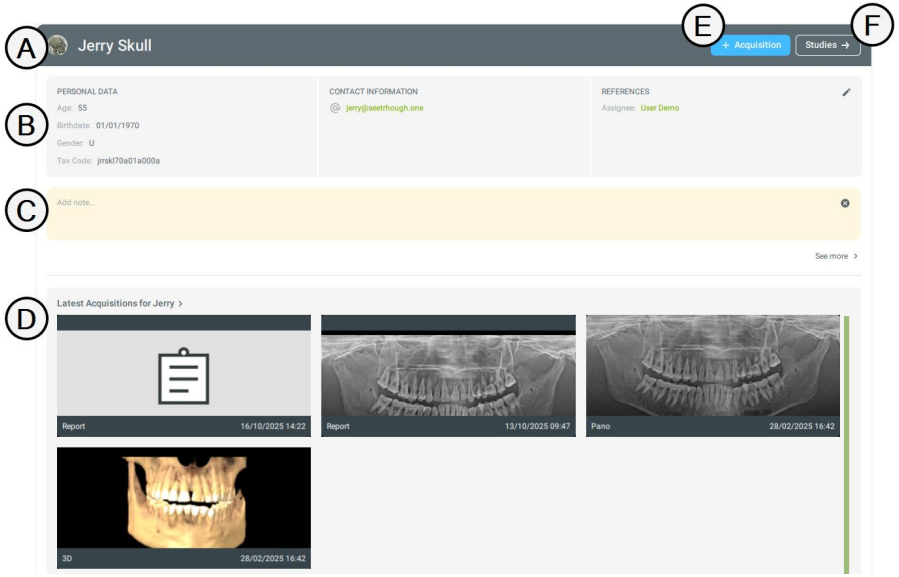
Patient card

PATIENT CARD DESCRIPTION

Click on a patient's name in the list to open the patient card. A patient that has been selected is highlighted with a shade of gray and a green borderline:



When selected, the patient card is displayed on the right panel, and shows the following information:



Part	Description
A	Patient name
B	Patient data
C	Notes
D	Patient latest acquisitions
E	**ACQUISITION** button
F	**Studies** button

Patient card functions

A - PATIENT NAME

The patient's name and profile picture, if any, are always visible in the top left of the patient card panel.

CAUTION: It is important to check the correspondence between the patient and the scheduled exam to avoid overexposure of the patient.

B - PATIENT DATA

Summary of the patient's currently available information.

	Edit patient: It's possible to edit the patient's data by clicking the pencil icon.

C - NOTES

Notes related to the patient. They can be modified at any moment and are automatically saved.

D - PATIENT LATEST ACQUISITIONS

Latest documents acquired of the patient are shown in the card. Click on them to open the Analysis module automatically.

	When hovering with the mouse on the preview card, a blue lens icon appears on the top right. Clicking on it opens a small window previewing the document, including a button to open it in Analysis (refer to "Analysis module" on page 46).

E - ACQUISITION BUTTON

ACQUISITION	Click to open the Acquisition module.

Refer to "Acquisition module" on page 41.

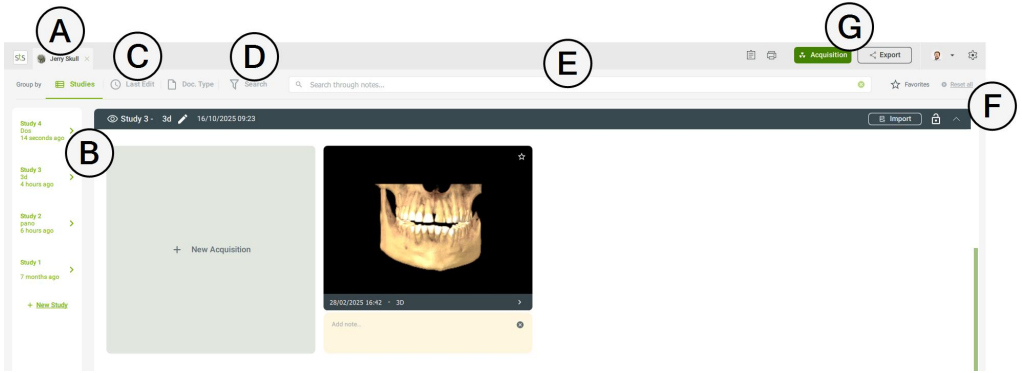
F - STUDIES BUTTON

Studies	Click to visualize all the studies referred to the Patient.

Refer to "Patient studies menu" on the next page.

Patient studies menu

PATIENT STUDIES MENU DESCRIPTION



Part	Description
A	Patient name
B	Studies
C	Group By
D	Search Filter tool
E	Search Bar
F	Reset All
G	Other module links

Note 1: the Patient studies menu also displays settings and active user on the top right. Refer to "Home menu functions" on page 28.

Note 2: in order to go back to the Home menu, click on  .

Patient studies menu function

A - PATIENT NAME

The Patient's name is always visible in the top left of the screen.

CAUTION: It is important to check the correspondence between the patient and the scheduled exam to avoid overexposure of the patient.

B - STUDIES

Documents of the patient are clustered into studies. To access different studies scroll down the page or choose among the study list on the left.

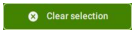
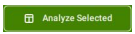
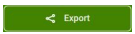
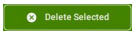
	Edit study name: click to edit the title of the study.
 Import	Import a document into the chosen study.
	The study is **unlocked**, meaning it can be edited. Click to **lock** it.
	The study is **locked** and can't be edited. Click to **unlock** it.

It's possible to add notes related to each study. They can be modified at any moment and are automatically saved.

Each document card shows several icons, as follows:

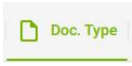
	Add the document to favorites. When clicked, the icon turns green, which means a document is now among favorites. These icons are permanently displayed on to right of each document card.
	When hovering over each study it is possible to select the document and/or multiple documents. When selected, the icon turns green.
	When hovering with the mouse on the study preview card, a blue lens icon appears on the bottom left. Clicking on it opens a small window previewing the document, including a button to open it in Analysis (refer to "Analysis module" on page 46).
	If a patient document is currently open in the Analysis module, a blue eye icon appears on the bottom right. This icon is permanently displayed as long as the document remains open.

When a document or multiple documents are selected, a menu appears at the bottom of the screen with several management tools:

 **Clear Selection**	Clear selection: clear all selected studies and close the menu.
 **Analye Selected**	Analyze Selected: opens all selected studies in the Analysis Module.
 **Export**	Export: export all selected studies. Refer to "Export module" on page 114.
 **PACS**	PACS: send the selected study to the PACS server. This action can't be performed simultaneously with multiple studies.
 **Delete Selected**	Delete Selected: deletes all selected studies.

C - GROUP BY

Documents can be grouped as follows:

 **Studies**	Each document belongs to a given study. This panel allows to create new studies and view existing ones.
 **Last Edit**	View documents that have been edited within fixed time intervals: last week, last month, and older than 3 months.
 **Doc. Type**	Order documents by document type: 3D, Pano, Secondary, Reports.

D - SEARCH FILTER TOOL

Use the specific tool for selecting documents:

	Search for documents of a specific types.
	Search for documents edited in a specific interval.

E - SEARCH BAR

The search bar allows to look for specific words or sentences contained within the notes.

F - RESET ALL BUTTON

Cancel all filters by clicking on **Reset all**. This allows to start a new query from scratch.

G - OTHER MODULE LINKS

The fast links allow to directly choose a section as follows:

- New Report module
- Printer module
- Export module
- Acquisition module
- Active User
- Settings

Operation

CONTENTS

This section deals with the following subjects:

Acquisition module

Notice: keep in mind that if you are using seethrough studio on a device that has no connection with any device, you can still work with the Analysis module (refer to "Analysis module" on page 46).

Consult the manual corresponding to each product for instructions on how to proceed with their acquisition process.

AVAILABLE DEVICES

seethrough studio is compatible with:

- W&H XRE-100 seethrough^{MAX}
- W&H XRE-200 seethrough^{FLEX}
- W&H XRI-301, XRI-302 seethrough^{SENSOR}
- Any PSP scanner using TWAIN protocol for communication
- Any digital sensor using TWAIN protocol for communication

No further hardware devices can be connected.

EXAMS

Ready-to-use exam types are clustered depending on the type of device:

Extra-oral devices

The acquisition module shall be used together with an external device approved by the manufacturer.
To have further information on patient positioning and X-rays exposure refer to the Instructions for Use manual of the specific acquisition device.

Intra-oral devices

Intra-oral devices allow performing two types of exams: Single exposure or Bitewing. Once decided the kind of exam to perform,

prepare the exam according to information reported in "Exam preparation: intra-oral" on the next page.

IMPORT A STUDY

CAUTION: It is important to check the correspondence between the patient and the scheduled exam to avoid overexposure of the patient.

To import a study, first make sure you have accessed the corresponding patient's profile.

Click in **Import** and choose the type of document you wish to import. Then, find the local document you need and click Open.

Exam preparation: intra-oral

CAUTION: Respect all the safety indications reported in the Instruction for Use of the device to avoid patient/user overexposure to X-ray.

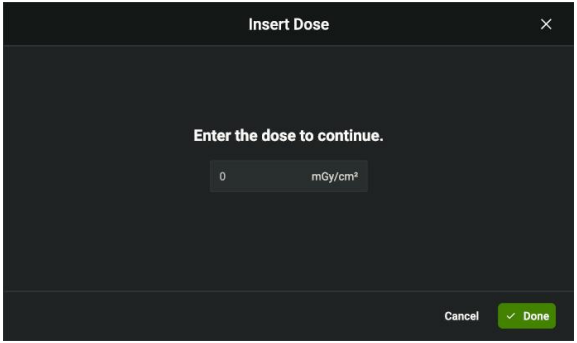
Notice 1: Radiological parameters, such as exam kV, mA and dose are always reported in the exam screen both in the upper black bar and in the central area of the screen.
Notice 2: Keep in mind that seethrough studio does not manage or influence X-rays emissions.

SINGLE EXPOSURE ACQUISITION

Single exposure acquisition mode allows capturing a single image as follows:

1. According to the image acquisition tool, follow the instruction displayed on seethrough studio interface.
2. Once the image has been acquired, if necessary, adjust the image, see "Adjustment actions on images" on page 45.
3. If the image quality is not satisfactory, click on **Retake** and confirm the action: the image will be saved in the server as discarded.

4. If the image quality is satisfactory:
    1. Click on **Done**.
    2. Insert the dose value displayed on the acquisition device, and click on **Done**. To insert a different value, click on **Cancel**.



BITEWING ACQUISITION

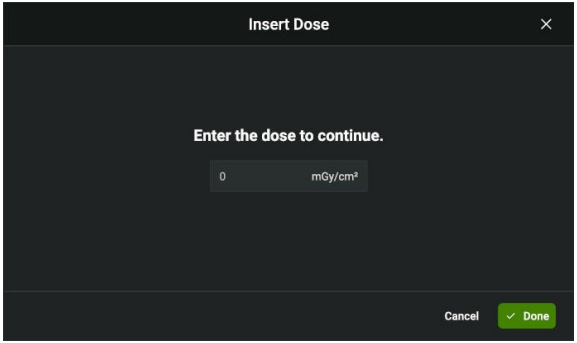
Bitewing acquisition mode allows capturing up to four images. By default, the interface highlights the first bitewing to be captured. If the exam requires it, it is possible to capture a different image by selecting specific teeth on the teeth board. Images are captured as follows:

1. According to the image acquisition tool, follow the instruction displayed on seethrough studio interface.
2. Repeat step 1 for the next images acquisition.
3. Once the image has been acquired, if necessary, adjust the image, see "Adjustment actions on images" on the next page..
4. If the image quality is not satisfactory, click on **Retake** and confirm the action: the image will be saved in the server as discarded.

5 If the image quality is satisfactory:

1 Click on **Done**.

2 Insert the dose value displayed on the acquisition device, and click on **Done**. To insert a different value, click on **Cancel**.

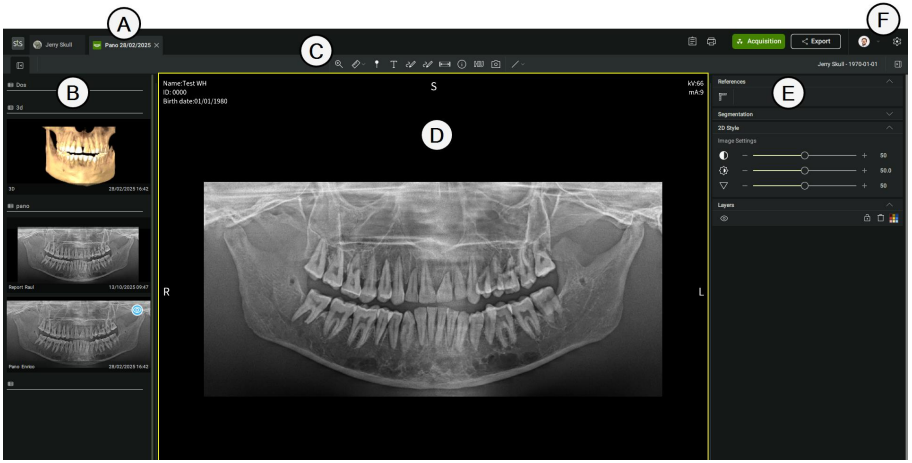


ADJUSTMENT ACTIONS ON IMAGES

Action	Function	Action	Function
	Rotates the image.		Exposure bar: shows the exposure evaluation of the image
	Flips the image horizontally.	**Drag-and-drop**	Bitewing only: allows changing images order by dragging them in the desired position.

Analysis module

ANALYSIS MODULE DESCRIPTION



Part	Description
A	Current document
B	Patient gallery
C	Toolbar
D	Document main window
E	Work panels
F	Other module links

Note 1: the Patient studies menu also displays settings and active user on the top right. Refer to "Home menu functions" on page 28.

Note 2: in order to go back to the Home menu, click on sts, or click the Patient's name to go back to the Patient studies.

Keep in mind that the Toolbar, Document main window, and Work panels are different depending on the type of document: **2D or panoramic** and **3D**.

Analysis module functions

A - CURRENT DOCUMENT

Studies are displayed and organized as separate tabs.

It is possible to cycle through different studies and documents by clicking their corresponding tab.

B - PATIENT GALLERY

All the patient's studies and documents can be previewed to the right.

Documents are ordered according to the grouping selection chosen in the Patient Studies screen (refer to "C - Group by" on page 40). At the same time, documents are ordered by date.

	Close gallery: collapses the gallery view, expanding the main window.
	Open gallery: if the gallery is closed, expands the gallery view.
	If a patient document is currently open in the Analysis module, a blue eye icon appears on the top right. This icon is permanently displayed as long as the document remains open.

C - TOOLBAR

The toolbar includes the main tools and functionalities necessary to edit and work on each document.

It varies according to the current document type.

D - DOCUMENT MAIN WINDOW

The main window displays the work area for each document.

It varies according to the current document type.

E - WORK PANELS

Panels include additional tools to work on the main window, including the Layers panel.

Layers are individual elements that can be manipulated independently.

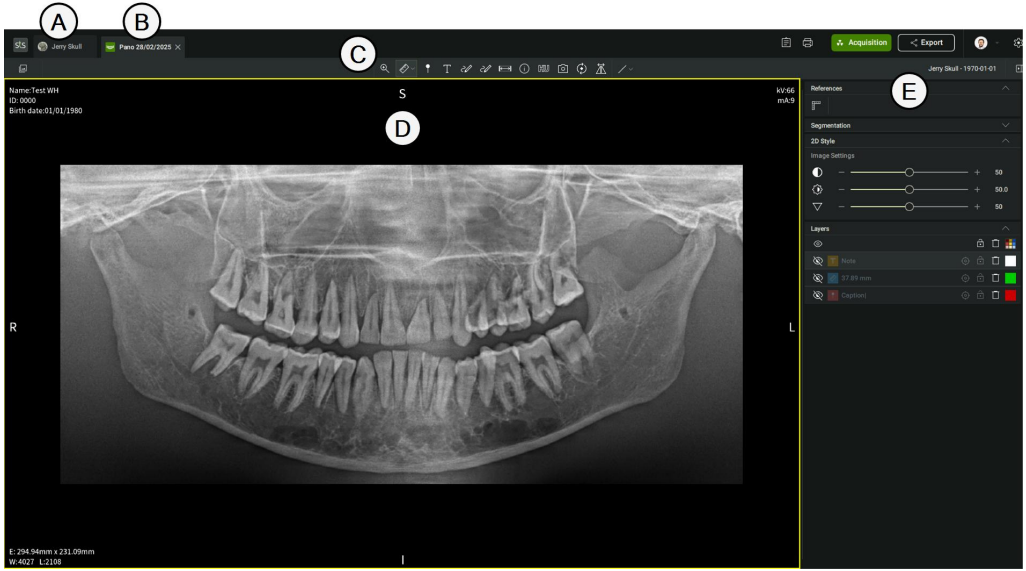
	Close panels: collapses the work panels, expanding the main window.
	Expand panels: if the work panels are collapsed, expands the panels section.

F - OTHER MODULE LINKS

The fast links allow to directly choose a section as follows:

- New Report module
- Printer module
- Export module
- Acquisition module
- Active User
- Settings

Panoramic documents



Part	Description
A	Patient name
B	Document name
C	Toolbar
D	Main window
E	Work panels

A - PATIENT NAME

The patient's name is always visible in the upper part of the screen.

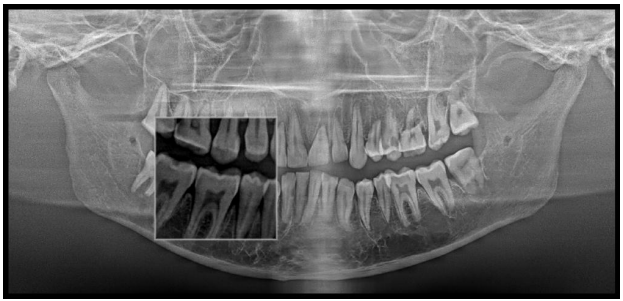
CAUTION: It is important to check the correspondence between the patient and the scheduled exam to avoid overexposure of the patient.

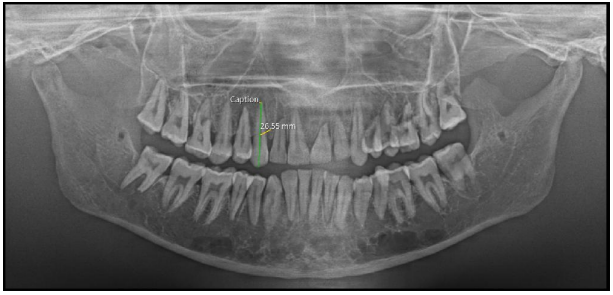
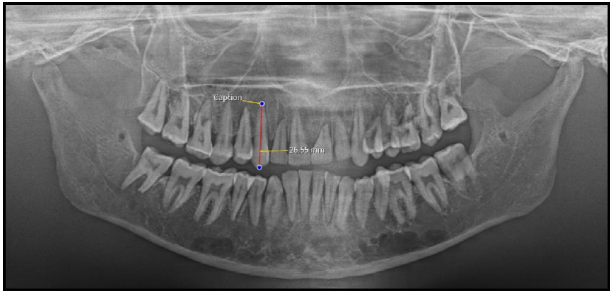
B - DOCUMENT NAME

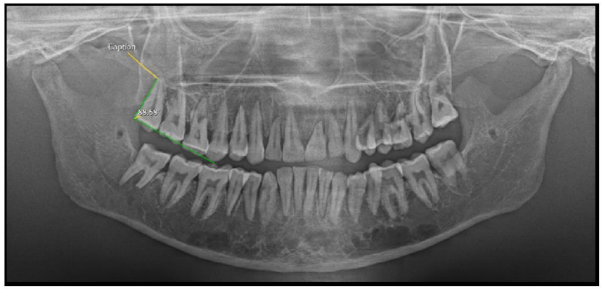
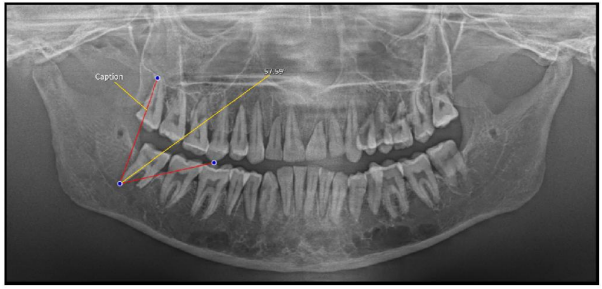
The name of the document currently under analysis is reported in the upper part of the screen.

C - TOOLBAR

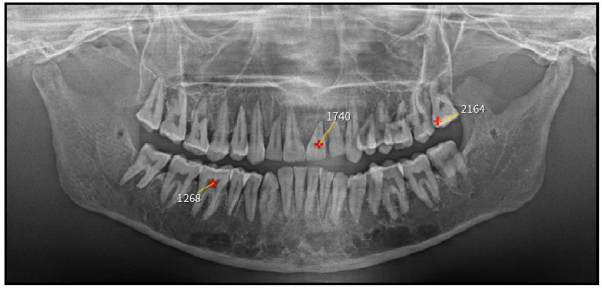
Notice: all annotations, including measurements, are only meant to support the specialist's diagnosis.

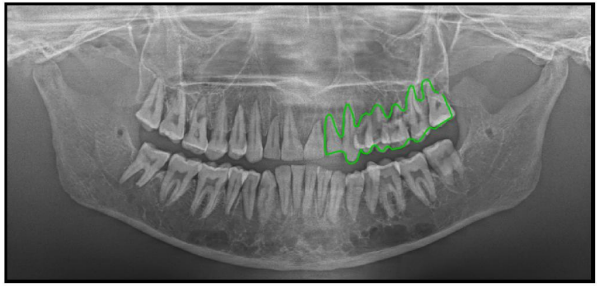
<table>
<tr><th colspan="2">Tool</th><th>Example</th></tr>
<tr><td></td><td>Picture-in-Picture (PiP)</td><td rowspan="5">  </td></tr>
<tr><td colspan="2">Zooms in on a specific area of the 2D document.</td></tr>
<tr><td colspan="2">How to use the tool:
- Click the Picture-in-Picture (PiP) tool; a zoom area will appear at the center of the image by default.
- Deselect the PiP tool to remove the zoom area.</td></tr>
<tr><td colspan="2">The zoom area has a standard size and it cannot be modified.</td></tr>
<tr><td colspan="2">To move the zoom area, hold down the right mouse button and drag until reaching the desired area.
You can edit the local values of the zoom area as follows:
- Hold the left mouse button and move the mouse right and left to edit the contrast.
- Hold the left mouse button and move the mouse up and down to edit the brightness.
- Move the mouse wheel up and down to zoom in/out.</td></tr>
</table>

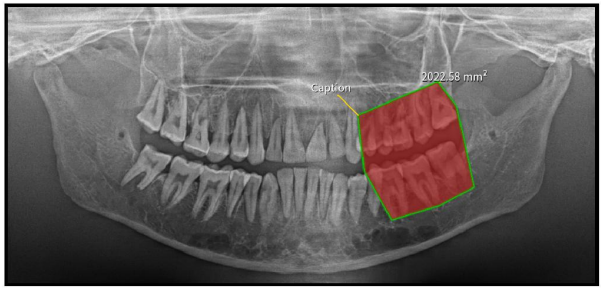
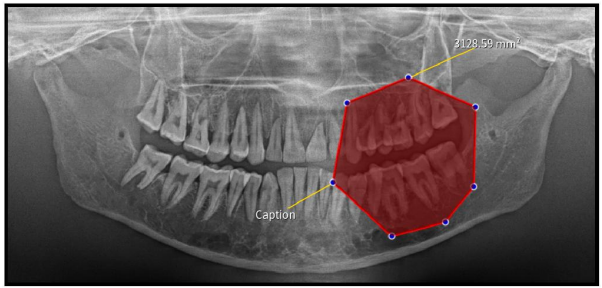
Tool		Example
	**Linear measure ***	 
Makes linear measurements between two points.		
How to use the tool: Click to set the starting point and drag until reaching the end point.		
The line is green colored by default, and includes the measurement attached to the center of the line, and a caption text attached to the starting point. You will notice that once you start measuring, the measurement value is automatically attached and updates as you move the mouse around the document to find the correct measurement.		
To edit the measurement, you can click the line itself, the measurement, or the caption text. As you hover over either element, it turns yellow. When selected, the line turns red, and blue dots appear at each end of the line. You can click and drag each blue dot to modify the measurement value and/or ends. You can also click and drag the line itself to change its location. The measurement value and the caption text can be clicked and dragged to change their location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.		

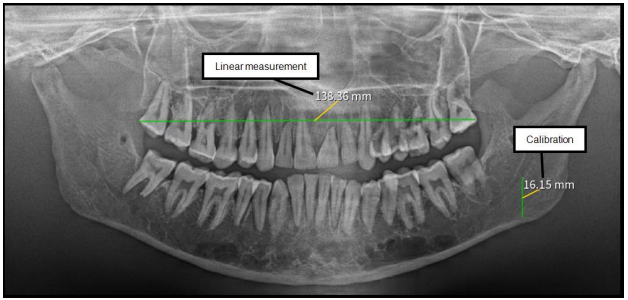
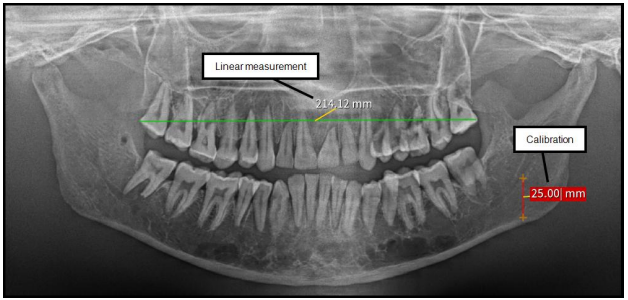
Tool	Example
Angular measure *	 
Measures angles between three points.	
How to use the tool: - Click to set the starting point. - Click again to set the angle vertex. - Click one last time to set the ending point of the second side of the angle.	
The sides of the angle are green colored by default, and includes the angle measurement attached to the vertex, and a caption text attached to the starting point. You will notice that once you set the angle vertex, the angle measurement is automatically attached and updates as you move the mouse around the document to find the correct measurement.	
To edit the measurement, you can click the lines of the angle, the measurement, or the caption text. As you hover over either element, it turns yellow. When selected, the lines turn red, and blue dots appear at the vertex and each end of the lines. You can click and drag each blue dot to modify the angle measurement and/or the angle location. You can also click and drag either of the lines to change the measurement location. The angle value and the caption text can be clicked and dragged to change their location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.	

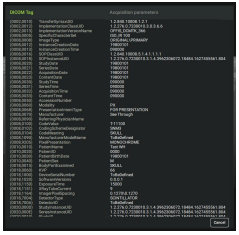
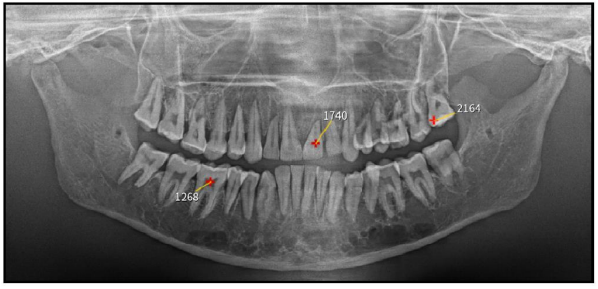
* a dropdown menu is available for accessing the tool.

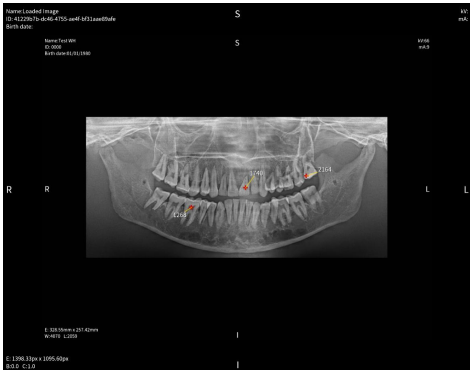
Tool		Example
	**Marker**	
Adds a marker in the document.		
How to use the tool: Click on the document where you need a useful marker.		
The marker appears as a small red cross, and includes a caption text attached to it.		
You can click the marker and drag it around the document to relocate it. As you hover over either element, it turns yellow. The caption text can be clicked and dragged as well to change its location on the document. The caption text can be edited by double clicking on it. If no caption is needed, just cancel the text.		

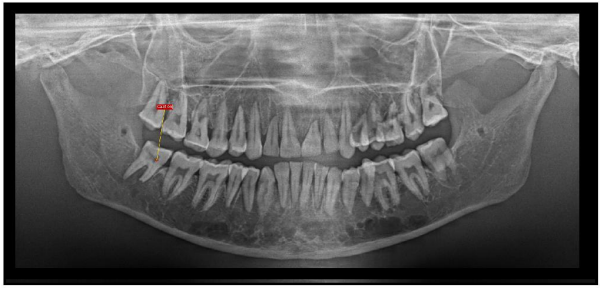
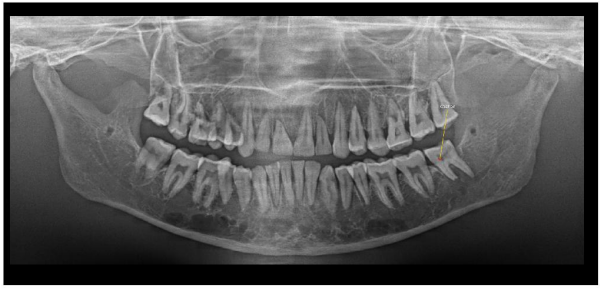
Tool	Example
Text	
Adds a text caption to the document.	
How to use the tool: Click on the document to begin typing. Press **Enter** or click anywhere else on the document to confirm and exit the tool.	
The text appears white by default.	
To edit an existing text, double click on it. While editing, the text is highlighted in red. You can click and drag the text caption to relocate it.	
Freehand	
Draws freehand shapes and/or lines.	
How to use the tool: Click and drag through the document to draw what you need.	
The freehand drawing appears in green by default.	
As you hover over the freehand drawing, it turns yellow. When selected, the line turns red. You can also click and drag the drawing to change its location.	

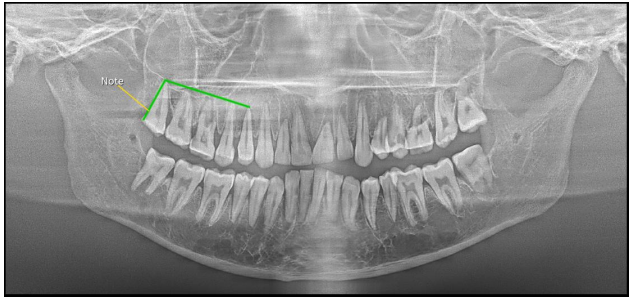
Tool	Example
Filled Shape	 
Creates a free shape by placing several vectors.	
How to use the tool: - Click to set the starting vector. - Click again to set the second vector; repeat as many times as needed to create the desired shape. - Double click to place the final vector.	
The sides of the shape are green colored by default, and the filling is transparent red by default. The shape includes the total area measurement attached nearby the first vector, and a caption text attached to the starting point. You will notice that once you set the second vector, the area measurement is automatically attached and updates as you cover more of the document with the shape.	
To edit the filled shape, you can click the lines of the angle, the measurement, or the caption text. As you hover over the shape, its lines turn yellow and the filling turns transparent yellow. When selected, the lines turn red, and blue dots appear at each vector. You can click and drag each blue dot to modify the shape. The area value and the caption text can be clicked and dragged to change their location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text. The shape itself can be clicked and dragged around the document to change its location.	

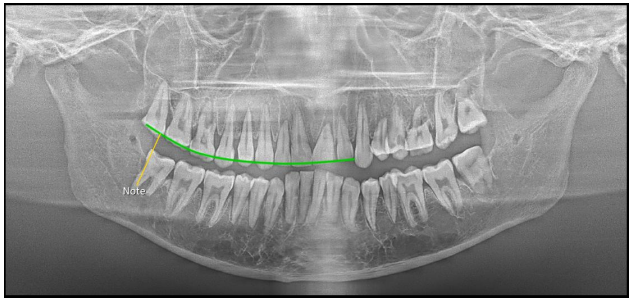
Tool	Example
Calibration	 
Adds a reference bar to calibrate all measurement values in the document.	
How to use the tool: - Click to set the starting point and drag until reaching the end point. - Edit the numeric value to calibrate all other measurements in the document. **Note**: you can add multiple calibrations to the document, but only the last edited calibration is taken into account.	
The calibration line is green colored by default, and includes the measurement attached to the center of the line. You will notice that once you start drawing the calibration line, the measurement value is automatically attached and updates as you move the mouse around the document to find the correct measurement.	
To edit the calibration value, you can click the lines, the measurement, or the caption text. As you hover over either element, it turns yellow. When selected, the line turn red, and orange crosses appear at each end of the line. You can click and drag each cross dot to modify the size of the calibration line. You can also click and drag the line itself to change its location. The measurement value can be clicked and dragged to change their location on the document. The calibration value can also be modified by double clicking on it and writing a new value, thus changing all other values in the document to match the new reference.	

Tool		Example
	**Acquisition Parameters**	
Displays the information and acquisition parameters of the DICOM document.		
How to use the tool: Click the tool to visualize the acquisition parameters. Then click Cancel to close the parameters panel.		
	**Density**	
Add a marker that automatically detects the tissue density.		
How to use the tool: Click on the document where you need to find out the tissue density value.		
The density marker appears as a small red cross, and includes a value attached to it.		
You can click the density marker and drag it around the document to relocate it. As you hover over either element, it turns yellow. The value text can be clicked and dragged as well to change its location on the document. **Note**: this value measurement is an approximation, and should not be taken as a reliable measure of tissue density.		

Tool		Example
	**Capture**	
Takes a snapshot of the document in its current state, including all measurements, captions, and other element added by the user.		
How to use the tool: Click on the tool and it automatically captures the snapshot.		
Note that this tool creates as a result a new document, categorized as a Secondary type document.		
	**Rotate**	
Rotates the document 90° to the right.		
How to use the tool: Click on the tool and it automatically rotates. The rotation includes all elements present in the document.		

Tool		Example
	**Horizontal Flip**	 
Flips the document horizontally, resulting in a mirrored image.		
How to use the tool: Click on the tool and it automatically flips. The tool also flips all elements present in the document.		

Tool		Example
	**Line shape ***	
Draws a line element with two or multiple vectors.		
How to use the tool: Click to set the starting point and drag until reaching the end point.		
The line is green colored by default, and includes a caption text attached to the starting point.		
To edit the line, you can click the line itself or the caption text. As you hover over either element, it turns yellow. When selected, the line turns red, and blue dots appear at each end of the line. You can click and drag each blue dot to modify the shape of the line. You can also click and drag the line itself to change its location. The caption text can be clicked and dragged to change its location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.		

Tool		Example
	**Curve shape ***	
Draws a curved line element with two or multiple vectors.		
How to use the tool: - Click to set the starting vector. - As you move the mouse, you will notice the tool creates a slight curve. - Click again to set the second vector; repeat as many times as needed to create the desired curve. - Double click to place the final vector.		
The line is green colored by default, and includes a caption text attached to the starting point.		
To edit the line, you can click the line itself or the caption text. As you hover over either element, it turns yellow. When selected, the line turns red, and blue dots appear at each vector. You can click and drag each blue dot to modify the shape of the line. You can also click and drag the line itself to change its location. The caption text can be clicked and dragged to change its location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.		

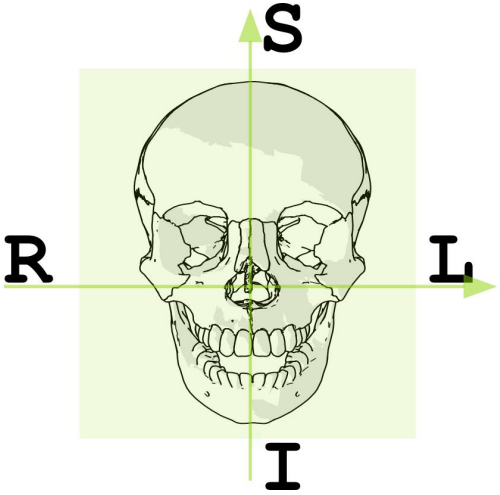
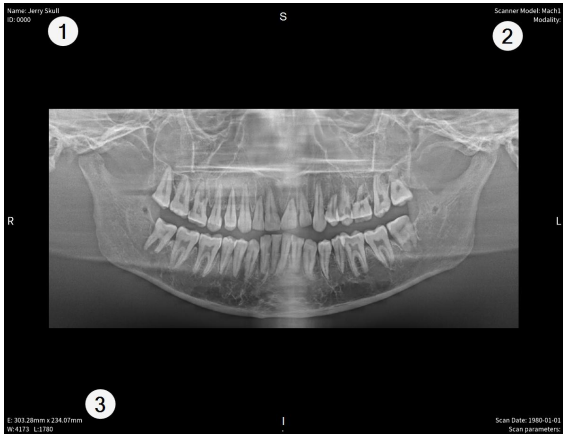
Tool		Example
	**Circle shape ***	
Draws a circle shaped element. Creates only the outline with no filling.		
How to use the tool: Click to set the starting point and drag until reaching the desired circle size.		
The shape is green colored by default, and includes a caption text attached to it.		
To edit the circle, you can click the shape itself or the caption text. As you hover over either element, it turns yellow. When selected, the shape turns red, a blue dot appears at its center, and a green cross appears on the circumference. You can click and drag the green cross to modify the size of the circle. You can also click and drag the circle or the blue dot to change the location of the shape. The caption text can be clicked and dragged to change its location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.		

Tool		Example
	**Rectangle shape** *	
Draws a rectangle shaped element. Creates only the outline with no filling.		
How to use the tool: Click to set the starting point and drag until reaching the desired rectangle shape and size.		
The shape is green colored by default, and includes a caption text attached to it.		
To edit the rectangle, you can click the shape itself or the caption text. As you hover over either element, it turns yellow. When selected, the shape turns red, and blue squares appear at each of its vectors. You can click and drag the blue squares to modify the size of the rectangle. You can also click and drag the rectangle itself change the location of the shape. The caption text can be clicked and dragged to change its location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.		

* a dropdown menu is available for accessing the tool.

D - MAIN WINDOW

The main window has labels for identifying the orientation of the image:

<table>
<tr><th>Ref</th><th>View</th></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td><table>
<tr><th>Directions</th><th>Axis</th></tr>
<tr><td>SI: superior - inferior</td><td>Longitudinal</td></tr>
<tr><td>RL: right - left</td><td>Transversal</td></tr>
</table></td><td>You can also find additional information, as follows:

1. Patient information: name, ID, birthdate.
2. exam information: radiological parameters.
3. document information: dimensions in mm (E), window (W) and level (L).</td></tr>
</table>

E - WORK PANELS

IMAGE SETTING MENU

Icon	Setting	Description
	**Contrast**	Modify the contrast of the image by moving the cursor in a range from 0 to 100. The unit of the scale is 1.
	**Brightness**	Modify the brightness of the image by moving the cursor in a range from 0 to 100. The unit of the scale is 0.1.
	**Sharpness**	Modify the sharpness of the image by moving the cursor in a range from 0 to 100. The unit of the scale is 1.

LAYERS

Layers are individual elements that can be manipulated independently. In this case, each layer represents an element that the user has added to the document via the various tools exposed previously in the Toolbar section (view "C - Toolbar" on page 49).

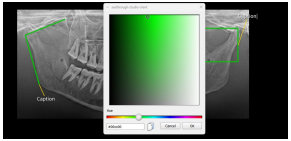
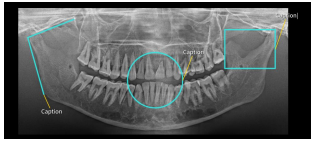
Element type

Icon	Description	Icon	Description
	Linear measure type layer		Angular measure type layer
	Marker type layer		Note type layer
	Freehand layer type		Density type layer
	Line type, Calibration type, and Filled Shape type layers		Curve type layer
	Circle type layer		Rectangle type layer

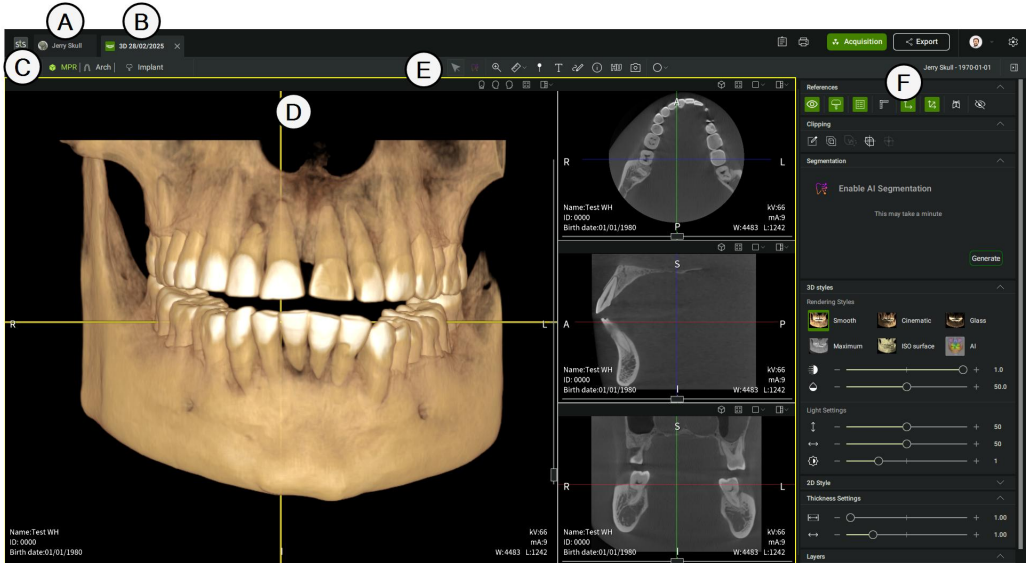
Actions

Icon	Description	Icon	Description
	Show layer		Unlock layer
	Hide layer		Go-to layer
	Lock layer		Delete layer

Color picker

Tool	Example
 **Color**	 
Changes the color of all elements in the document.	
How to use the tool: Click the tool and then choose a color in the color picker panel.	
Alternatively, you can change the color of each layer individually. Click on the color box corresponding to an individual layer, open the color picker and choose the desired color.	

3D documents



Part	Description
A	Patient name
B	Document name
C	Mode Menu
D	Main Window
E	Toolbar
F	Work panels

A - PATIENT NAME

The patient's name is always visible in the upper part of the screen.

CAUTION: It is important to check the correspondence between the patient and the scheduled exam to avoid overexposure of the patient.

B - DOCUMENT NAME

The name of the document currently under analysis is reported in the upper part of the screen.

C - MODE MENU

The 3D documents analysis module has three different work modes. Each mode offers its own main window visualization, its own tools, and its own work panels. Refer to the section dedicated to each mode for a breakdown of its functions.

You can choose among the following work modes:

- **MPR** or Multi-plannar reconstruction, which allows for direct 3D imaging analysis.
- **Arch**, which allows to segment the 3D analysis according to a 2D visualization of the dental arch.
- **Implant**, which allows to add, preview, and plan implants for the patient.

D - MAIN WINDOW

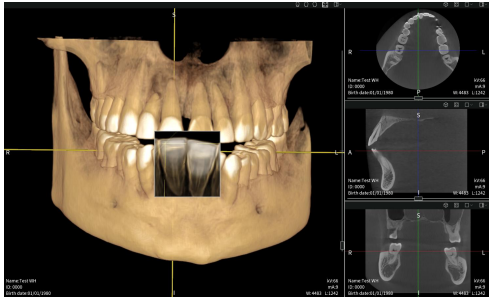
The main window changes depending on the analysis work mode. However, there are several elements in common.

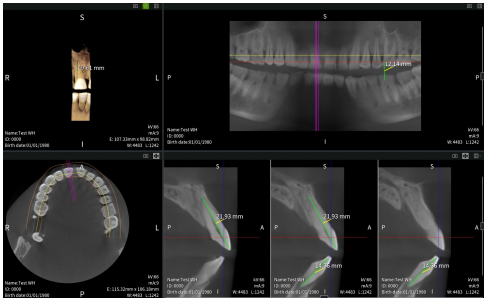
In terms of layout, the main window is structured as a grid, with different amount of cells according to the work mode. Cells have their own options, depending on their functionality, but there are some options in common, as follows:

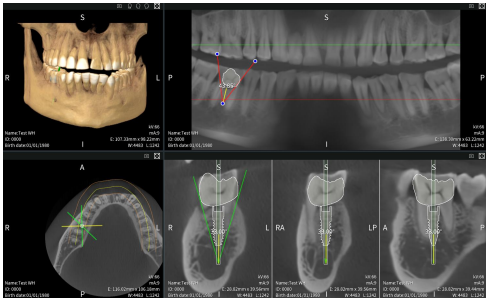
Icon	Function	Description
	**Maximize**	Maximizes the current cell. As a result, the cell covers all of the Main window.
	**Resize**	Returns the cell to it's regular size.
	**Capture View**	Takes a snapshot of the cell current state and saves it as a secondary document. Although not present in MPR mode, it's present in all cells when working in Arch and Implant modes.

E- TOOLBAR

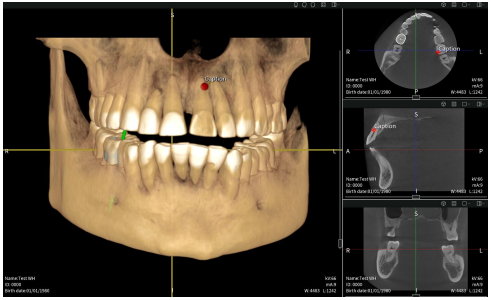
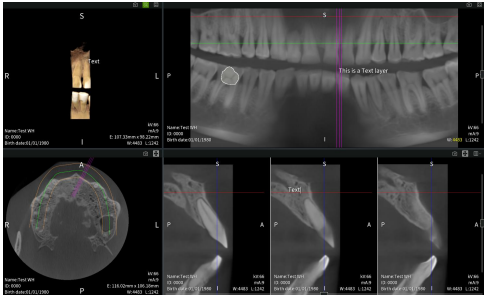
The following tools are common to all three work modes.

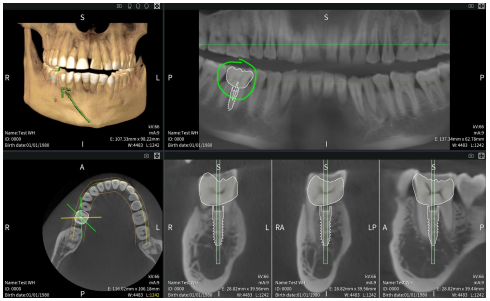
Tool	Example
Picture-in-Picture (PiP)	 *Demonstrative screenshot: PIP in MPR mode*
Zooms in on a specific area of the 3D document.	
How to use the tool: - Click the cell in which you want to zoom in. - Click the Picture-in-Picture (PiP) tool; a zoom area will appear at the center of the image by default. - Right click on a different cell to change the location of the PiP tool. - Deselect the PiP tool to remove the zoom area.	
The zoom area has a standard size and it cannot be modified.	
To move the zoom area, hold down the right mouse button and drag until reaching the desired area. If the cell includes a 2D image, you can edit the local values of the zoom area as follows: - Hold the left mouse button and move the mouse right and left to edit the contrast. - Hold the left mouse button and move the mouse up and down to edit the brightness. - Move the mouse wheel up and down to zoom in/out.	

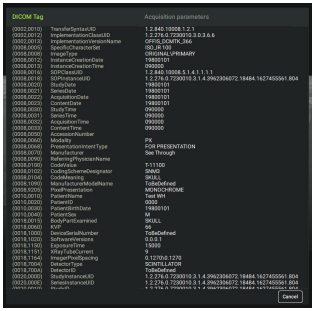
Tool		Example
	**Linear measure ***	 *Demonstrative screenshot: Linear measure in Arch mode*
Makes linear measurements between two points.		
How to use the tool: Click to set the starting point and drag until reaching the end point.		
The line is green colored by default, and includes the measurement attached to the center of the line. You will notice that once you start measuring, the measurement value is automatically attached and updates as you move the mouse around the document to find the correct measurement.		
To edit the measurement, you can click the line itself or the measurement. As you hover over either element, it turns yellow. When selected, the line turns red, and blue dots appear at each end of the line. You can click and drag each blue dot to modify the measurement value and/or ends. You can also click and drag the line itself to change its location. The measurement value can be clicked and dragged to change its location on the document.		

Tool	Example
Angular measure *	 *Demonstrative screenshot: Angular measure in Implant mode*
Measures angles between three points.	
How to use the tool: - Click to set the starting point. - Click again to set the angle vertex. - Click one last time to set the ending point of the second side of the angle.	
The sides of the angle are green colored by default, and includes the angle measurement attached to the vertex. You will notice that once you set the angle vertex, the angle measurement is automatically attached and updates as you move the mouse around the document to find the correct measurement.	
To edit the measurement, you can click the lines of the angle or the measurement. As you hover over either element, it turns yellow. When selected, the lines turn red, and blue dots appear at the vertex and each end of the lines. You can click and drag each blue dot to modify the angle measurement and/or the angle location. You can also click and drag either of the lines to change the measurement location. The angle value can be clicked and dragged to change its location on the document.	

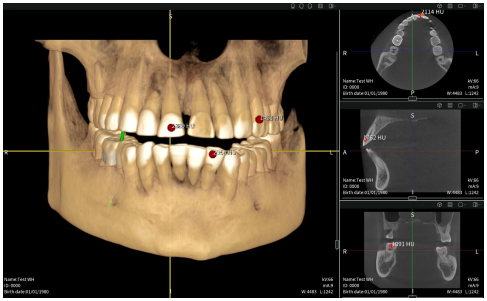
* a dropdown menu is available for accessing the tool.

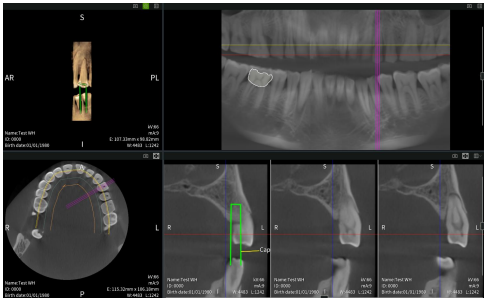
Tool	Example
Marker	 *Demonstrative screenshot: Markers in MPR mode*
Adds a marker in the document.	
How to use the tool: Click on the document where you need a useful marker.	
The marker appears as a small red cross, and includes a caption text attached to it.	
You can click the marker and drag it around the document to relocate it. As you hover over either element, it turns yellow. The caption text can be clicked and dragged as well to change its location on the document. The caption text can be edited by double clicking on it. If no caption is needed, just cancel the text.	
Text	 *Demonstrative screenshot: Text in Arch mode*
Adds a text caption to the document.	
How to use the tool: Click on the document to begin typing. Press **Enter** or click anywhere else on the document to confirm and exit the tool.	
The text appears white by default.	
To edit an existing text, double click on it. While editing, the text is highlighted in red. You can click and drag the text caption to relocate it.	

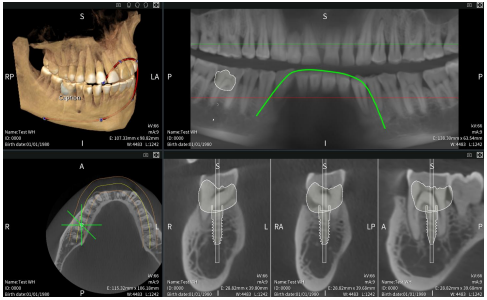
<table>
<tr><th colspan="2">Tool</th><th>Example</th></tr>
<tr><td></td><td>Freehand</td><td rowspan="4"> 
Demonstrative screenshot: Freehand in Implant mode</td></tr>
<tr><td colspan="2">Draws freehand shapes and/or lines.</td></tr>
<tr><td colspan="2">How to use the tool:
Click and drag through the document to draw what you need.</td></tr>
<tr><td colspan="2">The freehand drawing appears in green by default.

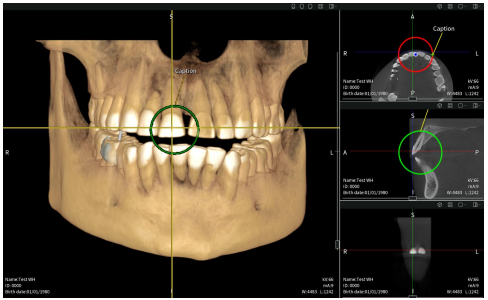
As you hover over the freehand drawing, it turns yellow.
When selected, the line turns red.
You can also click and drag the drawing to change its location.</td></tr>
<tr><td></td><td>Acquisition Parameters</td><td rowspan="2">  </td></tr>
<tr><td colspan="2">Displays the information and acquisition parameters of the DICOM document.

How to use the tool:
Click the tool to visualize the acquisition parameters. Then click Cancel to close the parameters panel.</td></tr>
</table>

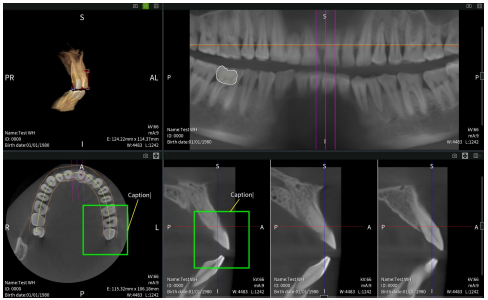
Tool	Example
Density	 *Demonstrative screenshot: Density in MPR mode*
Add a marker that automatically detects the tissue density.	
How to use the tool: Click on the document where you need to find out the tissue density value.	
The density marker appears as a small red cross in 2D cells, and as a red sphere in 3D cells, and includes a value attached to it.	
You can click the density marker and drag it around the document to relocate it. As you hover over either element, it turns yellow. The value text can be clicked and dragged as well to change its location on the document.	
Capture	
Takes a snapshot of the whole document in its current state, including all measurements, captions, and other element added by the user.	
How to use the tool: Click on the tool and it automatically captures the snapshot.	
Note that this tool creates as a result a new document, categorized as a Secondary type document.	

Tool	Example
 **Line shape ***	 *Demonstrative screenshot: Line shape in Arch mode*
Draws a line element with two or multiple vectors.	
How to use the tool: Click to set the starting point and drag until reaching the end point.	
The line is green colored by default, and includes a caption text attached to the starting point.	
To edit the line, you can click the line itself or the caption text. As you hover over either element, it turns yellow. When selected, the line turns red, and blue dots appear at each end of the line. You can click and drag each blue dot to modify the shape of the line. You can also click and drag the line itself to change its location. The caption text can be clicked and dragged to change its location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.	

Tool	Example
Curve shape *	 *Demonstrative screenshot: Curve shape in Implant mode*
Draws a curved line element with two or multiple vectors.	
How to use the tool: - Click to set the starting vector. - As you move the mouse, you will notice the tool creates a slight curve. - Click again to set the second vector; repeat as many times as needed to create the desired curve. - Double click to place the final vector.	
The line is green colored by default, and includes a caption text attached to the starting point.	
To edit the line, you can click the line itself or the caption text. As you hover over either element, it turns yellow. When selected, the line turns red, and blue dots appear at each vector. You can click and drag each blue dot to modify the shape of the line. You can also click and drag the line itself to change its location. The caption text can be clicked and dragged to change its location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.	

Tool		Example
	**Circle shape ***	
Draws a circle shaped element. Creates only the outline with no filling.		
How to use the tool: Click to set the starting point and drag until reaching the desired circle size.		
The shape is green colored by default, and includes a caption text attached to it.		
To edit the circle, you can click the shape itself or the caption text. As you hover over either element, it turns yellow. When selected, the shape turns red, a blue dot appears at its center, and a green cross appears on the circumference. You can click and drag the green cross to modify the size of the circle. You can also click and drag the circle or the blue dot to change the location of the shape. The caption text can be clicked and dragged to change its location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.		

Demonstrative screenshot: Density in MPR mode

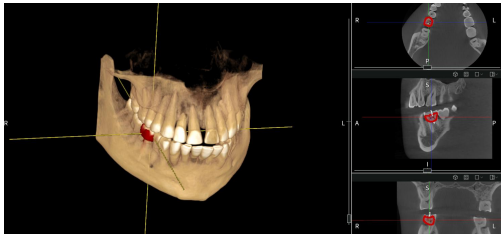
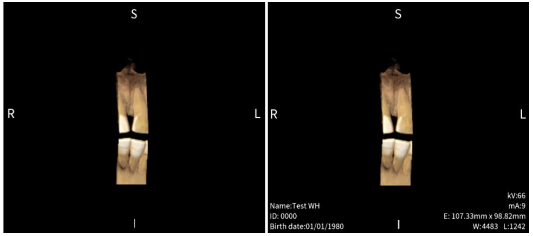
Tool		Example
	**Rectangle shape** *	 *Demonstrative screenshot: Text in Arch mode*
Draws a rectangle shaped element. Creates only the outline with no filling.		
How to use the tool: Click to set the starting point and drag until reaching the desired rectangle shape and size.		
The shape is green colored by default, and includes a caption text attached to it.		
To edit the rectangle, you can click the shape itself or the caption text. As you hover over either element, it turns yellow. When selected, the shape turns red, and blue squares appear at each of its vectors. You can click and drag the blue squares to modify the size of the rectangle. You can also click and drag the rectangle itself change the location of the shape. The caption text can be clicked and dragged to change its location on the document. The caption text can also be edited by double clicking on it. If no caption is needed, just cancel the text.		

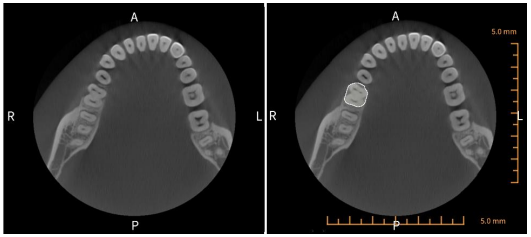
* a dropdown menu is available for accessing the tool

F - WORK PANELS

REFERENCES

The following References options are available in all work modes:

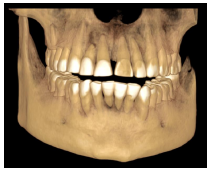
<table>
<tr><th colspan="2">Option</th><th>Example</th></tr>
<tr><td>  </td><td>Show/Hide Implant</td><td rowspan="2"> 
Demonstrative screenshot: implant visualization in MPR mode</td></tr>
<tr><td colspan="2">Shows or hides all implants, if any is present in the document.
If no implants have been added yet, refer to "Implant mode" on page 104.</td></tr>
<tr><td>  </td><td>Show/Hide DICOM data</td><td rowspan="2"> 
Demonstrative screenshot: DICOM data in Arch mode</td></tr>
<tr><td colspan="2">Shows or hides the DICOM information of each cell.
This details are displayed at the bottom left and right of the cell, and includes file name, ID, patient birthdate, exam information, and document information.</td></tr>
</table>

Option		Example
	**Show/Hide Rulers**	 *Demonstrative screenshot: rulers visualization in Implant mode*
Shows or hides the ruler references from each cell. This feature affects only 2D images.		
	**Show/Hide Lines**	 *Demonstrative screenshot: lines in MPR mode*
Shows or hides the axes lines from each cell. This feature affects only 2D images.		

3D STYLES

Rendering Styles

Modify how the 3D image is rendered. The following Rendering styles are available in all work modes:

		
Smooth: photorealistic visualization with clean surfaces.	**Cinematic:** highly photorealistic representation with complex lighting.	**Glass:** stylized render that allows for transparent visualization of the image.

Icon	Setting	Description
	Transparency	Modify the transparency of the image by moving the cursor in a range from 0 to 1. The unit of the scale is 0.1.
	Opacity	Modify the opacity of the image by moving the cursor in a range from 0 to 100. The unit of the scale is 0.1.

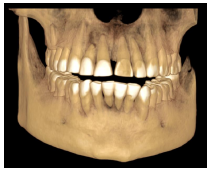
Light Settings

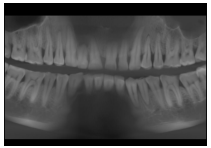
Icon	Setting	Description
	Vertical Light	Modify the vertical position of the light source in a range from 0 to 100. The unit of the scale is 1.
	Horizontal Light	Modify the horizontal position of the light source in a range from 0 to 100. The unit of the scale is 1.
	Brightness	Modify the brightness of the light source in a range from 0 to 2. The unit of the scale is 1.

PANO STYLES

Modify how the Pano cell renders the document image.

Note: This panel isn't available in MPR mode.

		
Smooth: photorealistic visualization with clean surfaces.	**Cinematic:** highly photorealistic representation with complex lighting.	**Glass:** stylized render that allows for transparent visualization of the image.

		
Maximum: high quality 2D render with high ROI.	**Pano:** regular pano render with medium ROI.	**Pano slim:** regular pano render with low ROI.

Icon	Setting	Description
	Transparency	Modify the transparency of the image by moving the cursor in a range from 0 to 1. The unit of the scale is 0.1. **Note:** Only available for 3D renders of the Pano image (Smooth, Cinematic, Glass).
	Region of Interest (ROI)	It is possible to increase or decrease the ROI, respectively increasing or decreasing the thickness of the panoramic image. Modify the horizontal position of the light source in a range from 0 to 100. The unit of the scale is 1.
	Opacity	Modify the opacity of the image by moving the cursor in a range from 0 to 1. The unit of the scale is 0.1.

2D STYLE

Image Settings

Icon	Setting	Description
	Contrast	Modify the contrast of the image by moving the cursor in a range from 0 to 100. The unit of the scale is 1.
	Brightness	Modify the brightness of the image by moving the cursor in a range from 0 to 100. The unit of the scale is 0.1.
	Sharpness	Modify the sharpness of the image by moving the cursor in a range from 0 to 100. The unit of the scale is 1.

THICKNESS SETTINGS

Modify the width of the image layer or focal trough.

Note: This panel isn't available in Implant mode.

Icon	Setting	Description
	Cross-section distance	Modify the range of the thickness by moving the cursor in a range from 1 to 20. The unit of the scale is 1.
	Thickness Range	Modify the layer thickness of the image moving by the cursor in a range from 0.00 to 5.00. The unit of the scale is 0.1.

LAYERS

Layers are individual elements that can be manipulated independently. In this case, each layer represents an element that the user has added to the document via the various tools exposed previously in the Toolbar section (view "Layers" on page 64).

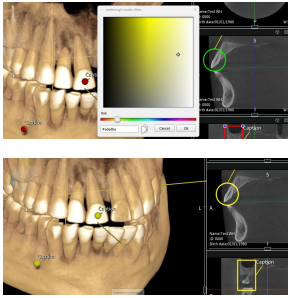
Element type

Icon	Description	Icon	Description
	Linear measure type layer		Angular measure type layer
	Marker type layer		Note type layer
	Freehand layer type		Density type layer
	Line type		Curve type layer
	Circle type layer		Rectangle type layer
	Implant type layer		Nerve type layer. Only available if AI Segmentation is enabled (view "MPR mode" on the next page).

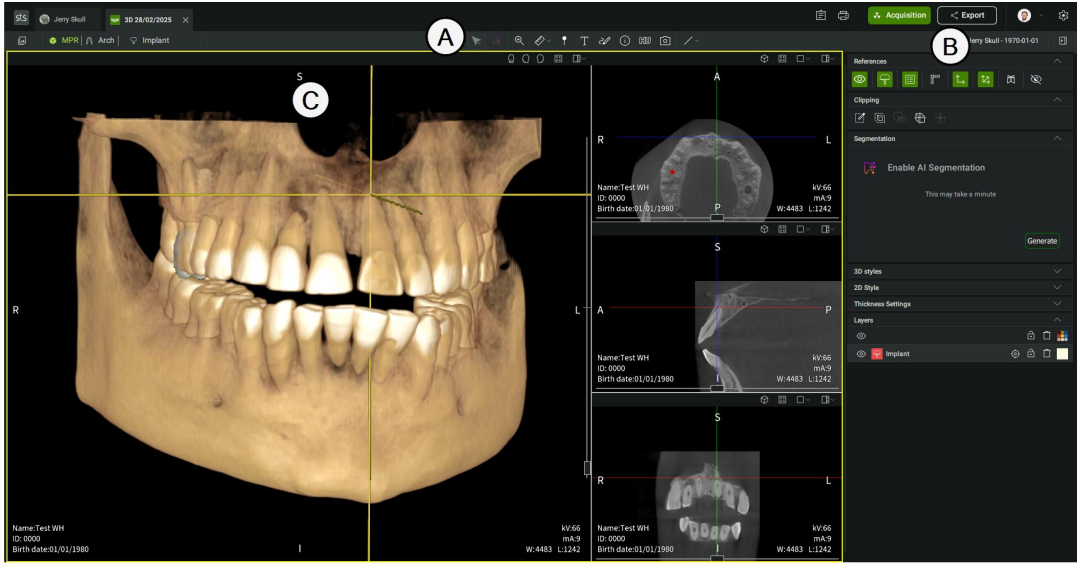
Actions

Icon	Description	Icon	Description
	Show layer		Unlock layer
	Hide layer		Go-to layer
	Lock layer		Delete layer

Color picker

Tool	Example
Color	
Changes the color of all elements in the document.	
How to use the tool: Click the tool and then choose a color in the color picker panel.	
Alternatively, you can change the color of each layer individually. Click on the color box corresponding to an individual layer, open the color picker and choose the desired color.	

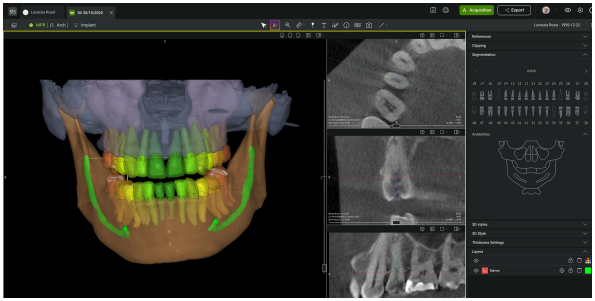
MPR mode



Part	Description
A	MPR Toolbar
B	MPR Work panels
C	MPR Main window

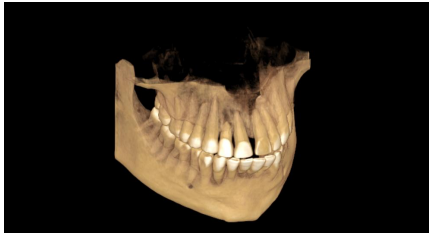
A - MPR TOOLBAR

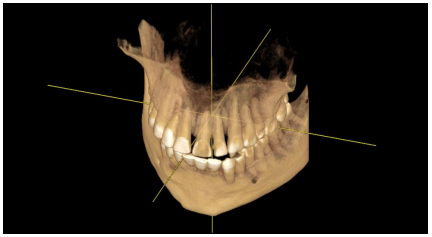
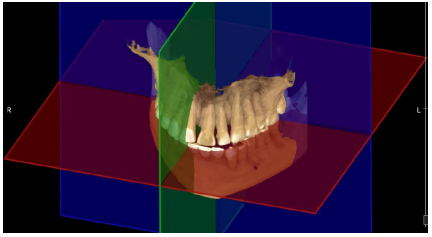
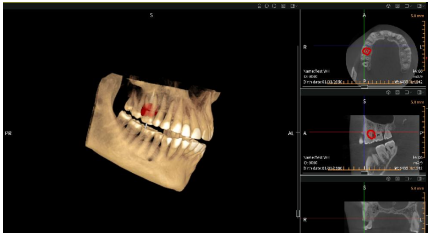
The Multi-plannar reconstruction mode has its own tools available in the toolbar.

Tool		Example
	**AI-pointer**	
Allows to interact with the elements created by the AI Segmentation feature (this is explained in "AI Segmentation" on page 89).		
	**Normal pointer**	
Leaves AI-pointer mode and returns to the normal pointer, allowing for regular interaction with the document.		

B - MPR WORK PANELS

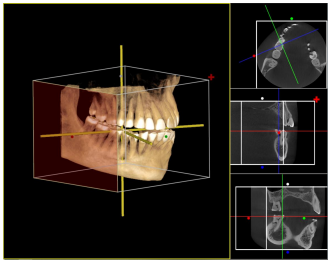
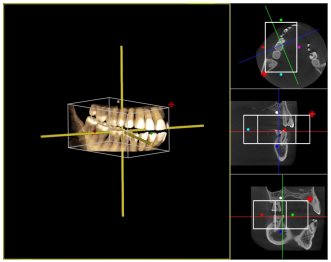
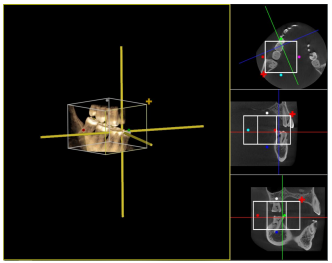
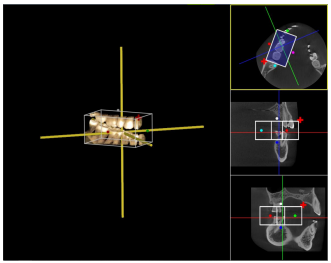
References

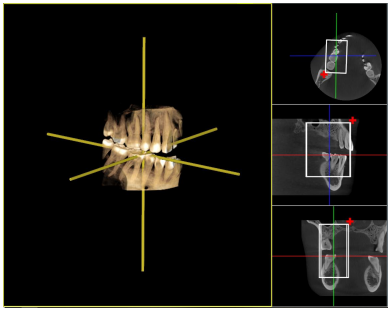
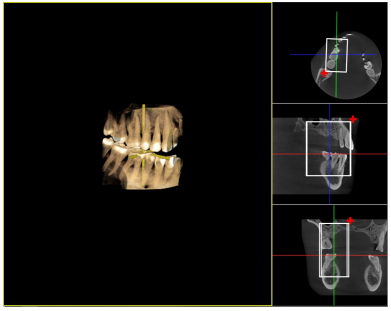
Option		Example
	**Show/Hide Graphics**	
Shows or hides all graphic references from the document.		

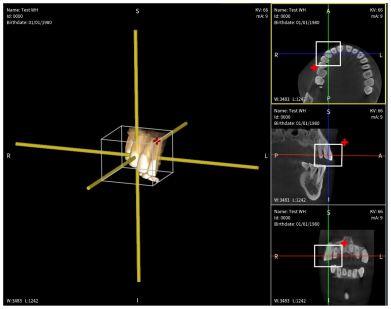
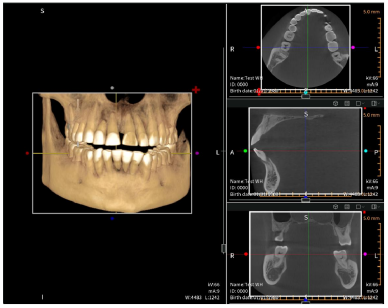
Option		Example
	**Show/Hide 3D axes**	
Sets the document to show each axis as a yellow line.		
	**Show/Hide 3D axes**	
Sets the document to replace each axis with a color coded plane. The axial (RL/AP) plane is red colored. The coronal (RL/SI) plane is blue colored. the sagittal (AP/SI) plane is green colored.		
	**Show/Hide 3D axes**	
Shows or hides axis or planes visualization from the document.		

Clipping

Clipping allows to modify or relocate the Region of Interest (ROI) in the document.

Tool		Examples
	**Define clipping area**	   
When toggled, clipping tools appear in each cell, either the 3D view or the reference views.		
ROI size can be edited by clicking and dragging the red cross located in one of the area corners. The cross turns yellow when modification is ongoing. While using this tool, each dimension of the clipping area is modified proportionally. Each ROI volume can also be increased or decreased by clicking and dragging the colored dots located on each ROI side.		
Move around in each view ROI by clicking and dragging them in the desired position.		

Option		Example
	**Toggle clipping area**	
Enable or disable the ROI clipping area.		
	**Toggle graphics clipping**	
Hide all graphic elements located outside of the ROI.		

Option		Example
	**Link clipping to reference axes**	
Pick a point in one axis for the ROI to relocate directly there.		
	**Reset clipping area**	
Reset the initial ROI size.		

AI Segmentation

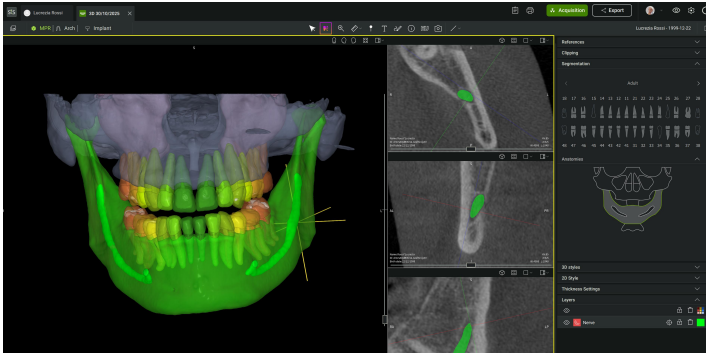
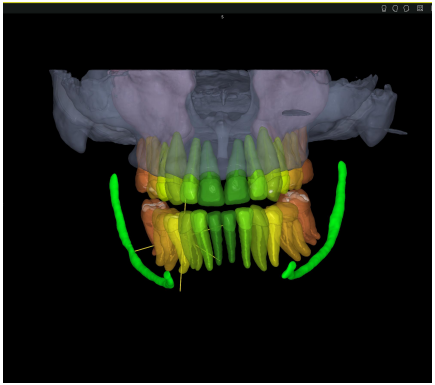
To enable the AI function, click **Generate**.

Note: keep in mind that the AI module isn't available by default and can be enabled and disabled depending on whether the user wants to use it or not.

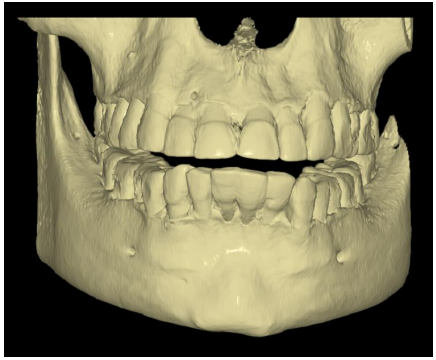
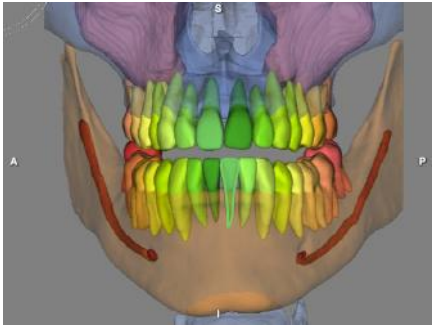
With this tool enabled, individual segmentation of each teeth is generated, each with its own anatomy and shape.

A nerve type layer is generated, allowing for interaction and visualization of the internal lower jaw nerve.

CAUTION: if the acquired or reconstructed image provided as input to the AI is inaccurate or contains errors, the resulting segmentation will also be unreliable.

	
Hovering over an individual teeth or a anatomical part in the AI segmentation menu highlights that part in the 3D view.	You can toggle on/off an anatomical part by clicking it on the AI segmentation panel.

MPR 3D Styles

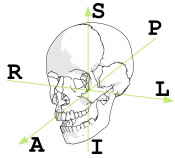
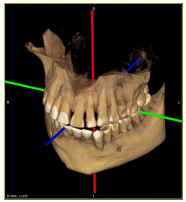
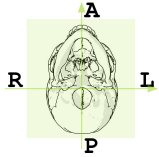
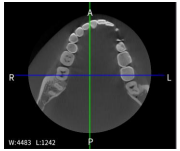
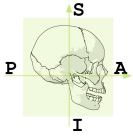
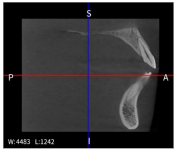
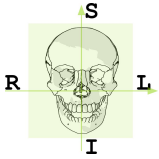
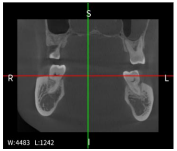
		
Maximum: grayscale visualization with clean surfaces.	**ISO surface:** three-dmensional analog isolines	**AI:** go to AI visualizatoin; only available if AI Segmentation has been activated.

C - MPR MAIN WINDOW

The main window in MPR mode displays a grid with four cells, as follows:

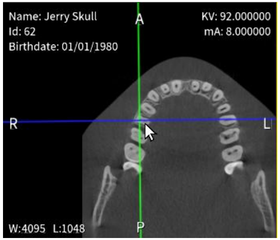
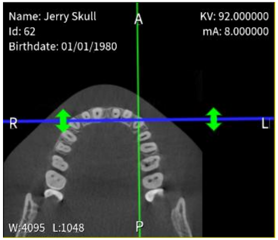
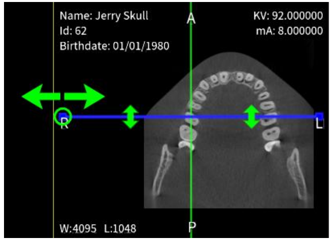
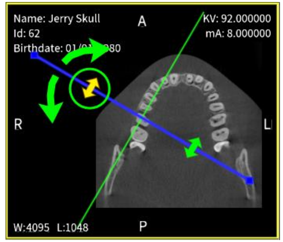
- One with a 3D representation of the document.
- Three 2D reference views, as follows:
  - axial view,
  - sagittal view,
  - coronal view.

All cells include reference labels reporting directions, in order to identify the orientation of the document.

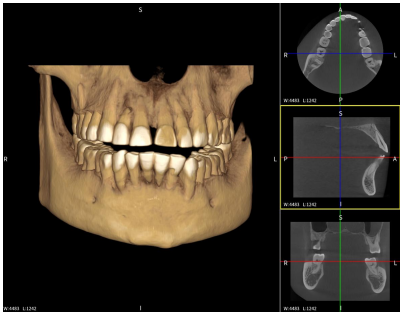
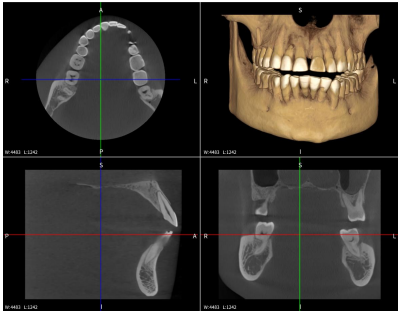
Reference	Visualization	View Type	Directions	Axis
		**3D view**	**SI**: superior - inferior	Longitudinal
			RL: right - left	Transversal
			AP: antero-posterior	Sagittal
		**Axial/Transversal view**	**RL**: right - left	Transversal
			AP: antero-posterior	Sagittal
		**Sagittal view**	**SI**: superior - inferior	Longitudinal
			AP: antero-posterior	Sagittal
		**Coronal/Frontal view**	**SI**: superior - inferior	Longitudinal
			RL: right - left	Transversal

2D Reference views

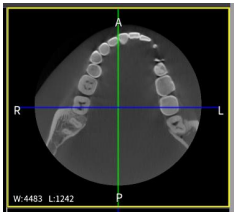
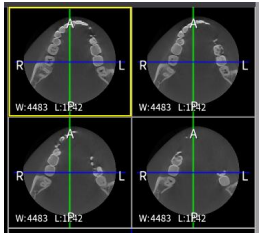
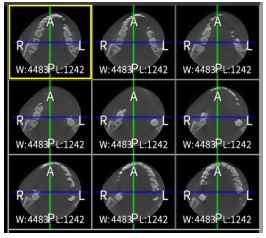
In each 2D reference view, axis lines are displayed if the Show/Hide lines reference is enabled. Within each cell, it is possible to work with the axis lines, as follows:

<table>
<tr>
<td>  </td>
<td>  </td>
<td>  </td>
<td>  </td>
</tr>
<tr>
<td>Reposition the axes intersection</td>
<td>Relocate one axis in the plane</td>
<td>Reduce or increase the length of one axis</td>
<td>Rotate an axis</td>
</tr>
<tr>
<td>Left click on target area in the document to reposition the intersection.
All other views are updated automatically.</td>
<td>When hovering over any axis, the line will thicken and two green arrows are displayed.
Click and drag the axis to relocate, avoiding to click the arrows.
Notice that the views corresponding to the axis are automatically updated.</td>
<td>Hover over an axis to interact with it.
Notice the small squares that appear at each end of the axis.
Click and drag one of them to reduce or increase the axis.
You will notice that the view corresponding to said axis will automatically zoom in/out.</td>
<td>Hover over an axis to interact with it.
Click and drag one of the arrows to rotate the chosen axis.
All other views are updated automatically.</td>
</tr>
</table>

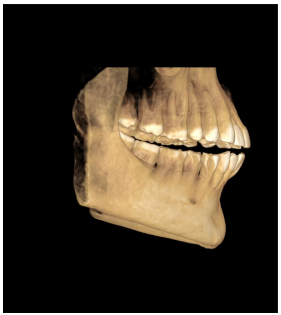
Layout

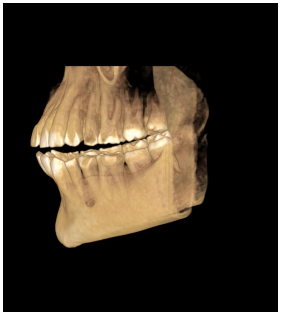
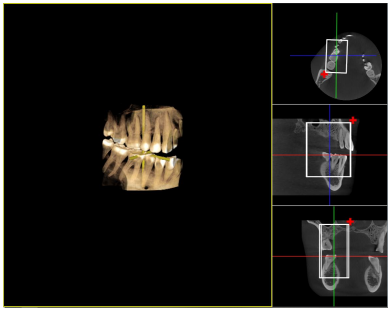
Option		Example
	**Main 3D view with 2D gallery**	
Focuses the 3D view, with the three 2D reference views to the right.		
	**Full Grid view**	
Divides the main window in four equal cells, each one containing a specific view.		

2D reference cells can also be split into smaller cells, displaying parallel views of the same plane:

Option		Example
	**Single view**	
One specific reference view is selected.		
	**Four cells view**	
Visualization of four cutting planes parallel to a specific view previously selected.		
	**Nine cells view**	
Visualization of nine cutting planes parallel to a specific view previously selected.		

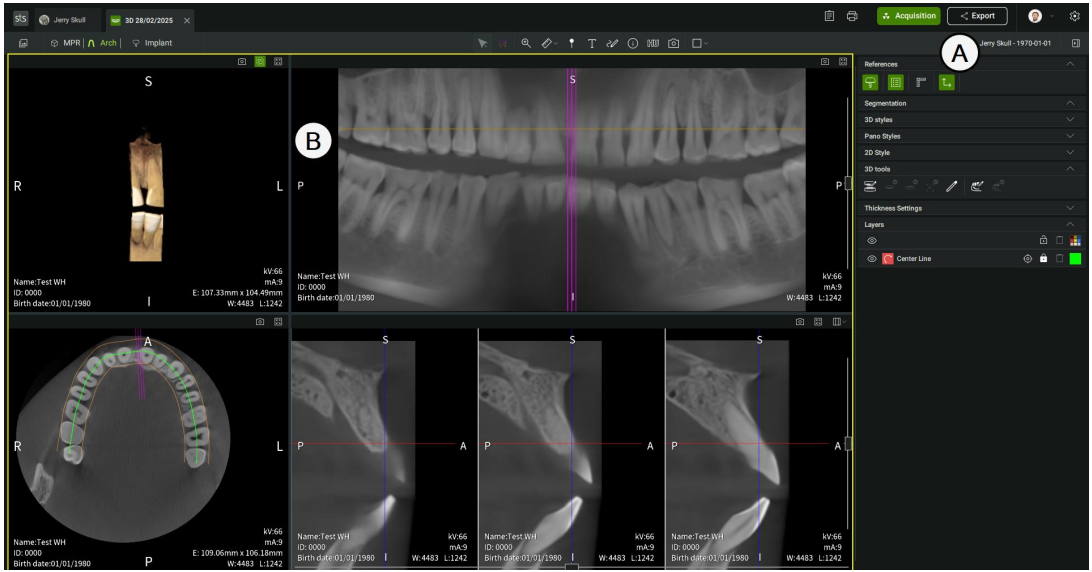
Finally, the main window includes options to reset each cell to a preset view:

<table>
<tr><th colspan="2">Option</th><th>Example</th></tr>
<tr><td></td><td>Coronal view</td><td rowspan="2">  </td></tr>
<tr><td colspan="2">Shows the Coronal/Frontal view.
This option only applies to the 3D representation of the document.</td></tr>
<tr><td></td><td>Right view</td><td rowspan="2">  </td></tr>
<tr><td colspan="2">Shows the Sagittal view.
This option only applies to the 3D representation of the document.</td></tr>
</table>

Option		Example
	**Left view**	
Shows the Sagittal view. This option only applies to the 3D representation of the document.		
	**Reset view**	
Resets the document to its initial position. This option only can be found in any of the 2D reference cells, but it resets all cells.		

Arch mode

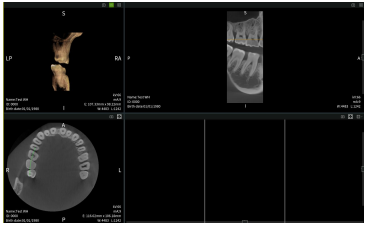
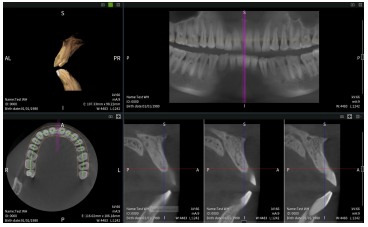
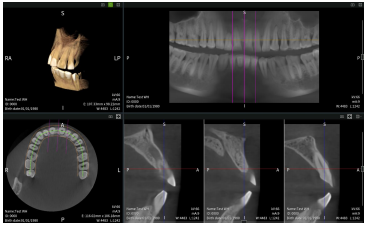
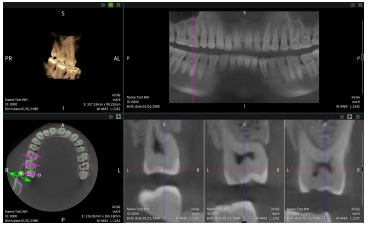
Reconstruct a panoramic document starting from the 3D document.

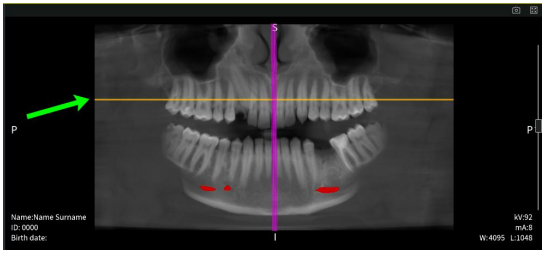
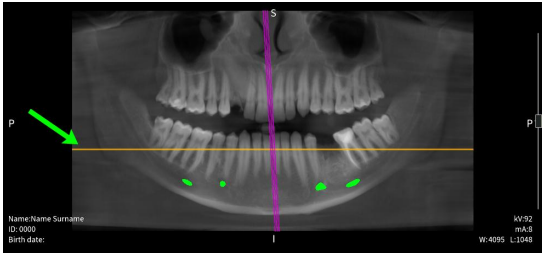


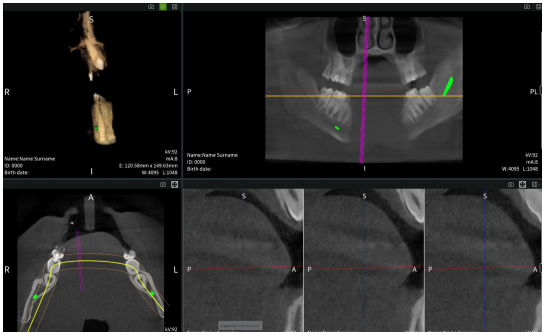
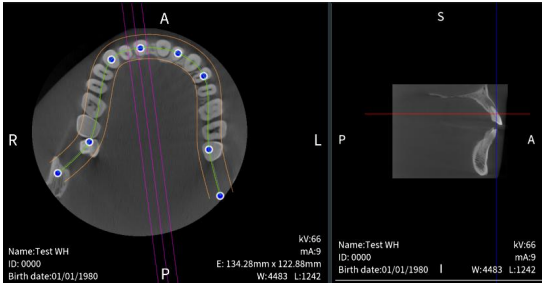
Part	Description
A	Arch Work panels
B	Arch Main window

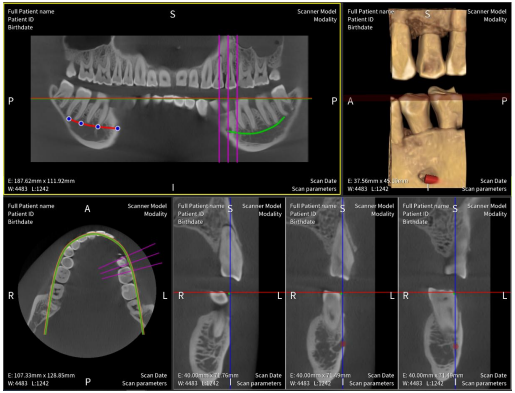
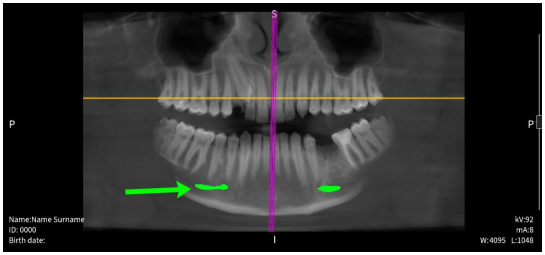
A - ARCH WORK PANELS

3D Tools

Tool		Examples
	**Define centerline**	   
Draw the dental arch trajectory (total or partial) on the axial view. Click to set the starting vector. Choose as many vectors as you want. Double click to place the final vector.		
Vector after vector, the panoramic image is reconstructed in the panoramic view. Three cross-sections appear as violet lines once the final vector is placed, and the ROI is displayed as an orange line.		
Click and drag the violet lines in the axial view to relocate the cross-sections along the panoramic trajectory. Alternatively, just click a point in the trajectory and the cross-sections will automatically move there. To zoom in/out the cross-sections, hover over a violet line, and a blue rectangle will appear at each end of the line. Click and drag the rectangle to adjust the zoom.		

Option		Example
	**Define upper centerline with AI**	
Only with AI function enabled in the MPR mode, define the superior centerline automatically.		
	**Define lower centerline with AI**	
Only with AI function enabled in the MPR mode, define the inferior centerline automatically.		

Option		Example
	**Define centerline at actual height**	
Only with AI function enabled in the MPR mode, by moving up or down along the axial plane with the mouse, this function allows you to redefine a centerline that is lower or higher than the previously defined centerline position. The centerline position is reworked based on the axial position chosen for the arch.		
	**Edit centerline**	
Move the vectors used to create the trajectory arch. When hovering over the center-line, vectors appear as blue dots. Click and drag a vector to modify the trajectory arch.		

Option		Examples
	**Draw mandibular nerve**	
Mark the mandibular nerve on the panoramic reconstruction. To draw the nerve, pin down a first landmark and then all the necessary landmarks to follow the nerve trajectory. After finishing, double click to confirm.		
To edit the nerve, pass with the mouse on it and it will turn yellow with blue dots, drag and drop the dots for the editing, the nerve trajectory appears red when the editing is ongoing. If necessary, use the cross-sections to edit the mandibular nerve trajectory. Navigate along each cross-section and move the blue dots (already existing) or pass with the mouse on the red line and click on the light blue cross to add a new trajectory dot.		
Once added the nerve, it will be visible (in red) in the cross-sections and in the 3D view.		
	**Draw mandibular nerve with AI**	
Only with AI function enabled in the MPR mode, draw the mandibular nerve automatically.		

B - ARCH MAIN WINDOW

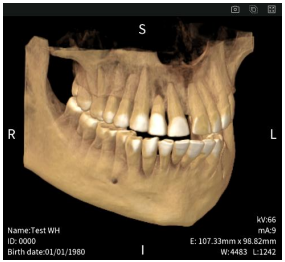
The main window in Arch mode displays a grid with four cells, as follows:

- To the top left, a cell with a 3D representation of the document.
- To the bottom left, a cell with the axial view.
- To the top right, a wide cell with the panoramic view.
- To the bottom right, a cell split in three by default, each including a sagittal view corresponding to a cross-section.

All cells include reference labels reporting directions, in order to identify the orientation of the document, as explained in "Reference" on page 91.

Layout

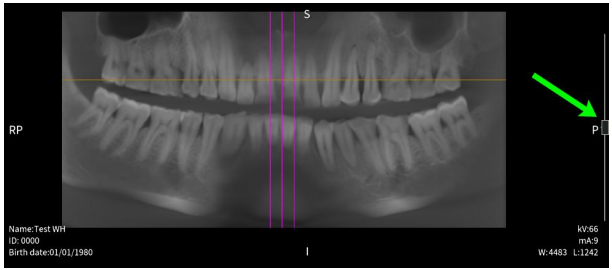
Of all the cells in Arch mode, The 3D representation cell is the only that includes the option for enabling or disabling clipping.

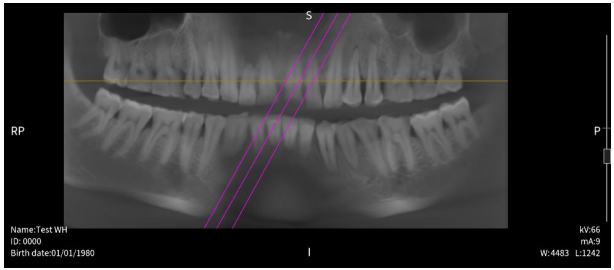
Option		Examples
	**Enable Clipping**	 
Toggle to display the full 3D scan, or display a clipped area in accordance to the ROI contained within the cross-sections.		

In turn, the cell that includes the sagittal views of the document has an option to split the view in different number of cells, resulting in a different amount of cross-sections.

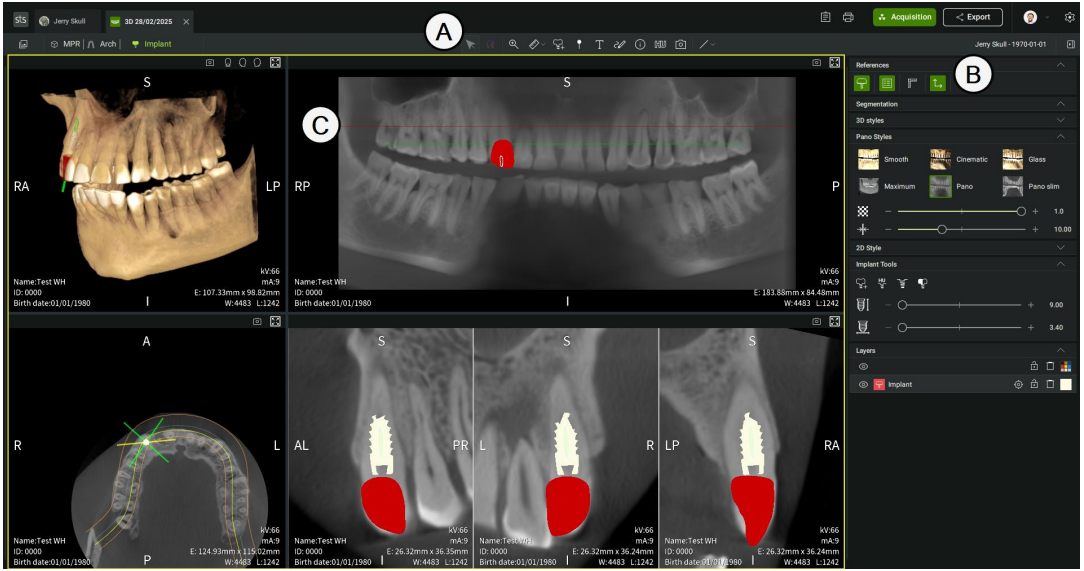
Icon	Description	Icon	Description
	Show one cross-section		Show four cross-sections
	Show two cross-sections		Show eight cross-sections
	Show three cross-sections; this is the default view for the Arch mode.		Show sixteen cross-sections

The cell with the Panoramic view and the cell with the sagittal views include a slider to the right that allows to rotate the cross-sections.





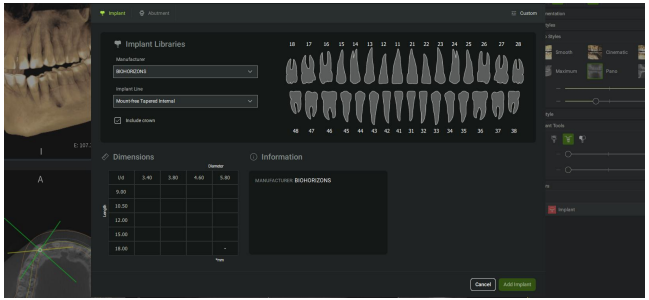
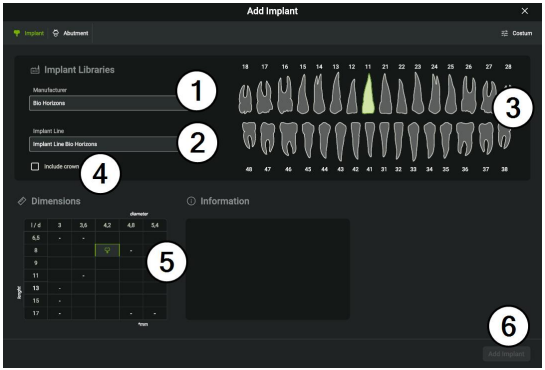
Implant mode

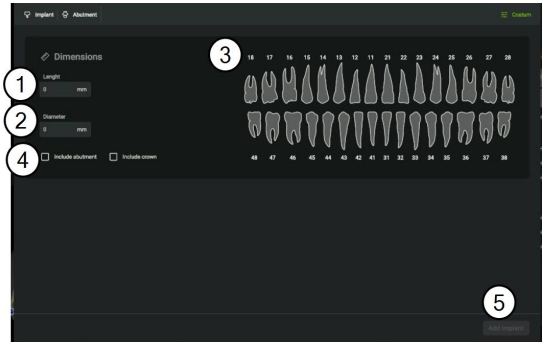
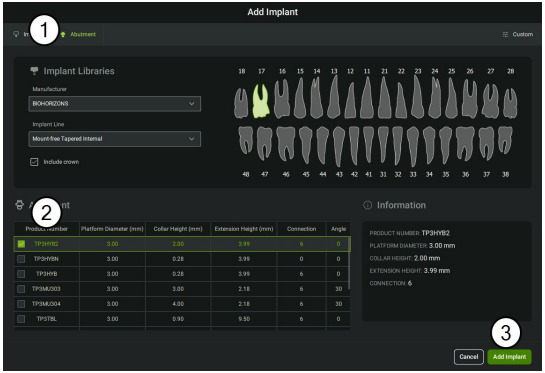


Part	Description
A	Implant Toolbar
B	Implant Work panels
C	Implant Main window

A - IMPLANT TOOLBAR

The Implant mode has its own tool available in the toolbar.

<table>
<tr><th colspan="2">Tool</th><th>Example</th></tr>
<tr><td>  </td><td>Add Implant</td><td rowspan="2">  </td></tr>
<tr><td colspan="2">Click to add a new implant to the study.
Once an implant has been added, it is also visible in MPR and Arch modes.
To learn how to move and edit the implant, refer to "C - Implant Main window" on page 107
To remove an implant , locate the corresponding layer in the Layers panel and click on  .</td></tr>
<tr><td colspan="2">1. Choose the manufacturer.
2. Choose the implant line.
3. Select the tooth that needs the implant.
4. If necessary, check the box to include a crown.
5. Set the implant size: diameter and length.
6. Click on Add implant to confirm.</td><td> 
</td></tr>
</table>

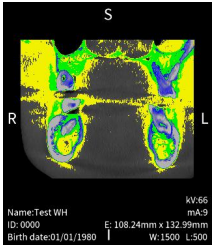
Tool		Example
	Add a custom Implant	
1. Set the implant length. 2. Set the implant diameter. 3. Choose the tooth. 4. Check the box to include a crown or abutment. 5. Click on **Add implant** to confirm.		
	Add an abutment	
To add an abutment, follow the steps explained in "1. Choose the manufacturer." on the previous page. Then, before clicking on **Add implant**, proceed as follows: 1. Click **Abutment** to change to the abutment tab. 2. In the provided list **(B)**, select the abutment. 3. Click on **Add implant** to confirm.		

B - Implant Work panels

Implant tools

Icon	Description	Icon	Description
	**Add an implant**: it's also possible to add an implant from the work panel to the right. Click to add a new implant to the study.		**Hide/show crowns**: hides or shows the implant crowns.
	**Switch view**: shows the bone quality as a heat map, including tissue density.		**Show filled/outlined**: shows implants as a filled image or an outlined image.
	**Implant length:** adjusts the length of the implant screw. The scale varies according to he implant Manufacturer and Implant Line.		**Implant width:** adjusts the width of the implant screw. The scale varies according to he implant Manufacturer and Implant Line.

The heat map represents the following values:

	D4	Fine trabecular	
	D3	Porous cortical (thin) and fine trabecular	
	D2	Porous cortical and course trabecular	
	D1	Dense cortical bone	

C - IMPLANT MAIN WINDOW

The main window in Arch mode displays a grid with four cells, as follows:

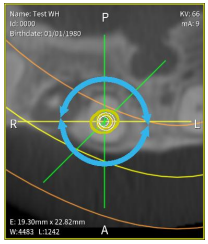
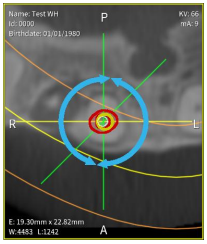
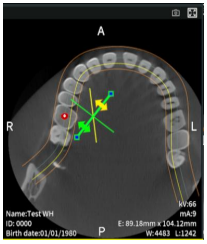
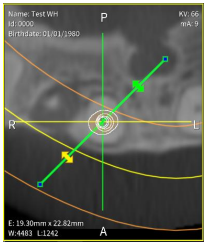
- To the top left, a cell with a 3D representation of the document.
- To the bottom left, a cell with the axial view.
- To the top right, a wide cell with the panoramic view.
- To the bottom right, a cell split in three, each including a cell that displays the axial projections corresponding to the implant.

All cells include reference labels reporting directions, in order to identify the orientation of the document, as explained in "Reference" on page 91.

Layout

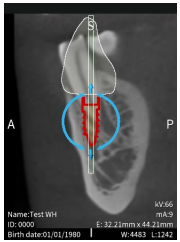
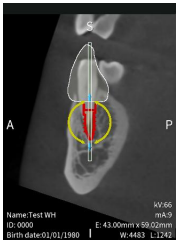
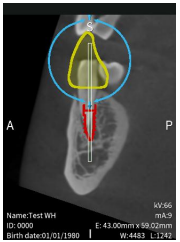
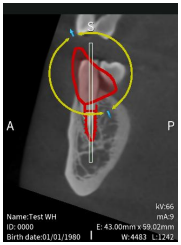
Of all the cells in Arch mode, The 3D representation cell is the only that includes options to reset each cell to a preset view, as explained in "Layout " on page 93.

The axial view displays the implant with the axial projections after it has been added to the document. You can interact with implants as follows:

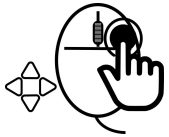
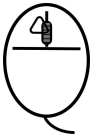
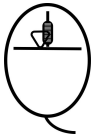
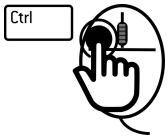
			
Relocate the implant	**Rotate the implant**	**Relocate an axis**	**Rotate an axis**
The implant turns yellow when hovering over it. Once selected, the implant turns red. Drag it around the document to relocate it.	Once selected, a blue circle with arrowheads appears around the implant. The circle turns yellow when hovering over it. Use the circle to rotate the implant.	Click and drag any projection axis to translate it.	Green arrows appear next to each axis when hovering over them. Click and drag an arrow to rotate the axis.

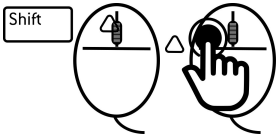
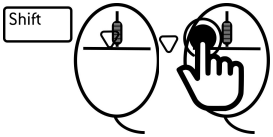
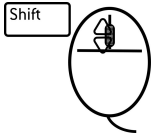
Note: if many implants are introduced in the document, select their corresponding layer in the Layers tab to interact with them in the axial view.

The cells with the axial projections allow for a more precise positioning and rotation of the implant.

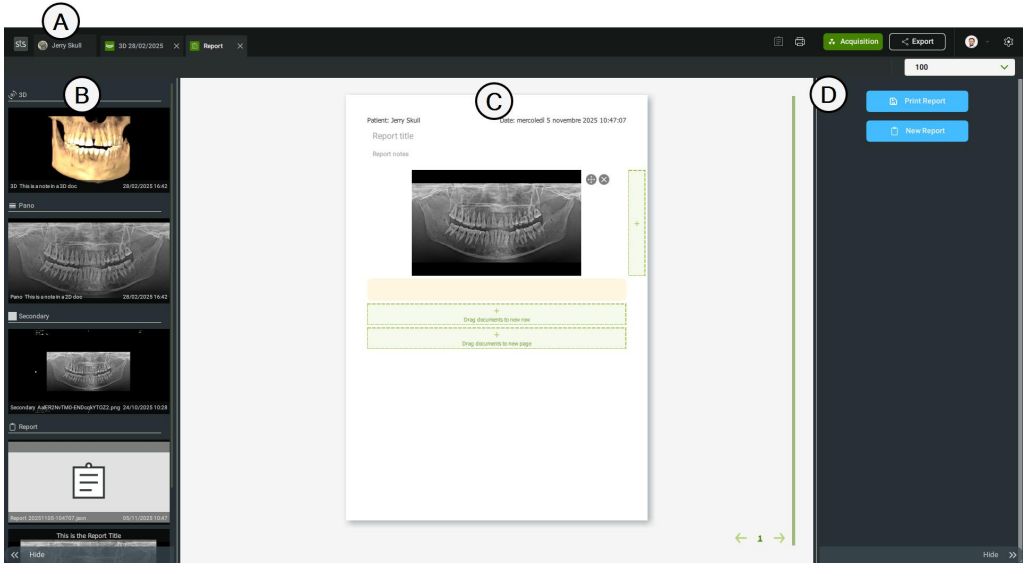
			
Relocate the Implant	**Rotate the Implant**	**Relocate the Crown**	**Rotate the crown**
When hovering over the implant, it turns yellow. When clicking the implant, it turns red, blue arrows appear at each end of the implant, and blue curved lines appear next to it. To relocate the implant, you can either click and drag it, or click and drag the blue arrows.	Click the implant to view the curved blue lines next to it. When hovering over the blue lines, they turn yellow. Click and drag either line to rotate the implant.	Alternatively, you can move the crown alone. When hovering over the crown, it turns yellow. When clicking the crown, it turns red, blue arrows appear at each end of he crown, and blue curved lines appear next to it. You can relocate the crown by clicking and dragging it or its blue arrows, but you can only move the crown in the vertical axis of the implant.	Click the crown to view the curved blue lines next to it. When hovering over the blue lines, they turn yellow. Click and drag either line to rotate the crown.

Mouse commands

Command/effect	Pano	3D	Command/effect	Pano	3D	Command/effect	Pano	3D
Move around the document by right clicking and dragging			Zoom in			Zoom out		
	✓	✓		✓	✓		✓	✓
Local zoom in			Increase the value level			Decrease the value level		
	✓	✓		✓			✓	
Increase the window level			Decrease the window level			3D rotation		
	✓			✓				✓

Increase the value level		Decrease the value level		Increase the window level	
	✓		✓		✓
Decrease the window level		**Move upwards along the axis perpendicular to the plane (only MPR views)**		**Move downwards along the axis perpendicular to the plane (only MPR views)**	
	✓		✓		✓
Move the cross-sections along the center-line (only arch mode - axial view)		**Move the cross-sections along the center-line (only arch mode - cross-sections)**			
	✓		✓		

Report module



Part	Description
A	Patient name
B	Patient file
C	Report creation
D	Report tools

A - PATIENT NAME

The patient's name and profile picture, if any, are always visible in the top left.

CAUTION: It is important to check the correspondence between the patient and the scheduled exam to avoid overexposure of the patient.

B - PATIENT FILE GALLERY

All the patient's studies and documents can be previewed to the right.

Documents are ordered according to the grouping selection chosen in the Patient Studies screen (refer to "C - Group by" on page 40). At the same time, documents are ordered by date.

C - REPORT CREATION

In the center of the report module you will find the report creation tool itself.

Drag and drop patient documents from the Patient file gallery in box located in the center of the page for creating the report module with all the comments and measurements.

- It isn't possible to add 3D documents to the report. To do so, it's necessary to first take a snapshot of the 3D document.
- At the same time, it isn't possible to add other reports within a report.

The yellow box bellow each study allows the user to add notes.

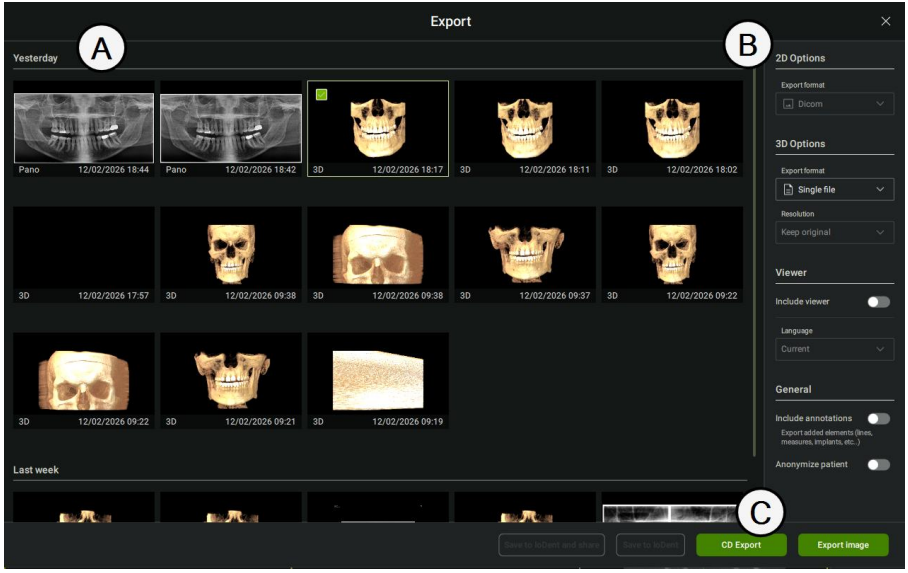
All modifications done to the report are autosaved.

D - REPORT TOOLS

	Change the zoom level of the report.
 **Print Report**	Print the current report.
 **New Report**	Create a new report from scratch.

You can click on HIDE to collapse the tools panel. Alternatively, click on TOOLS to show the panel once again.

Export module



Part	Description
A	Patient studies file
B	Export functions
C	Export result

A - PATIENT STUDIES FILE

The Export module includes a gallery of all the patient studies.

To begin exporting, select one or more study by clicking on them.

A study is selected when a green check box appears at the top left of the study miniature, and its border turns green.

B - EXPORT FUNCTIONS

2D Options

Only available for 2D documents and reports.

- **Export format**: choose between Dicom, PNG, or JPG as export options.

3D Options

Only available for 3D documents.

- **Export format**: choose between Multi frame and Single frame.
- **Resolution**: select the resolution for the resulting export.

Viewer

Available for all document types.

- **Include Viewer**: toggle to export a file that emulates seethrough studio but only for visualization purposes.
- **Language**: select the language for the Viewer among all available languages, or simply the current preset language. You can change the default language as explained in seethrough studio"seethrough studio Settings" on page 31.

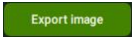
General

Available for all document types.

- **Include annotations**: toggle to include added elements such as implants, shapes, markers, etc, to the resulting export.

C - EXPORT RESULT

Choose where the resulting export will be stored.

 **Send to IoDent**	Stores the exported file in IoDent servers.
 **Export Image**	Stores the exported file locally.
 **CD Export**	This functionality allows the user to store a DICOM test in a CD unit. **Note**: the feature requires a CD Burner capable of monitoring the configured directory, where the DICOM files are stored together with the viewer as configured by the user.

Power the unit OFF

POWER THE WORKSTATION OFF

1. Save all the necessary data.
2. Close the program.
3. Switch OFF the workstation.

Disposal

CONTENTS

This section deals with the following subjects:

Data Deletion Responsibility Disclaimer

Before disposing of, decommissioning, or transferring ownership of the device or system on which this software is installed, it is the sole responsibility of the user to ensure that all sensitive and personal data stored within the software are permanently deleted.

The manufacturer is not liable for any data breaches or unauthorized access resulting from failure to perform this action.

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In memory of Simona, whose work and dedication were essential to the development of this product.

Thanks Simona

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DID-200
Instructions for Use
ENG
Rev01
09/02/2026
Subject to changes

Type: DID-200

Valid edition of the Instructions for Use: Rev01 of 09/02/2026

If you do not have this edition, you can obtain it free of charge:

- At the www.wh.com website.
- By calling up the phone number of your authorized W&H service partners, see "Authorized W&H service partners" on page 117
- By scanning the following 2D code