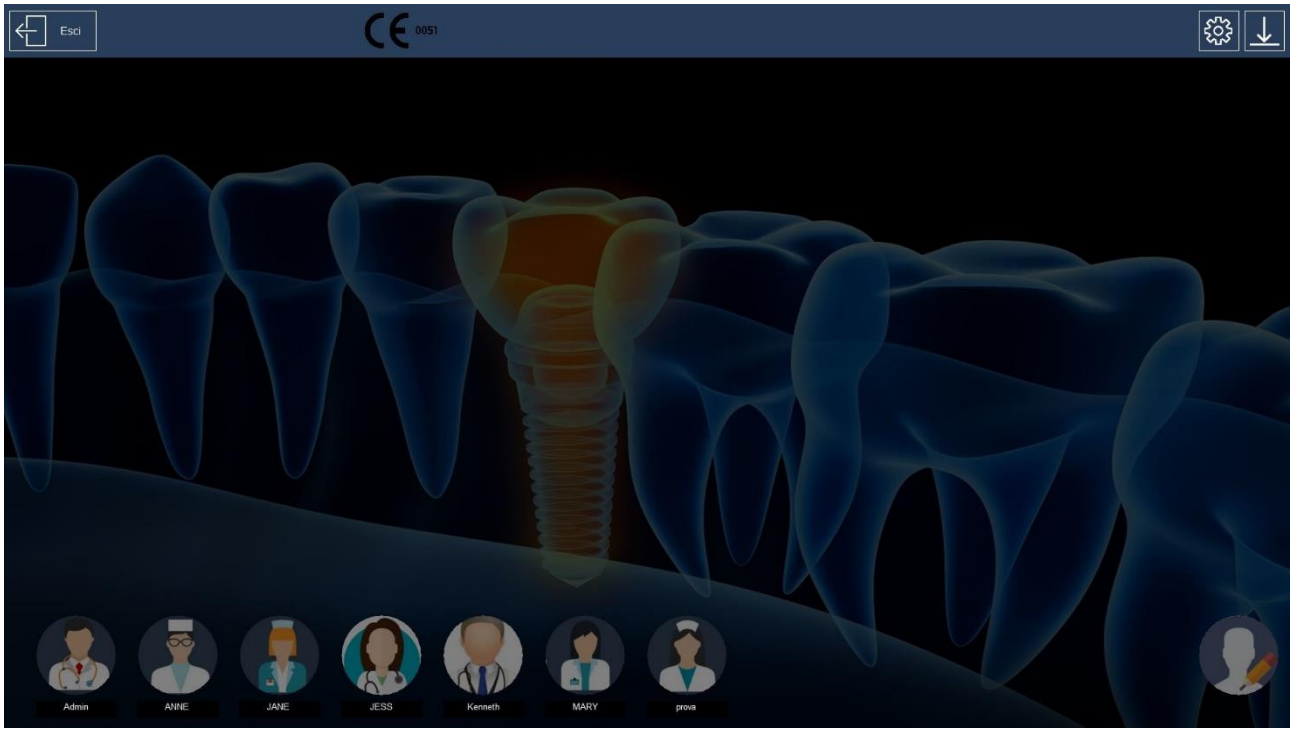
DEEP-VIEW

CE 0051



User Manual

Editor: Testoni Mario

Edition: November 2006
Revision: September 2019

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Icon in the manual



It points out one "**NOTE**"; particular attention recommend in the reading of the topics identified with such icon.



It points out one "**ADVICE**"; the topics identified with this icon concern the safety aspects of the patient and or/of the operator

CE **0051** This symbol certifies that the product "Deep-View®" complies with the European directive 93/42 CEE, as modified from 2007/47/CE.

Deep-View® is a medical active device, not invasive type, in IIA class according to the above mentioned directive.

Deep-View® is produced by:



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1. INTRODUCTION

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This manual could contain not perfectly aligned information to the attached software.
That because it is upgraded to the last emission date.
The use of the program implies acceptance of the licence agreement of use.



NOTE:

The manual is updated to the state of the product with which it is sold for guaranteeing to the consumer a suitable reference in the use of the instrument and every aspect to the safety of use.
The manual would be not reflected variations of product deprived of impact on the operational formalities and on the safety of use

We would like to congratulate for your purchase. This software is the most complete, efficient and at the same time simple to use, that is available on the market, for the management of the Dental digital images.



NOTE:

Deep-View® is supplied in different versions that includes the functionality of procedures defined "advanced". Some functionalities listed in the manual are present only in the supplied modules as additional option. Inside this manual it is indicated if the described function is not included in the basic version.



ADVICE:

Deep-View® stores patient data, images and all important information within the "ArchiMED" folder on each active drive. For example: C:\ArchiMED, Z:\ArchiMED. It is your responsibility to provide a regular and valid backup of your data, to ensure its recovery in case of: corruption, theft and other. For information on the frequency and mode of backup, refer to the regulations in force, for example *G.D.P.R (General Data Protection Regulation).*

This software will permits you to manage all the data of the Dental cabinet in a very simple and intuitive way. Moreover, Deep-View® integrates direct interface to the acquisition software of a lot of electronic devices: video radio X-Ray system, photo cameras, digital panoramic, scanners, cameras, slides scanner, etc.

A list of digital systems that can be connected to the Deep-View® is provided in Appendix 1 "Digital Sensors that can be connected to the Deep-View®".

All the images acquired with this program, regardless of their source, can be stored and processed. You can create a sequential archive of your images, or group them to obtain systematic and photo albums. The archive of images is in Dicom format.

With mathematical filters you can improve contrast or brightness for better analysis; you can also apply filters to enhance contours or represent the image **in pseudo 3D and rotate it in real time.** In addition, the use of virtual colouring makes it even easier to examine low-contrast X-rays.
An intelligent system will clarify the cause of a malfunction or error at all times and provide guidance on how to solve the problem.

This program is the result of the collaboration of the users. Do not hesitate to send us your advice on its operation and use, as well as the desire for new features. We will be happy to introduce new functionalities, if they are of common interest, in future versions of the program.

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ADVICE



The good quality of the monitor is an essential requirement for a correct diagnosis of the examination through images analysis. A monitor that don't passed the scheduled verifications (refer to Appendix 2, "**Monitor quality check** ") is not to consider diagnostic. The use of not diagnostic monitor implies a NOT diagnostic Deep-View® system.

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Intended use for Deep-View

Deep-View® is a software for the acquisition, processing, display and archiving of radiological images, acquired by digital sensors.

Image acquisition is done using the specific SDK of the selected sensor; these are supplied by the sensor manufacturer and integrated into Deep-View® after appropriate functional tests.



ADVICE:
Deep-View® is unable to control the connected electronic device, not even to interrupt the RX emission in case of need. The on-screen indicator, possibly present, which informs the user that the acquisition system is ready, must be understood as information on the status of the software ready, in combination with the information from the SDK which indicates that the system is ready to acquire the exam.

The acquired images undergo an internal SDK treatment, which provides:

- eliminate background noise (dark noise)
- correct defective sensor pixels, both single and cluster
- correct any defective rows / columns.

These treatments are performed automatically by the SDK and are not under the control of Deep-View®.

According to figure 1 of MEDDEV 2.6.1, Deep-View® is a Stand Alone Software that falls within the classification of Medical Device.

Deep-View® is a medical device intended to be used on humans to aid in the diagnosis, prevention, control of pathologies of the maxillofacial and mammography complex.

1. The system is therefore intended for the acquisition, visualization and archiving of radiographs of:
    a. maxillofacial complex, including both examinations of the dental arches, including temporomandibular joints, paranasal sinuses, radiographs of the skull in latero-lateral and antero / posterior projection, radiographs from CT systems and / or Cone Beam Computed Tomography (CBCT).
    b. breast when connected to a mammography-type image source system
2. The instrument is intended for use by qualified personnel, dentists, radiologists or legally qualified personnel.
3. The device is intended for both the market of dentists and radiologists, therefore it can be installed both in dedicated facilities (hospitals or clinics) and in residential facilities.

The type of patient population depends primarily on the radiological equipment used, without limitation of type, age, etc.

Deep-View® works on Personal Computers and mobile devices as indicated in the chapter "*Description of the operating systems that can be used*".

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Training

At the end of the installation of the system it will follow the training of the operator both on the use of the system and of the acquisition and visualization software of the images.
The training doesn't ask to use particular tools.

ADVICE:

At the end of the installation and training operations, it is compulsory to check that the images are displayed correctly on the monitor.
The procedure is described in APPENDIX 2 - "**Installation checks and periodicals**".

ADVICE:

The procedures of verification described in the appendix 2 must be perform with regularity, as described in the paragraph related to the periodic controls.

This manual describes the operations required to perform intraoral, panoramic and volumetric (or 3D) x-rays,with various types of digital sensors.

ADVICE:

Applying filters to images, calibrating measurements, changing contrast and brightness, and all the functions that modify images can introduce artefacts that compromise diagnosis. For this reason Deep-View® always preserves the original copy of the image to be referred to for diagnosis.

Update

The Deep-View® is a medical device. Please observe the following warning before you proceed with a software update of the product.

ADVICE:

Deep-View® is a software and therefore it can be updated with special procedures without the presence of a specialized technician. Deep-View® is a medical device and the producer and/or supplier have the duty to keeping track of all the installed versions with the purpose to be able to apply possible call back following defects found. For this reason please do not update the version of software that has been delivered to you except as a result of a documented procedure by your reference supplier that guarantees the product traceability.

Warranty

This program is guaranteed for a period of 90 days after the purchase date. The producer could not be responsible for any direct or indirect damage resulting from the use of the program, including loss of partial or total data or failure of the connected devices.

The program is licensed for use and may be transferred to third parties only with written authorization from Trident srl.

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Computer Requirements

The minimum requirements for the proper operation of the program on your computer are indicated in the following table. Please refer to the section "Usable Operating Systems: description" for further details on the characteristics of the personal computer in relation to the operating system.

For more information, see the chapter "Description of the operating systems that can be used".

Operating System:	**WINDOWS®10, WINDOWS® 8/8.1, WINDOWS® 7/WINDOWS® VISTA/WINDOWS® XP/2000 (suggested Windows® 7 / Windows® 10)**
Processor:	Intel I5 - Dual core (ideale Intel I7 - Quad core)
RAM Memory:	2 GB (suggested 4 GB)
Video card:	1024x768 pixels and 65.000 colours (suggested 1280x1024 pixels, 16 million colours to 32 bits optimized)
Hard disk:	5 GB (suggested 10 GB)
Monitor:	17'' (suggested 19''or higher)

The hard disk size must be proportional to the archive size that is created and especially to the images stored.

Each X-ray exam occupies disk space between 500KB and 1 GB (or more). An overview occupies 5 MB to 20 MB. A camera image occupies 500 KB to 2 MB. A CT or CBCT exam can occupy 100 MB to 1 GB.
The RAM (Random Access Memory) required by Deep-View® is at least 2 GB. Before starting Deep-View®, check the amount of physical memory available.

Description of the operating system that can be used

In the following table, we have listed the operating systems that can be used with Deep-View®, and the features of the personal computer, in relation to the specific operating system. To complete the description is specified the possibility of using the devices for images acquisition. If the specific operating system does not provide for the acquisition of images, the same can be used as a display station.

Operating system	Deep-View	Minimum Requirements
Windows 98	UNUSABLE	
Windows ME	UNUSABLE	
Windows XP Service pack 0	OK	Processor: **dual core** RAM installed **1 GB (3 GB if there is 3D Module)** Free RAM **512 MB (2 GB if there is 3D Module)** Video card not integrated on PC board. For example: **ATI,** NVidia Free disk space for the software: **2 GB** Free disk space for the data: **100 GB** (every panoramic image occupies 10 MB, a Ceph image about15 MB, an intraoral exam about 2 MB, a 3D exam 200 MB.**(Every patient needs about 512 MB)**
Windows XP Service pack 1	OK	Processor: **dual core** RAM installed **1 GB (3 GB if there is 3D Module)** Free RAM **512 MB (2 GB if there is 3D Module)** Video card not integrated on pc board. For example: **ATI,** NVidia Free disk space for the software: **2 GB** Free disk space for the data: **100 GB** (a Ceph image about 15 MB, an intraoral exam about 2 MB, a 3D exam about 200 MB. **(Every patient needs about 512 MB**)
Windows XP Service pack 2	OK	Processor: **dual core** Interface **USB 2** RAM installed **2 GB (3 GB if there is 3D Module)** Free RAM **1 GB (2 GBif there is 3D Module)** Video card not integrated to pc. Ad esempio: **ATI,** NVidia

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		Free disk space for the software: **2 GB** Free disk space for the data : **100 GB**) (a Ceph image about 15 MB, an intraoral exam about 2 MB, a 3D exam about 200 MB. **Every patient needs about 512 MB)**
Windows XP Service pack 3	OK	Processor: **Dual-core** **Interface USB 2** RAM installed 2 **GB** (**3 GB if you use 3D module**) Free RAM 1 GB **(2 GB if you use 3D module)** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows Vista 32 bits	OK	Processor: **Dual-core** **Interface USB 2** RAM installed 2 **GB** (4 **GB if you use 3D module**) Free RAM 1 GB **(2 GB if you use 3D module)** Ethernet Connection: **100 Mb** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows Vista 64 bits	OK	Processor: **Dual-core** (quad core for PantOs Art Plus) **Interface USB 2** RAM installed **4 GB** Free RAM **2 GB** Ethernet Connection: **100 Mb** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 7 32 bits	OK	Processor: **Dual-core** **Interface USB 2** RAM installed 2 **GB** (4 **GB if you use 3D module**) Free RAM 1 GB **(2 GB if you use 3D module)** Ethernet Connection: **100 Mb** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 7 64 bits	OK	Processor: **Dual-core** (quad core for PantOs Art Plus) **Interface USB 2** RAM installed **4 GB** Free RAM **2 GB** Ethernet Connection: **100 Mb** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 7 2003	OK	Processor: **Dual-core** RAM installed **1 GB (3 GB if you use 3D module)** Free RAM **512 MB (2 GB if you use 3D module)** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB**

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		Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 7 2008	OK	Processor: **Dual-core** RAM installed **1 GB (3 GB if you use 3D module)** Free RAM **512 MB (2 GB if you use 3D module)** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 8 32 bits	OK	Processor: **Dual-core** **Interface USB 2** RAM installed 2 **GB** (4 **GB if you use 3D module**) Free RAM 1 GB **(2 GB if you use 3D module)** Ethernet Connection: **100 Mb** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 8 64 bits	OK	Processor: **Dual-core** (quad core for PantOs Art Plus) **Interface USB 2** RAM installed **4 GB** Free RAM **2 GB** Ethernet Connection: **100 Mb** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 8.1 32 bits	OK	Processor: **Dual-core** **Interface USB 2** RAM installed 2 **GB** (4 **GB if you use 3D module**) Free RAM 1 GB **(2 GB if you use 3D module)** Ethernet Connection: **100 Mb** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 8.1 64 bits	OK	Processor: **Dual-core** **Interface USB 2** RAM installed **4 GB** Free RAM **2 GB** Ethernet Connection: **100 Mb** Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: **2 GB** Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 10 32 bits	OK	Processor: dual core Interface USB 2 RAM installed 2 GB (4 GB if module 3D is present) Free RAM 1 GB (2 GB if module 3D is present) Ethernet Connection: 100 Mb Dedicated video card not integrated on PC board. For example: ATI, NVidia

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		free space on Disk for the software: 2 GB Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Windows 10 64 bits	OK	Processor: dual core Interface USB 2 RAM installed 4 GB RAM free 2 GB Ethernet Connection: 100 Mb Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: 2 GB Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Mac OSX: macOS Sierra v10 **Consultation mode only, you can not capture images as there are no appropriate drivers to manage from this operating system the capture devices**	OK	Processor: dual core RAM installed 4 GB RAM free 2 GB Ethernet Connection: 100 Mb Dedicated video card not integrated on PC board. For example: ATI, NVidia free space on Disk for the software: 2 GB Free space on disk for your data: **100 GB** (each panoramic image requires about 10 MB, a Ceph about 15 MB, an intraoral about 2 MB, a 3D exam about 200 MB. **Each patient requires about 512 MB)**
Mac iOS: versione 10 **Consultation mode only, you cannot capture images as there are no appropriate drivers to manage from this operating system the capture devices**	OK	Processor: dual core Apple iPad / iPad pro / iPad mini free space on Disk for the APP: 2 GB The image store does not reside on the device but on a computer on a local or remote network.
Android: versione 7 **Consultation mode only, you cannot capture images as there are no appropriate drivers to manage from this operating system the capture devices**	OK	Processor: dual core Memoria RAM installed 2 GB free space on Disk for the APP: 2 GB The image store does not reside on the device but on a computer on a local or remote network.



NOTE:

Desktop / laptop computers with a single core, free RAM less than 1 GB and integrated video card are **strongly discouraged.**

Data Security

The database created by Deep-View® is password-protected and its contents are encrypted with 128 bits technology. This prevents unauthorised access to the data. This encryption complies with recent privacy regulation contained in the European G.D.P.R. regulation. (General Data Protection Regulation).

Secure data copying



NOTE:

The computer and electronic devices may wear out or break. It is essential to have a regular data backup and prevent accidental loss of data due to failure, theft or loss of storage devices.

Periodic data backup is the only way to recover data loss due to faults, theft, or erasure performed by the operator in an incorrect manner.

The backup must be performed at least once a day. Each backup shall **not replace the previous one**. It is recommended to organize a backup system that works like this:

Every night at 24:00 all the data are saved on a second computer or on a hard disk different from the one where the operating data reside. Every night the backup program (**not supplied**) creates a copy in a folder always different on the destination disk of the saving. Once the backup program has created 30 different copies of the data, it can start replacing the oldest copy. This way you will have the possibility to recover a data loss up to 30 days before.

How to use this manual

This manual is organized into tabs. Is described every function and some examples of use. There is therefore a paragraph "Description", an "Operation" and often an "Additional Information".

Because this program uses electronic devices (computers, mouse, and peripherals), specific industry terminologies or acronyms are used frequently. We apologize if sometimes your reading may be unclear, but we will try to explain some terms that we will use later.

The phrase "**move the mouse...**" means moving the indicator to the screen, which indicates the position of the mouse (normally an arrow), in a specified area.

"**Clicking with the mouse**" means moving the mouse to the indicated position and pressing, then releasing, the left mouse button.

The "**buttons**" represent the program function and can be called up by clicking with the mouse on them.

Sometimes you will find "**Recover the image...";** you will have to display the window that represents the archive (sequential or systematic), then select the image you want to process and send it, using the appropriate buttons, to the processing window.

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Program Presentation

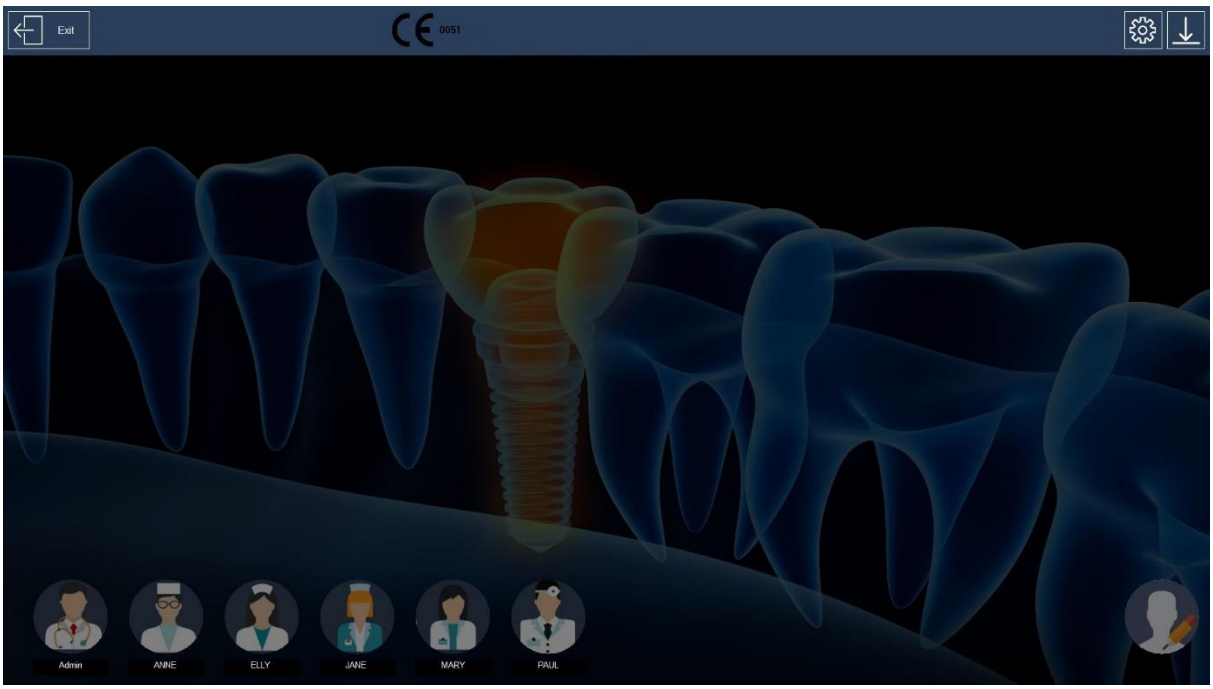


Figure 1

Before you start working with Deep-View® you need to understand how it was designed and created.

The main purpose for the development of this program is the SEMPLICITY OF USE. To achieve this goal, we began with the idea that a software is as simple to use as fewer overlapping windows it contains. You need to have as much information on the screen as possible, divided into topics.

Many programs often force long and complex ways that are difficult to memorize. That means that to carry out an operation that is not frequently used, must be made a great effort to find the right way. Our goal is: few clicks with the mouse to perform each operation.

The Deep-View® has been developed in such a way that its use is truly user-friendly.

In addition Deep-View® has been developed in such a way that it can be used in a very intuitive way. It is also designed to be used as a cross-platform system. It can be used on: Windows, MAC OSX, Android and iOS.

The Deep-View® main page is shown in the figure above.

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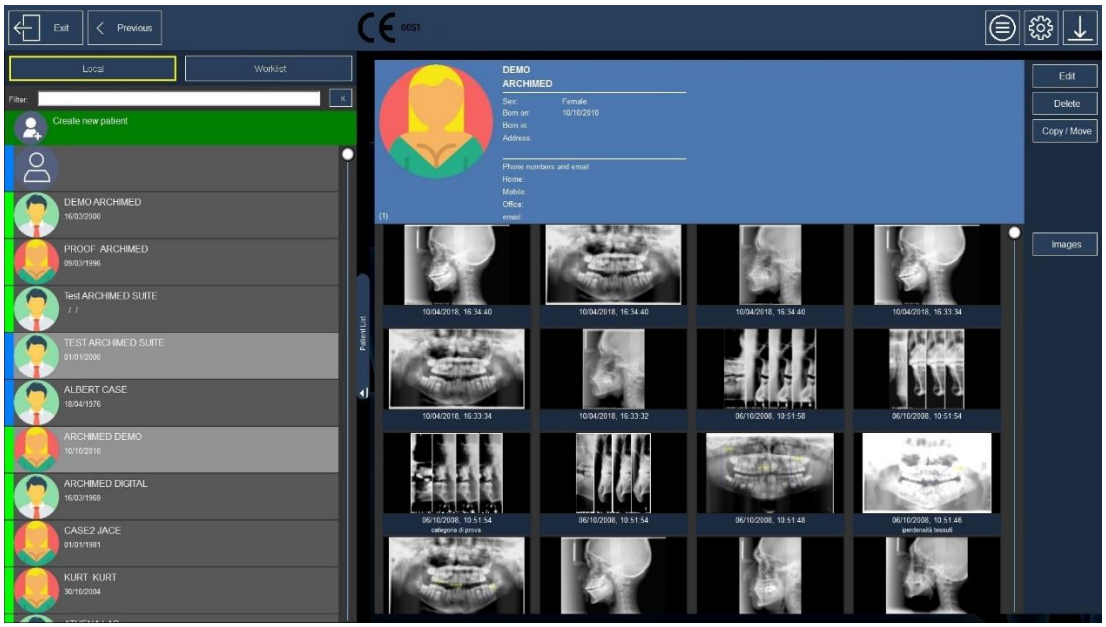
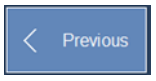


Figure 2

The page on the left shows the patients list present and the possibility to perform any operation on them: creation, editing, worklist management (all these functions will be explained in detail in the following chapters).

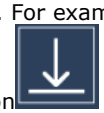
The button on the top left indicates the possibility to return to the previous page 

.and then log in again by re-entering the password, so during your absence, nobody, if not aware of the password, can use it. This procedure guarantees the use of the software in accordance with the privacy regulations.

Clicking on the button 

to exit the program.

In the top right corner this button  allows you to access the Setup page where there are a number of utility functions. For example, we find *general settings*, *database and network settings, etc.*

The button  minimizes the program window.

The button  allows you to access the multiscreen mode.

This button  allows you to access to a series of functions explained in the chapter "*Advanced Searches*".

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2. PACKAGING AND INSTALLATION

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Packaging

The software product is supplied on CD/DVD or on a USB memory card.
Together with the package of the software product, you will also receive an activation key, which consists of a USB key. We recommend connecting this device after the drivers have been installed.
The USB protection allows you to use the application on up to 10 computers at the same time. You can extend this limitation by purchasing additional licenses.

Installation

The program has been designed to be installed on the main operating systems (Windows 32/64 bits, MAC OSx, iOS and Android). Below are the different installation steps, depending on the operating system used.

Operating System: Windows

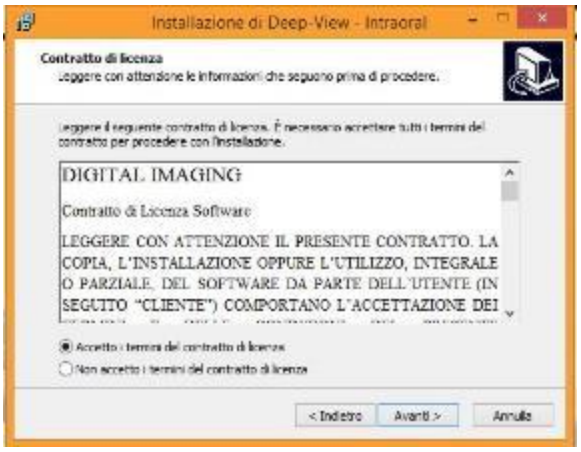
Insert the CD/DVD/Memory card into the PC player. Wait for the setup procedure to start or double-click on the "Setup" icon. Will be displayed the installation window.

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Click on "Program Installation".

Then will appear the installation start window. Click on "Next"

Now you will be asked to accept the terms of the license. Click on "accept" and then on "Next".



Now you will be asked to install the drivers for the USB Key, through the following window:

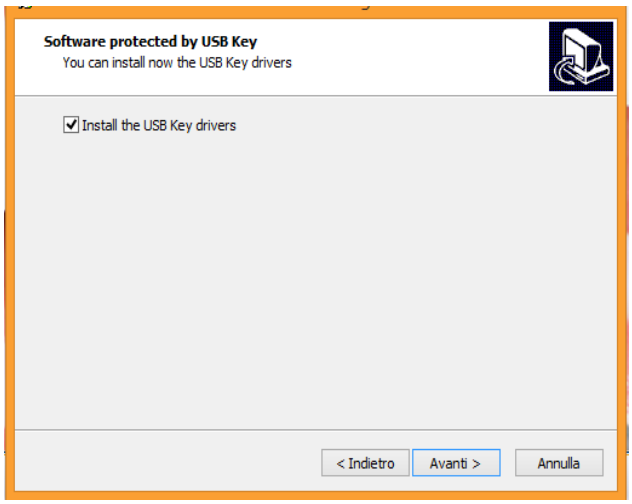


Figure 3

ADIVCE:

The program's security usb key is strictly personal and represents the user license. If you lose your USB key, you must purchase the license again. We suggest you install the USB flash drive on a PC located in a safe space.

NOTE:

Install the drivers only on the computer where the USB key is connected.

Now the installer will start. Close any open programs and click "Next" to allow the drivers installation. During the installation process is requested to add an exception to the Windows firewall, as shown in the figure below. You must give the Approval (click" Yes") otherwise the USB key is not seen to other computers on the network.



Figure 4

Waiting for the installation to be completed and click on "**Finish**".

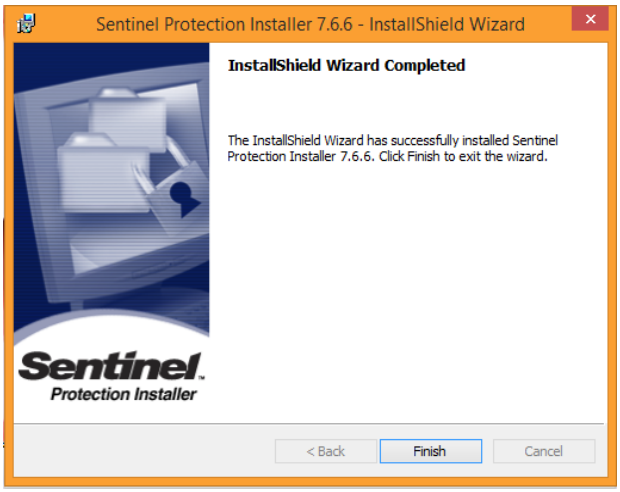


Figure 5

Continue with the installation by selecting "Next" and wait until the installation is complete.

Click on "*Finish*".

Operating System: Mac OSX

The product delivery for use on Mac OSX is not included in the standard delivery. If you received the installation package for your Mac OSX operating system, proceed in this way:
Insert the CD/DVD/Memory card into the PC player. Open the contents of the device via the Finder. Select the MACOSX folder. Install the Deep-View® package. If necessary, please contact the technical assistance service for installation support: www.archimed.org.

Operating System: Android

The product delivery for use on Android devices is not included in the standard scope of delivery.
Installation on Android devices is done through the use of an APK. This "APK" installation procedure is available on request and can be installed on your Android device by connecting it to a PC via USB cable. If necessary, please contact the technical assistance service for installation support: www.archimed.org

Operating System: iOS

The product delivery for use on iOS devices is not included in the standard delivery.

Installation on iOS is via the Apple Store. For details on how to install the application on iOS devices, please contact the technical assistance service: www.archimed.org

Program protection

Deep-View® has protection from a USB device inside the product box. This mechanism will be sufficient to ensure the protection of the program.

ADVICE:

The data entered during the activation of the license of the program will be used for DICOM tags of images. Failure to activate the key or incorrect data entry will result in the unsuitable compilation of DICOM tags relating to clinical references.

License Management

Studio license data is required the first time you use the software package and until you enter it. The following box will appear to enter the data in the appropriate spaces:



Figure 6

The Studio license data can be changed by accessing the setup  and selecting "License Manager" from the left menu. Be careful when entering data.

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Figure 7

To update the license data, click on 

button and enter the data. Then click on 

to make the update actual.

3. PASSWORD AND USER ADMINISTRATION

Password Management

When the program starts will appear this window:

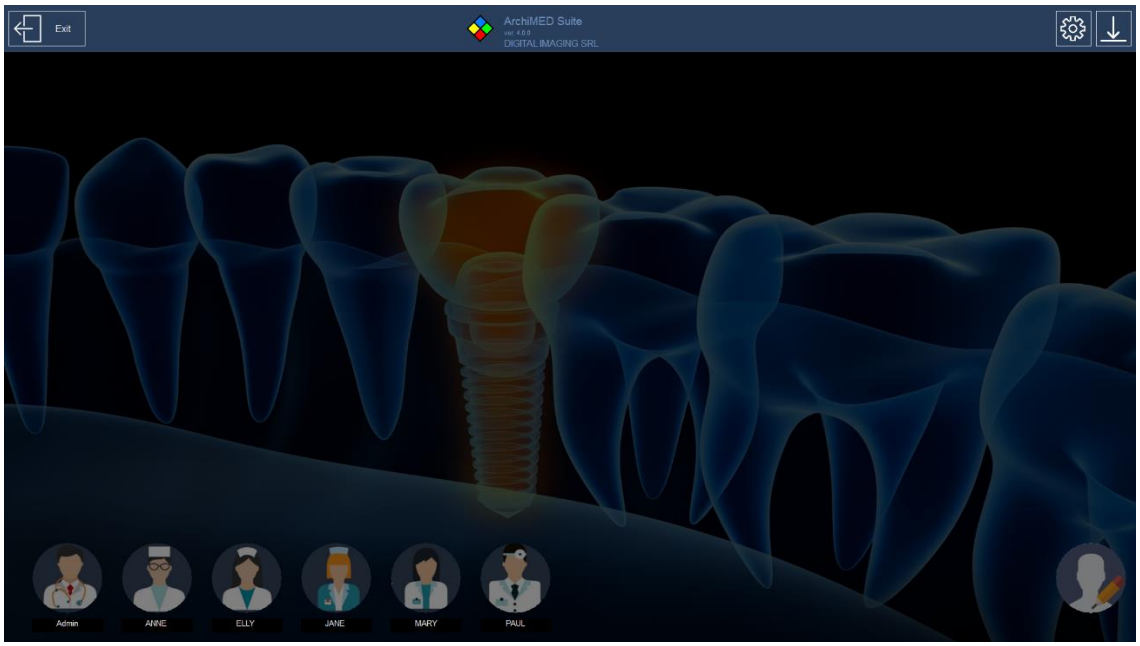


Figure 8

To access the program you have to click on one of the users in the lower left corner.
If you are accessing Deep-View® for the first time, you will only find one user: Admin. The default Admin user initial password created is: 12345678. **The first password must be changed in accordance with data security regulations**.

You will have to enter the old password once and twice a new one at your own convenience (excluding the first password 12345678).
Click on the "**OK**" button. Type your new password in the program access window, then click "**Sign in**" to enter the program. In accordance with the new privacy regulations, all accesses to the program are stored.

ADVICE:

To comply with the minimum safety terms established by the European G.D.P.R. Regulation (*General Data Protection Regulation*) in matters of privacy, the program the first time you access, it will ask you to enter a password with some minimum requirements.

Forgotten Password

Click on "*Forgotten Password*" from the following window:



Figure 9

Simply answer the question that you set when creating a new user.
The program will automatically check the response and, if correct, indicate the current password.

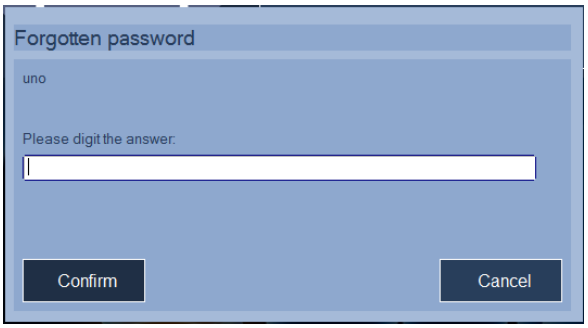


Figure 10

Close session

Through this  button you can put the program in standby; to be able to use it again you will need to re-enter the password, so that during your absence nobody, if not aware of the password, can use it. This procedure guarantees the use of the software in accordance with the new privacy regulations.

Users administration

Create a new user

Only the administrator of the program can create or edit the users.

To add a new user or modify it, click on the icon  at the bottom right of the program access page.
Then will appear this page:

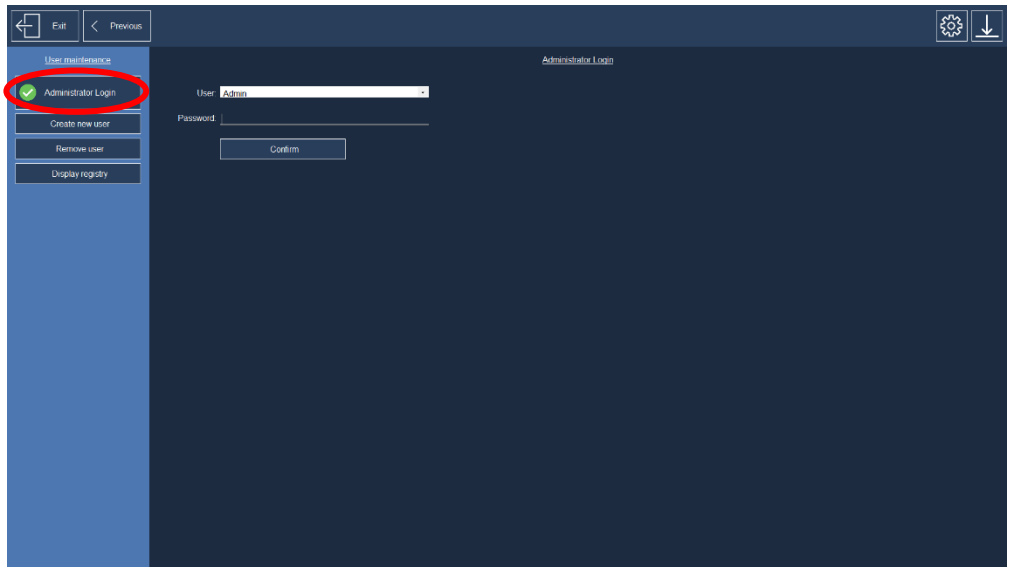


Figure 11

Log in with the administrator password and click on Confirm. After logging in, the green check will appear on the "Administrator login" box, shown in the figure.

Click on Create new user and will appear the following window:

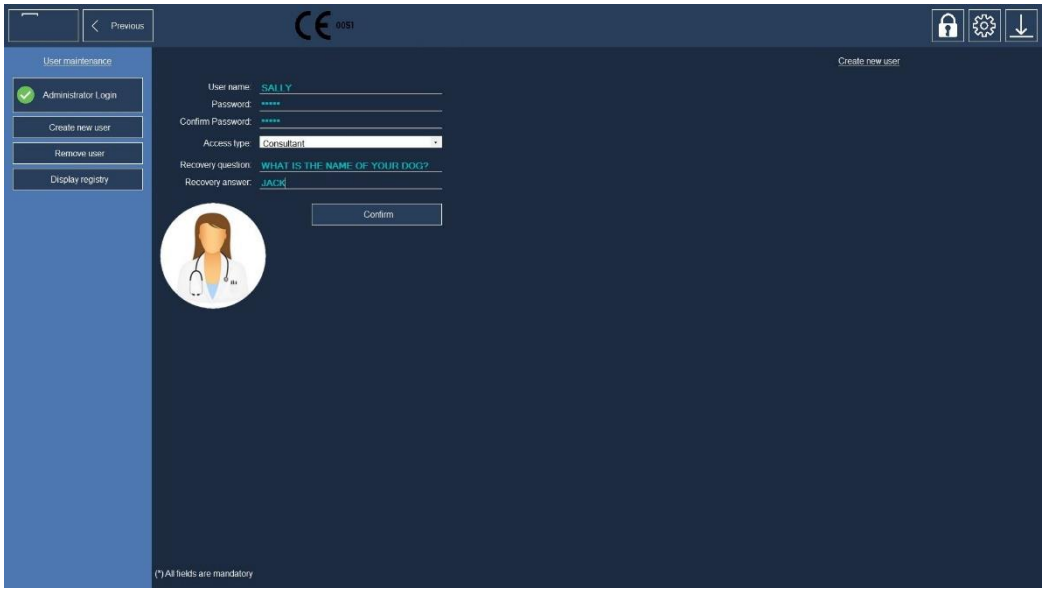


Figure 12

Digit your name, password, select your login type and click on Confirm to create a new user. You can also set a question with an answer that you know will help you in case your password is forgotten.
The password assigned by the administrator during creation, must be changed at the first user access.

Each user can be assigned a photograph, importing it from the personal computer by clicking on the black square on the new user's creation page.
There are five main access levels: Administrator, Standard, Secretary, Consultant, Limited.

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SECTION	ACTIVE FUNCTION	ADMIN	STANDARD	SECRETARY	CONSULTANT	LIMITED
MANAGE ACCESS AND DATABASE	Users management: add/remove users	V	XX	XX	XX	XX
	Displaying archives and add or remove archive	V	V	V	V	V
	Display registry	V	XX	XX	XX	XX
PATIENTS	Displaying list and personal data patients	V	V	V	V Displaying only patients created from consultant profile	V
	Create and edit patient's data	V	V	V	V	XX
	Copy/Move patient from one disc to another one and delete patients	V	V	V	V	XX
IMAGES MANAGEMENT	Access to images module and apply edits	V	V	XX	V	XX
	Images acquisition	V	XX	XX	XX	XX
	Accesso to images module options	V	XX	XX	XX	XX

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Delete an user

Log in with as administrator and click on Remove user from the following window and select the user to be deleted. Click on Confirm and the selected user will be removed.

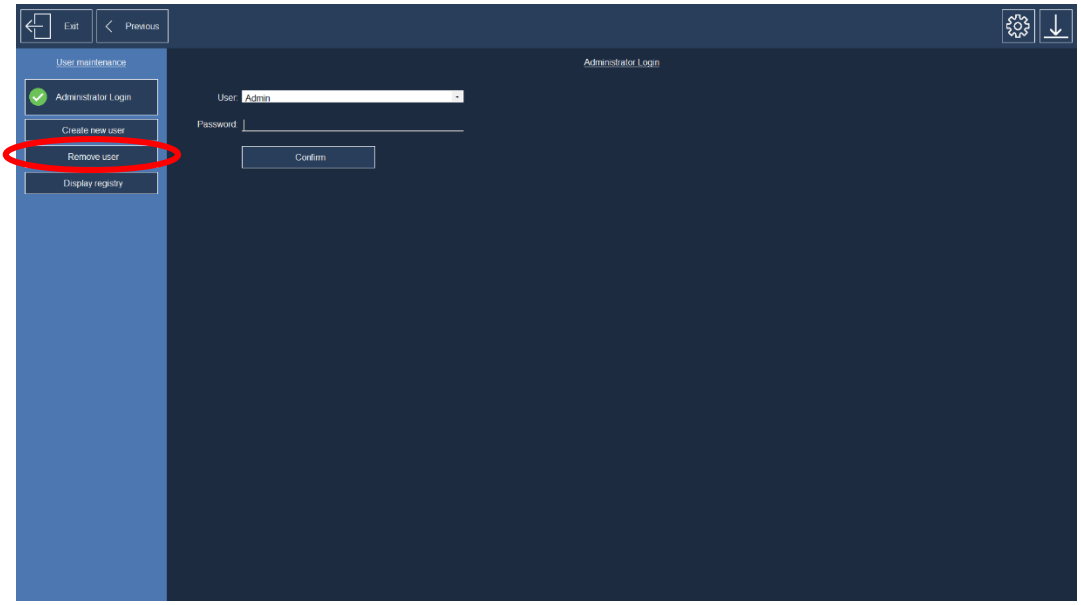


Figure 13

Display user access

Click on Display registry and the following window will appear:

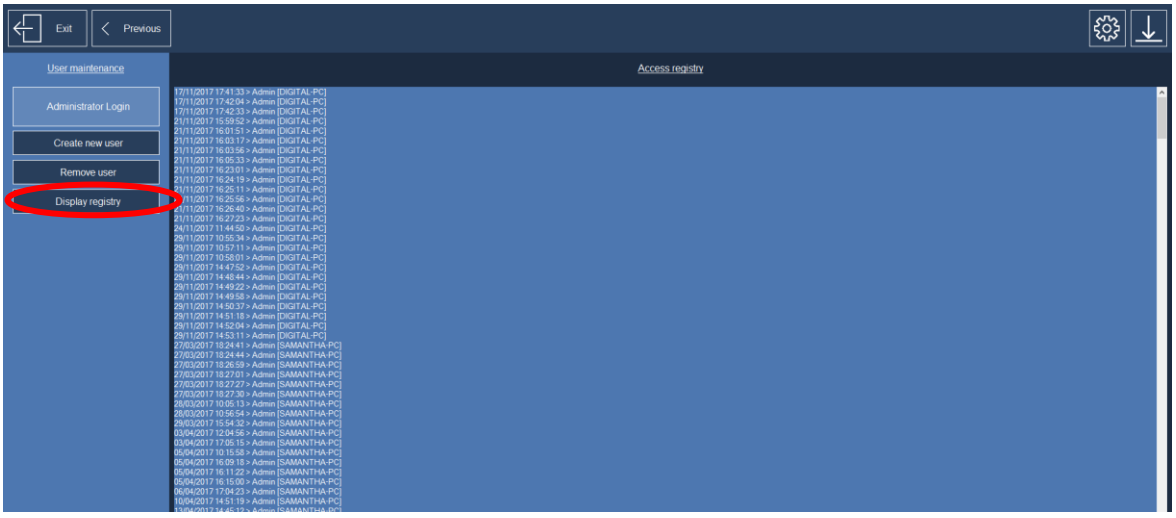


Figure 14

In this way you'll have the possibility to keep track of all the accesses occurred by viewing: **date and time, username and name of the computer from which you logged in.**

4. DATABASE MANAGEMENT

Deep-View® offers the possibility to work on multiple disks simultaneously.
Using multiple disks at once means that you can split archives into multiple disks as you want, but you can see all of them at once.

EXAMPLE:

If you only want to leave patients currently under treatment or to be recalled on the network disk, you can, for example, store them on the S disk (where "S" is a network disc). All other patients, historical ones for example, can be stored on disk T (where "T" identifies a disk of any type).
Deep-View® can use all of the archives at once (up to 20, even if the actual limit is determined by computer and network characteristics) and display a list of all patients in general alphabetical order.

To distinguish the source of the archives, next to the patients there is a colour that identify the source disk. For example blue patients in treatment and green historical patients.

To access the section dedicated to disk management click on the Setup icon  and select the "*Database Settings*" box from the side menu

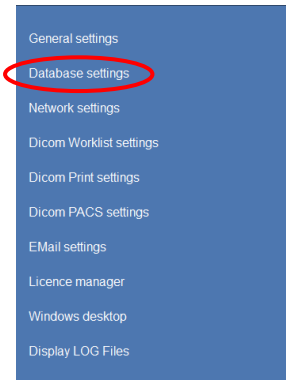


Figure 15

Then will appear the following window:

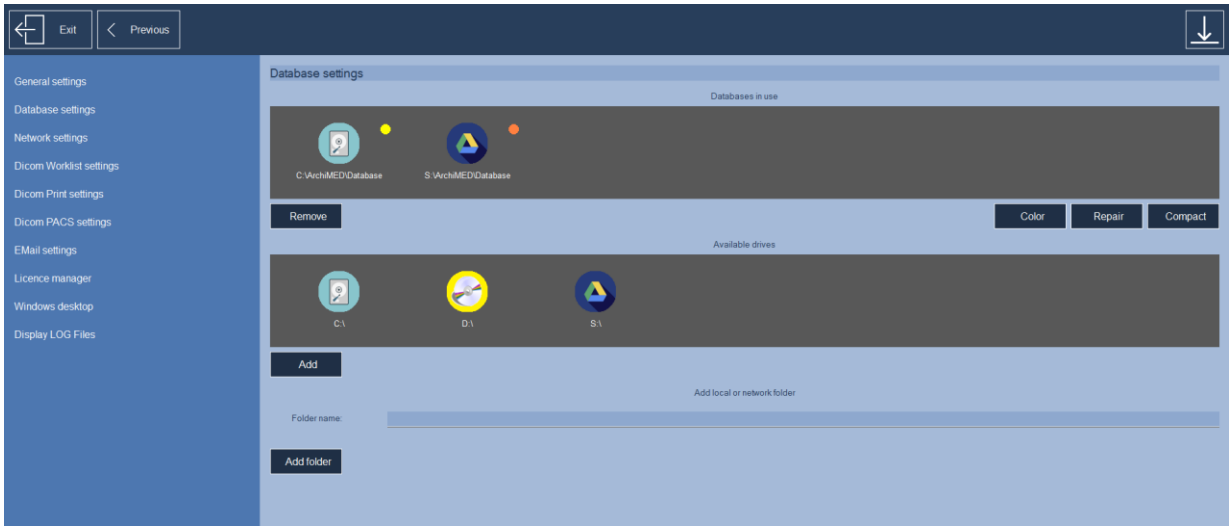


Figure 16

In this window you can view the databases in use in the program and all the hard drives in your personal computer

Add a drive

To add a drive you must select it in the list of those present, as in the figure below.



Figure 17

Then click on the button Add. After this action the selected disc will appear in the list of the database in use.



Figure 18

This way Deep-View® will work on multiple database and you can store different data.

NOTA:
Deep-View® verifies if the added disk contains the database. If the disc does not contain the database you will be asked whether to create the working environment. If so, a guide will help you to create the database. If not, the disc will not be added.

Remove a drive

To disconnect a drive click on the database you want disconnect and then click on Remove, as shown in the figure below.

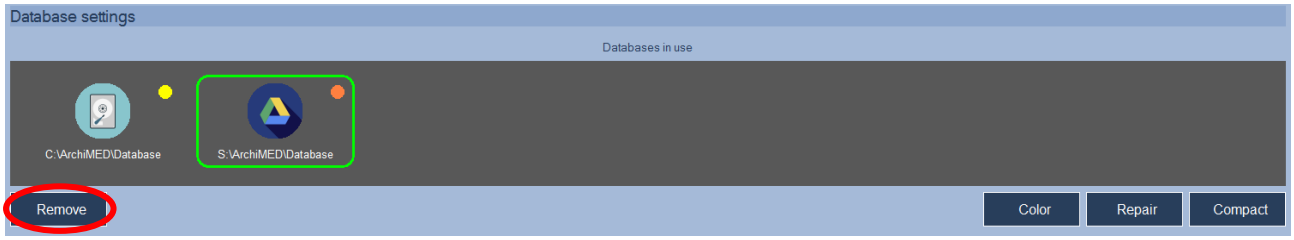


Figure 19

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Then will appear this window:



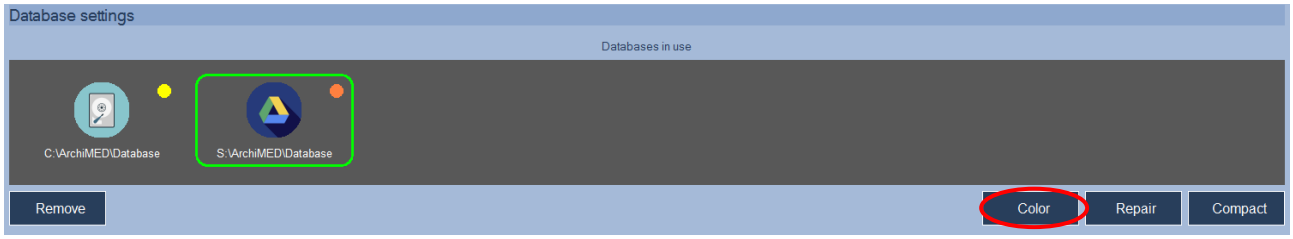
Figure 20

NOTE:

Disconnecting the disk does not mean deleting data.

Customize Database

You can assign the colour you want to the drive, by clicking on 



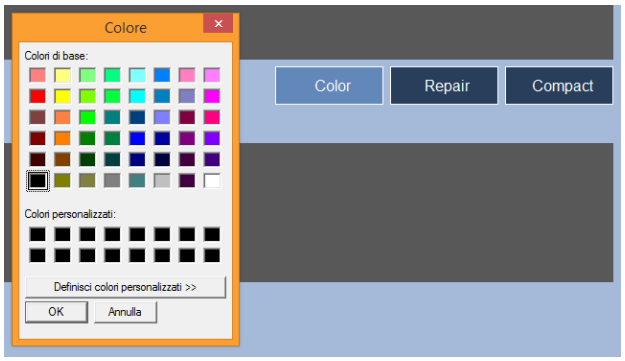


Figure 21

Select the colour and click on "OK”

This allows you to differentiate the contents of archives by color. For example, the red archive contains patients in treatment and the yellow archive contains historical patients. The same color will appear next to the patient's name, so the disc of origin is identifiable.

Moreover When a disk is connected to the computer (e.g. a pen drive or network disk), Deep-View® will automatically recognize it, and insert it into the sequence of available drivers.

Repair Database: Using this function you can repair your database in case of damage. Simply selecting the drive and choose if make the verify or directly start to repair. When the procedure is finished, click on “Close”.

Compact Database: it compacts the database. This function is automatically execute every time you delete an image.

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5. PATIENTS MANAGEMENT

Create a new patient

In the main page of the program, on the left there is the patients list.

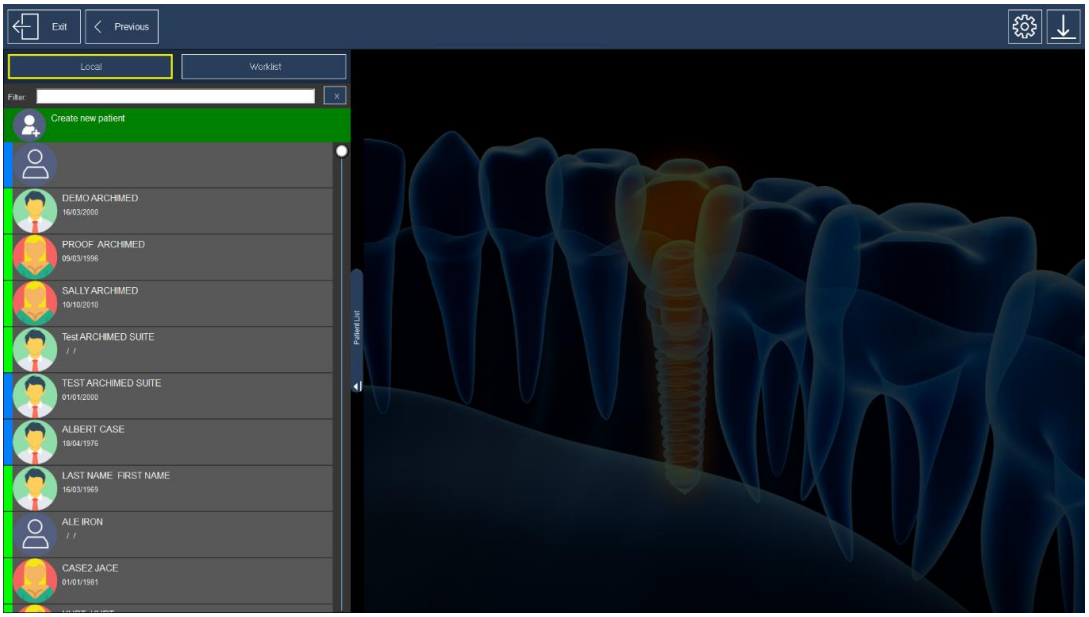


Figure 22

To create a new patient, click on 

, then will appear this window:



Figure 23

To create a new patient, you must enter some basic information (**First Name, Last Name and Date of Birth**).

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NOTE:

The format of the patient's birth date (dd /MM/yyyy) , is defined by the settings of your operating system. If you want to change it, you need to access to the "Clock, language and region setting, from the control panel, and click on "Change date, time or number formats".

Before save a new patient you have to select the destination database (only if you have more than one active database). Click on the destination database, then on 

.

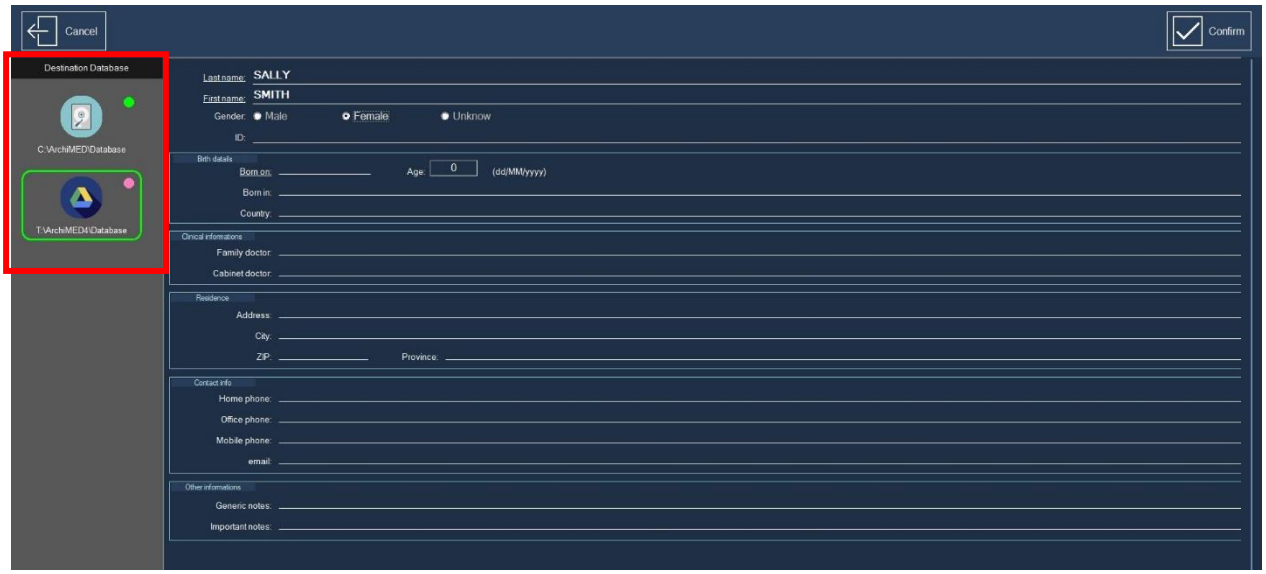


Figure 24

Patient Information

There are also some optional information that can be assign to each patient and shown in the following window

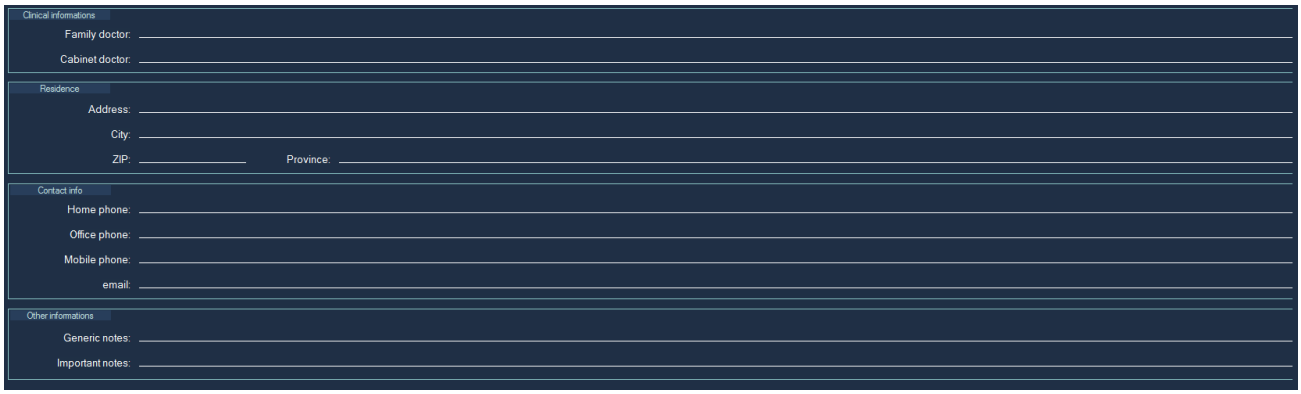


Figure 25

- Family doctor
- Address
- Home phone, mobile phone, e-mail
- Other generic and important notes

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Patient search

To search for a patient, go back to the main page and enter the patient's surname or first name in the input box "Filter" (if only the first or last name is written, the program will automatically find all patients whose surname or first name contains the text entered)

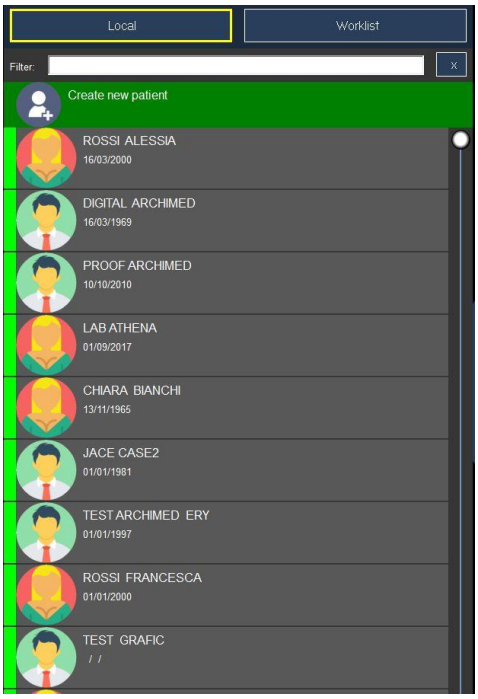


Figure 26

By pressing 

the program will connect with RIS database which contains exam scheduling and other patient's data. Deep-View® includes the list of local database with RIS patients list. To configure DICOM modality worklist, please refer to chapter "*DICOM Settings*".

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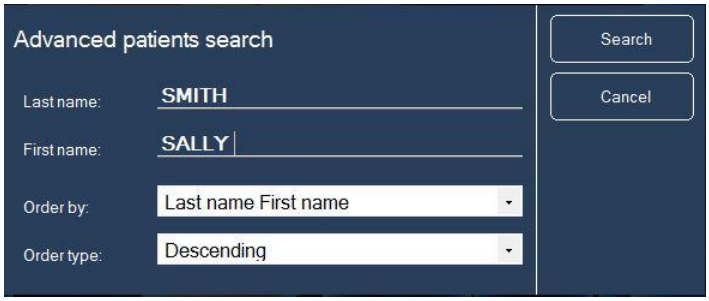
Advanced patients search

This is a function very useful when, you need to search a certain patient by inserting biographical data order by creation date, access date to data patient. This function allows you to advanced search for a patient by entering some specific search criteria, such as: The surname and first name, date the patient was created, or date of use. The search results can be displayed in ascending or descending order according to your needs. This is a very useful function to apply when, for example, you want to go back to the card of a specific patient inserted in the last 24 hours. In this case, the search order will be determined by the "patient's creation date".

By pressing this button  will open a menu.

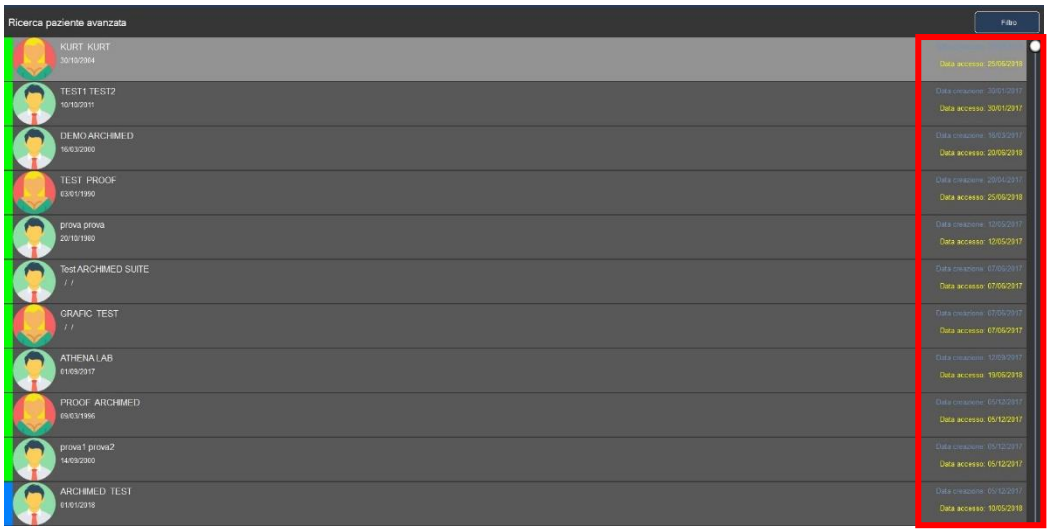
Click on the button 

, then will appear the window shown below:



By clicking on 

, it will appear the following window:



The right side shows the date of creation of the patient (in light blue) and the last date of access to his card (in yellow). Double-clicking on the patient's grey bar will take you to the image module as shown below:

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Choice of patient

To open a patient tab, select the name from the list and will appear all information and previews of the images assigned to the patient.



Figure 27

You can enlarge a single image by double clicking on it and put it back in the list by double clicking.

Modify patient

Select the patient you want to modify and click on Edit as shown in the figure:



Figure 32

Then will appear all the patient data to modify.

Worklist

Clicking on the button Worklist, the clinic connects to RIS to retrieve the list of patients to be examined. This list is automatically integrated with the list present in the local area. Patients received from RIS, when selected, will be added to the local database. To configure RIS, refer to the program setup, explained in the chapter "*DICOM Worklist*".

Copy/ Move a patient

To copy or move a patient from a database to another one, click on "Copy/Move" from the patient card and select the destination drive.

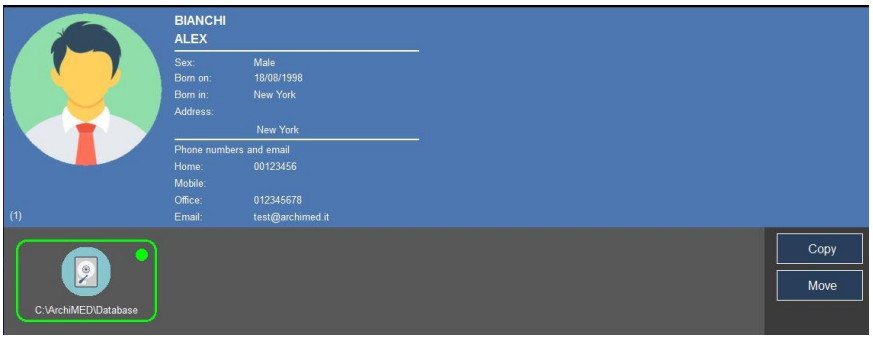
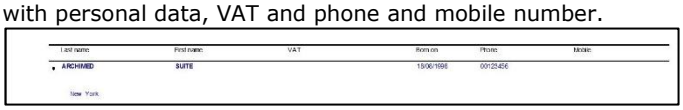


Figure 28

Print/Export patients list

By clicking on  at the top right of the patient's page, you can access to these functions:

	This function allows you to print patients list of your database with personal data, VAT and phone and mobile number. 
	This function allows you to export the patients list to your personal computer in CSV file.

6. IMAGES MANAGEMENT

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Presentation

To access the section dedicated to image management, click on the Images button on the patient's personal data sheet, shown in the figure below.

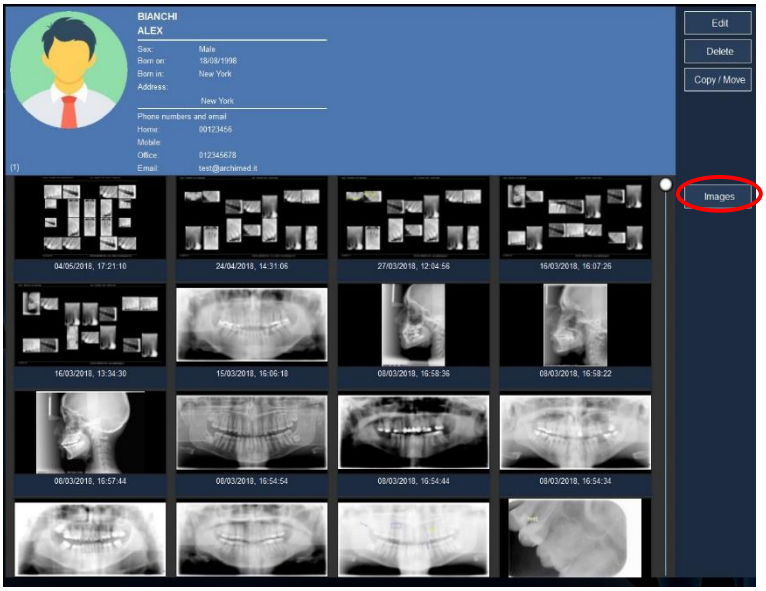


Figure 29

In this window on the left side you can see all the images categories

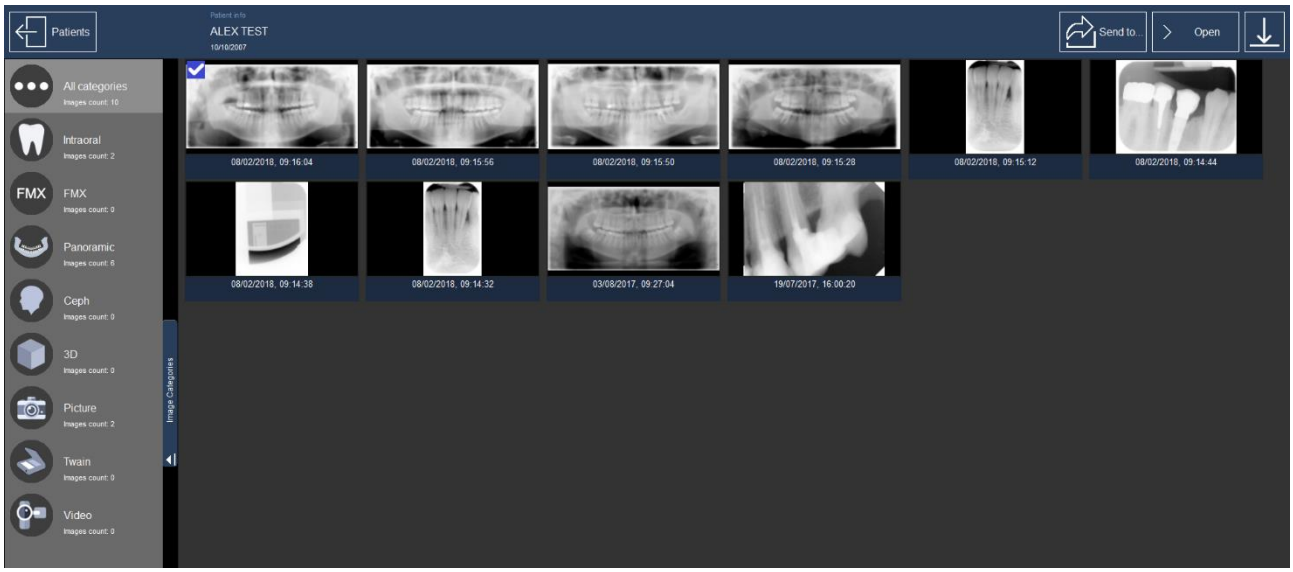


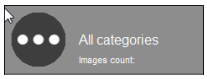
Figure 30

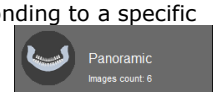
The image module is organized by dividing the monitor space into two areas:

-the central where the images are displayed in order of acquisition (showing at the bottom a note with the date of acquisition);

- a sidebar, with a tab that serves to hide or show it as needed, where the categories and number of images contained in each are displayed.

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Selecting 

displays all the images captured; selecting the button corresponding to a specific category displays only the images captured with that specific medium. (E.g.: when selected 

, only the PANORAMIC are displayed)

By clicking on a category button, it will appear the icon  that updates the images database of the category.

Advanced images search

This is a function very useful when, for example, you need to recover a certain image. By pressing this button  will open the highlighted menu, shown in the figure.

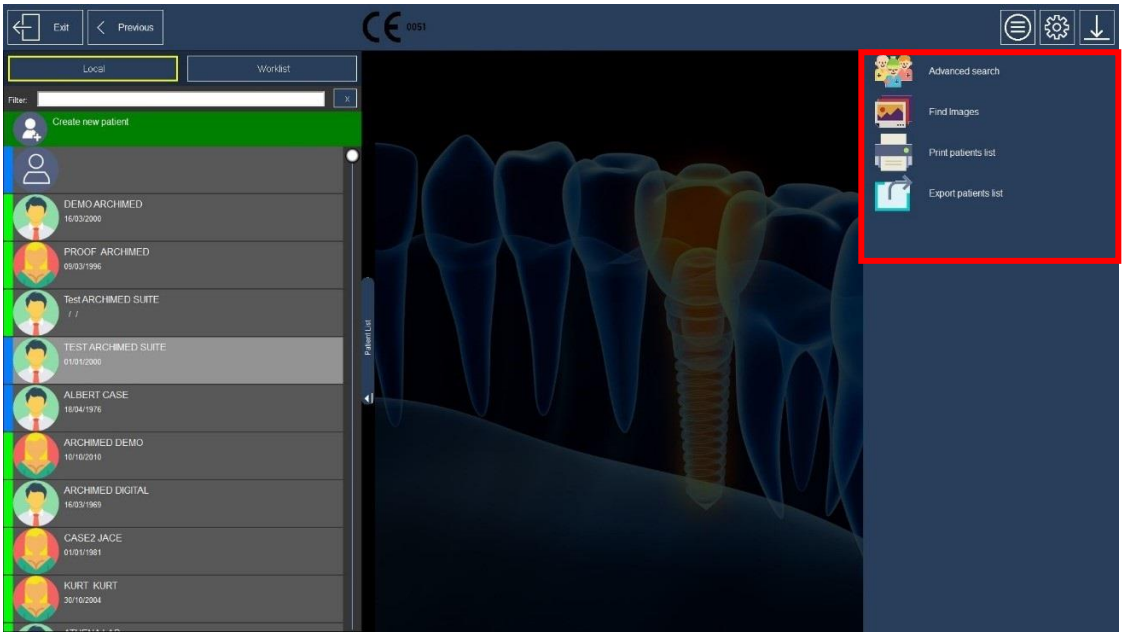


Figure 31

Click on 

and will appear this window:

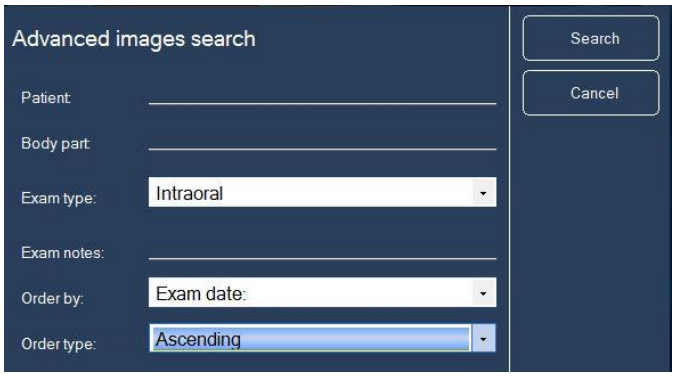


Figure 32

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Here you can apply some different filters to search a specific image.
The parameters selected in the example will give as result the intraoral images performed and sorted by date of execution of the exam, starting from the most recent.

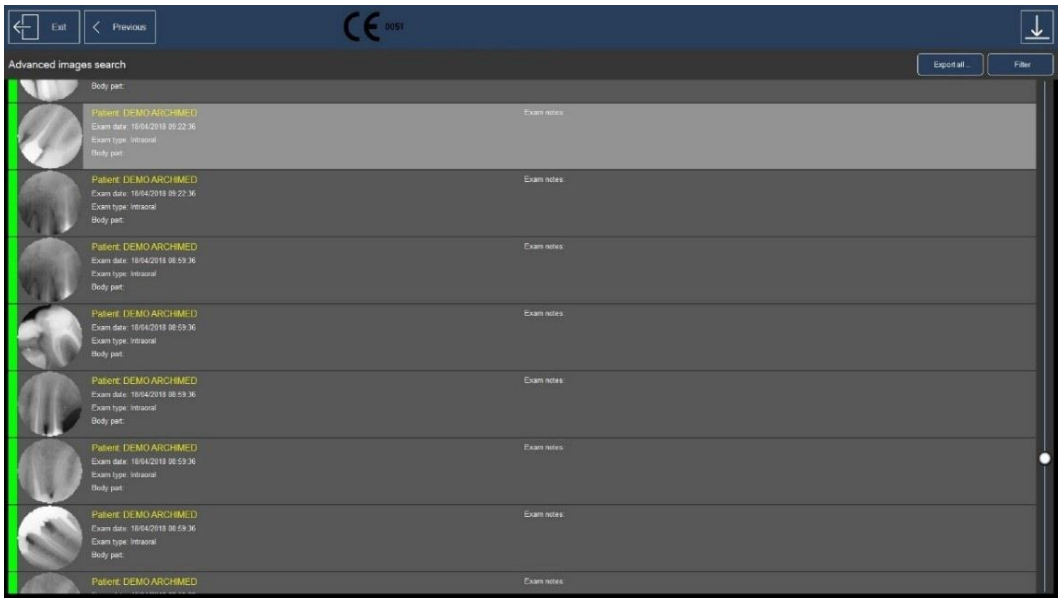


Figure 33/a

By double-clicking on a single image you can enlarge it and zoom it using the mouse wheel.

Selecting Save As ..., you can save it and export to a folder in your personal computer in DICOM, Jpeg or Bitmap file.

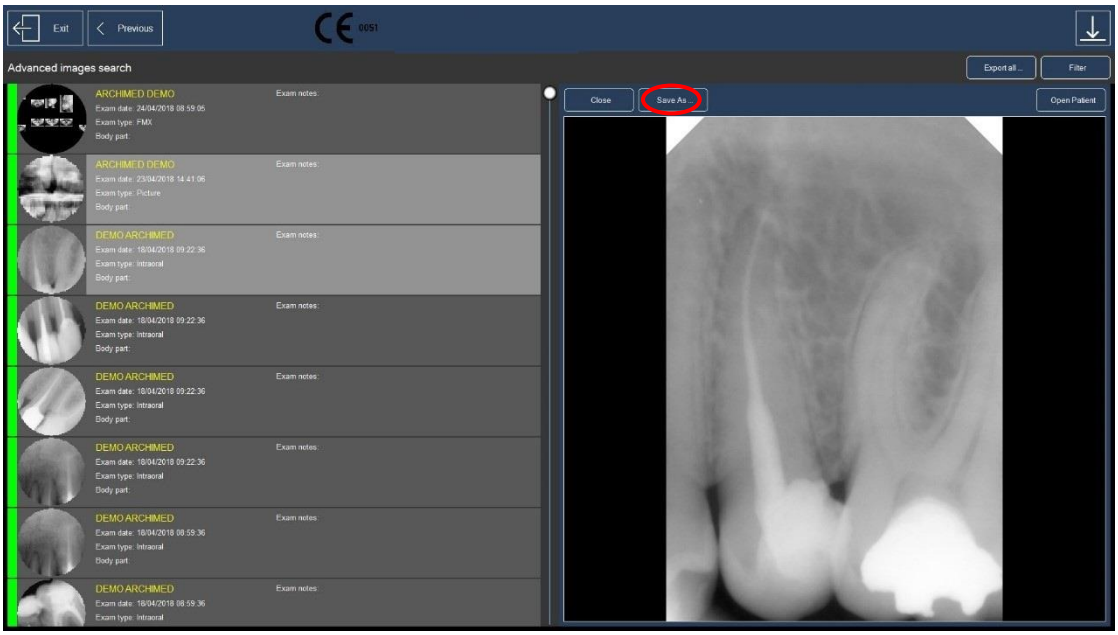


Figure 34/b

Click on 

to export all the found images in a folder of your personal computer. Every image presents automatically: number, patient name and category. The images will be saved in Jpeg format in the "ExportedImages" folder. For example:



By selecting the button 

at the top right you will access to images archive of the patient, directly.

Click on 

to close the window. Click on 

to enter new search parameters.

Images toolbar function

By selecting a single category, at the bottom will appear these functions:



Figure 35

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Images Setup

NOTE

After the sensor configuration, useful for acquiring in that specific category, the button corresponding to the acquisition will also appear in the bottom. **Thus the acquisition can be launched only in the category of sensor belonging and not from the ALL CATEGORIES item (where it is not possible to display the sensors ready to acquire).**

Sensor Configuration

The 

button opens the window for the configuration of the devices. The configuration changes according to category. The configuration procedure is very simple: the user must indicate the selection of the sensor in his possession with all the parameters related to its operation, as shown in the figure below. For more details about the sensor function, please refer to the technician or sales representative who supplied the system.

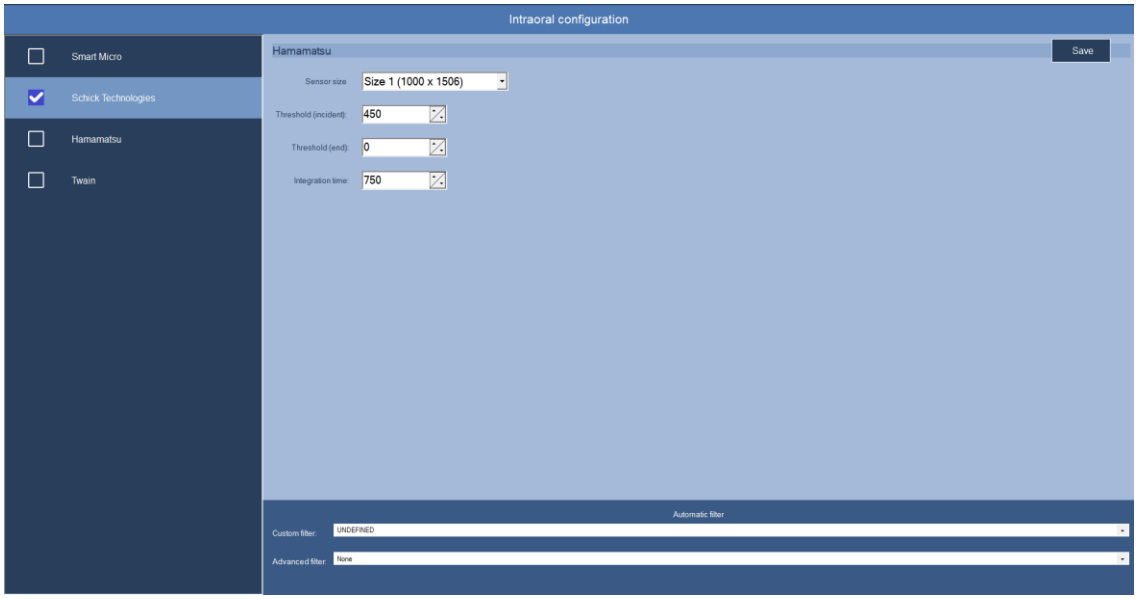
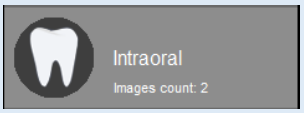
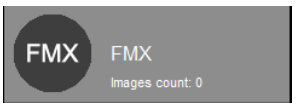
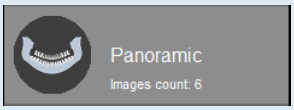
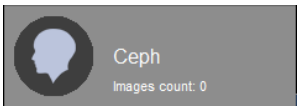
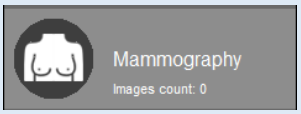
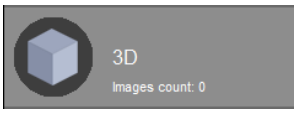
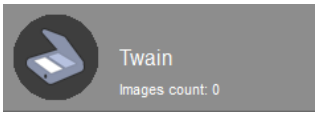
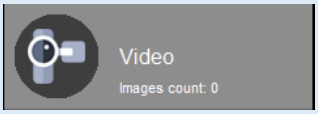


Figure 36

Category	Setup
	 This function allows you to configure the intraoral sensor used. This function selects the intraoral device. The parameters for the intraoral device must be communicated by the supplier of the device.
	 This function allows you to perform the images acquisition from the status, which will be discussed in detail in the paragraph "Full Mouth Series".
	 This function allows you to select the panoramic system. The panoramic system parameters must be communicated by the supplier.
	 This function selects the parameters for the external application of Ceph.
	 This function selects the parameters of Mammograph and it is available for a Mammography use.
	 This function sets the 3D parameters
	 This function sets the images option
	 This function sets the parameters for setting up the TWAIN interface configuration.

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This function selects the options for the camera. The camera is supported by TWAIN drivers, file transfer or direct capture from the camera using VFW (Video for Windows) technology.

Delete images

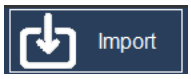
By clicking 

irreversibly removes the selected image. The images **cannot be recovered in any way**.

ADVICE:

Deep-View® removes images irreversibly. You will be asked for confirmation before deleting images. If you confirm, you will no longer be able to recover the deleted images except from a backup copy.
In some countries, delete X-ray images is an action not permitted. For this reason, Deep-View® uses a geo-location system. If you are in a country where deletion is not permitted, the delete function will not be active.
The deletion of the images, where possible, are stored in a LOG file, to prevent unauthorized actions.

Import images

To import images, press the button 

and will open the window, allowing you to import previously acquired images and upload them to the category, through the following dialog box:

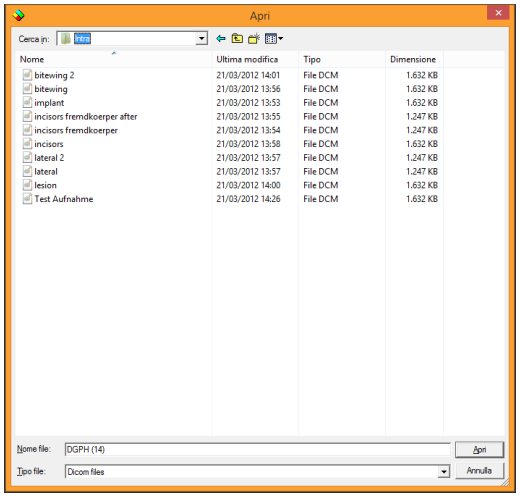
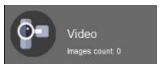


Figure 37

Press the "Open" button and the image will be automatically inserted into the patient image archive. You can import only DICOM file.

Video Set up

Clicking on Video 

, the software will try to find a videocamera connected to the computer. If it will find it, it will try to use it with the typical configuration. We remind that the camera is supported by TWAIN drivers file transfer or direct capture from the camera using VFW (Video for Windows) technology.

Click on the button 

of the Video cateogry, shown in the previous table, and select the camera connected. Then click on 

and the camera will work.

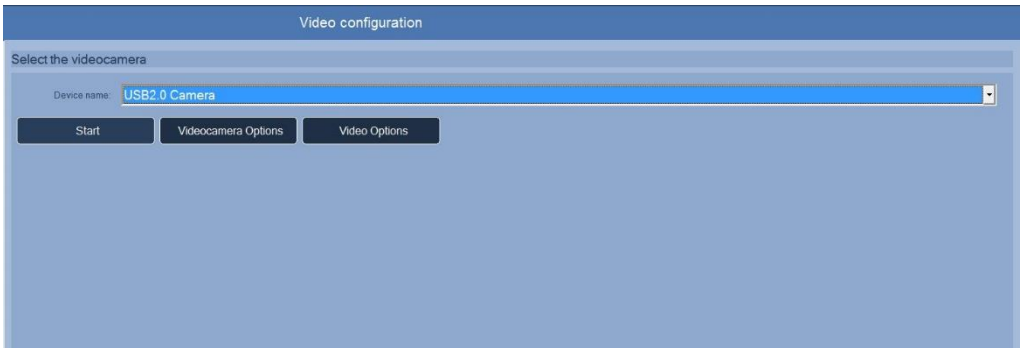


Figure 38

Example:



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Below are explained the the fixed commands at the top:

Command	Function
	Exit the image module to return to the patient's personal data
	Allows you to access the multiscreen mode
	Shows the patient's personal data
	Minimize the window

By clicking on one or more images, they will be selected and displayed with a blue check mark in the upper left corner, as shown in the following image.

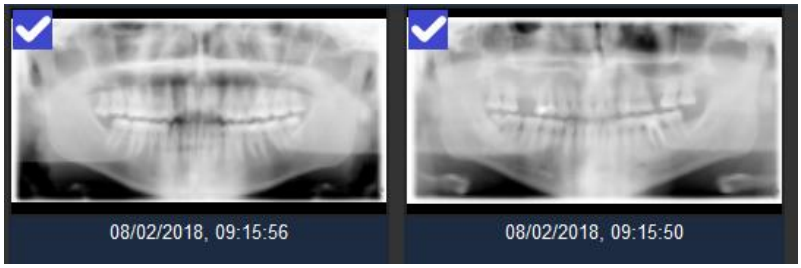


Figure 39

At the same time, will be activated the functions on the selected images and will appear the image button in the upper right corner of the image module

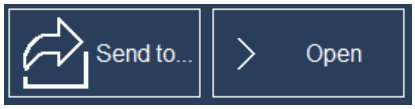
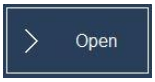
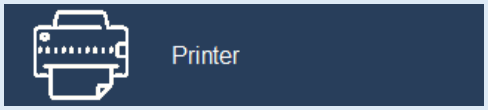
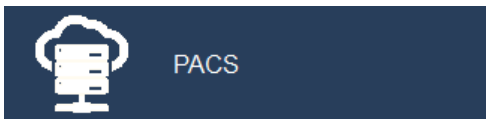
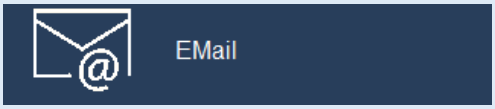
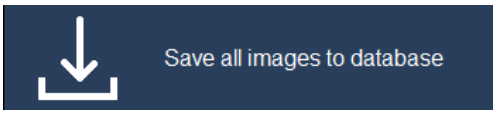


Figure 40

The  button, sends the image to the processing module; the same function can be performed by double-clicking on the image you want to open.

The 

button opens a small menu with the following functions:

Command	Function
	Exports the image to the folder you want.
	It exports the image to a CD, DVD or USB with the corresponding Viewer, this way the patient can view the images from his PC without installing a viewing program.
	Send the images to Printer
	Send the images to PACS.
	Sets the images for sending via e-mail
	Saves all the single images of the Full Mouth Series model in the database.
	Exports all images you select to a folder of your personal computer.

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By selecting 

will open the following window for the printer configuration:

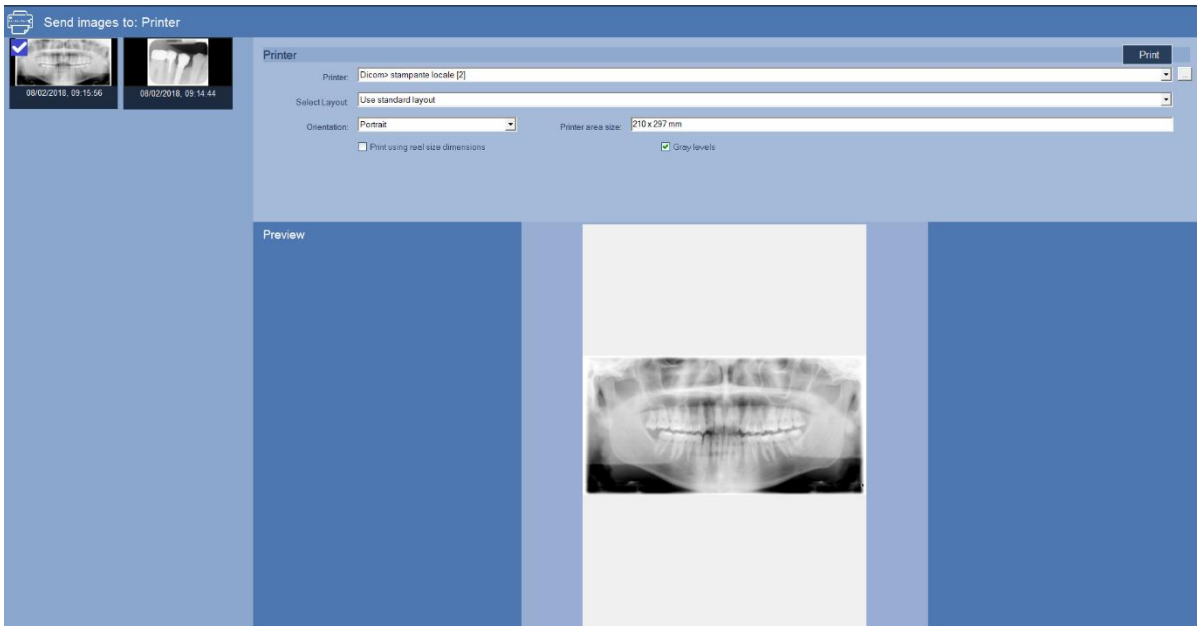


Figure 41

You can choose which image to display in the preview. To change it, just click on the corresponding preview frame on the left to see it appear in the central preview.
From this window you can set the print layout, annotations and customizations printing. For more information on customised printing, please refer to APPENDIX 3.
The program will print the image displeyed on the central preview.

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Images processing

By double-clicking on the image, or clicking the Open button after selecting it, the image will send to the **PROCESSING** module. To open several images at the same time, select them with the mouse click and then select Open, or double click on a selected image.

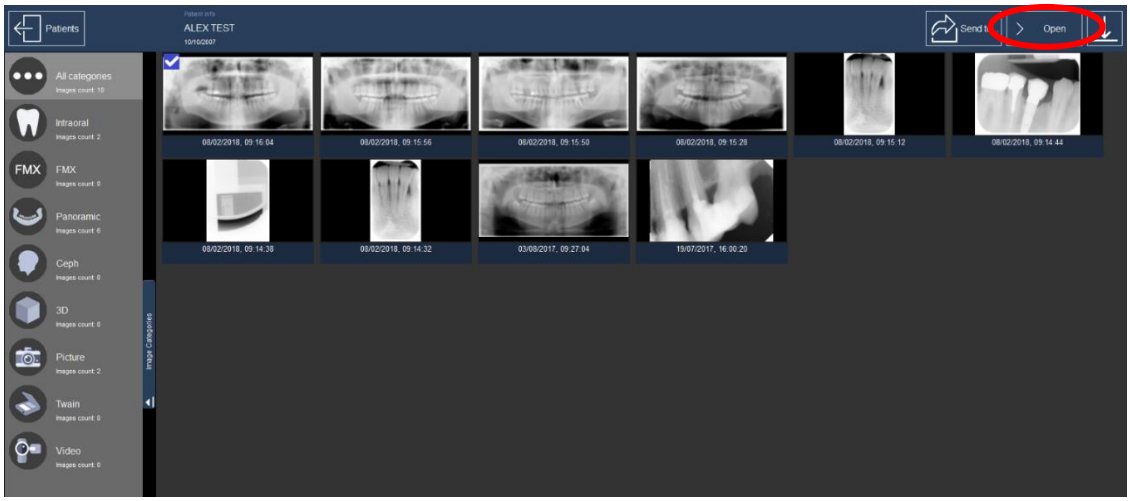


Figure 42

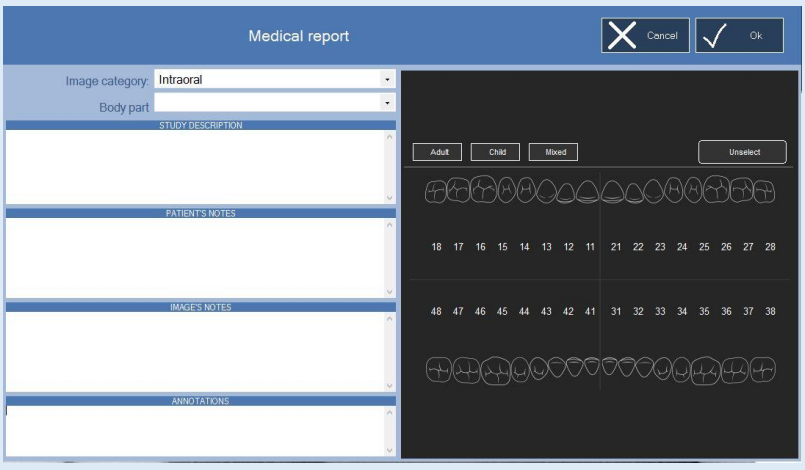
Then will appear the following window:



Figure 43

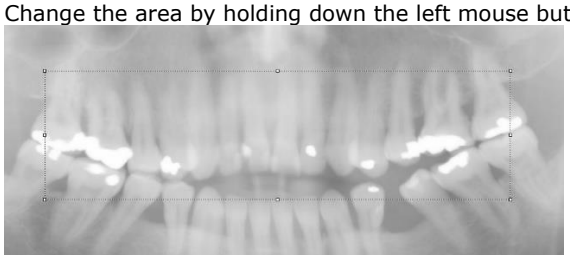
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The top bar shows the most used commands, always available for the user.

Icon	Function
	Close the selected image
	This function erases the last change done to the image reverting it to an older state.
	Returns to original images(without processing applied)
	Open the "single measure" command
	Shows a manu with the costum filters 
	Show the DICOM TAGS of the image
	Open the medical report:  This function opens the medical report. The category image will be automatically set by the program under the "Image category". For the "intraoral category" is displyed the teething preview,to select the affected teeth ando choose between: Adult,Child or Mixed. In addition you can insert the body part to which the report refers or other annotations about the image,the patient or the study description.
	Allows the image cropping.Proceed as follows:

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1. Click on the icon
2. On the image will appear a rectangle that is the area to crop the image.
3. Change the area by holding down the left mouse button on the small squares of the rectangle



4. Once cropping is complete, you will need to click on the button Confirm to apply the adjustments.

Remeve ALL the objects inserted on the image. If you want to remove a single object,you must select it and digit "CANC" on the keyboard.

On the left side of the processing window, there is the "Processing" tab indicated by the red arrow.



Figure 44

By clicking on it, will appear the following menu:



Figure 45

Filters

ADVICE:

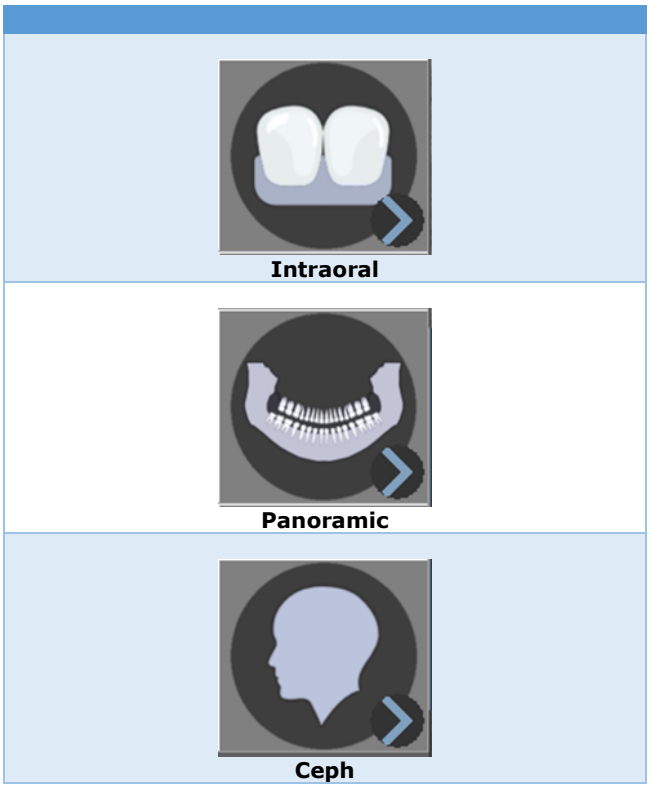
Image filtering may introduce artifacts that may compromise diagnosis. For this reason, diagnosis should only be carried out on the original image.

ADVICE:

Customizing filters can improve or degrade image quality. Deep-View® cannot perform any quality control of the result. It is your responsibility to create custom filters that help improve image quality.

Filters Categories

By clicking on "**Filters"** , You can apply filters for each of the following categories:



Advanced Filter

 By clicking on the blue arrow at the bottom left of each category, you can access the configuration part of the dental filter. Then will appear the following window:



Figure 46

Click on the button  you can access to the configuration of these three default filters: Standard, Bright and Dark.

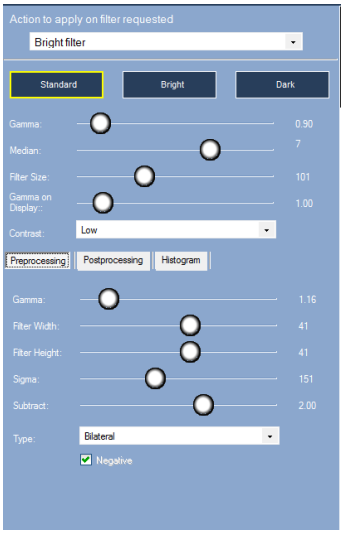


Figure 47

From the drop-down menu in the window shown in figure 50, you can choose the filter to apply when you press the button filter shown in the table of the chapter "*Filters cateogries*". You can test the effects of the changes made by clicking on the button 

. Then click on 

at the top right corner.

If you want to compare different filter applied to the image, click on "*Multy preview*" from the drop down menu and proceed with the changes. Then returning to the image processing page, click on the button  to display the window with all the various filters applied.

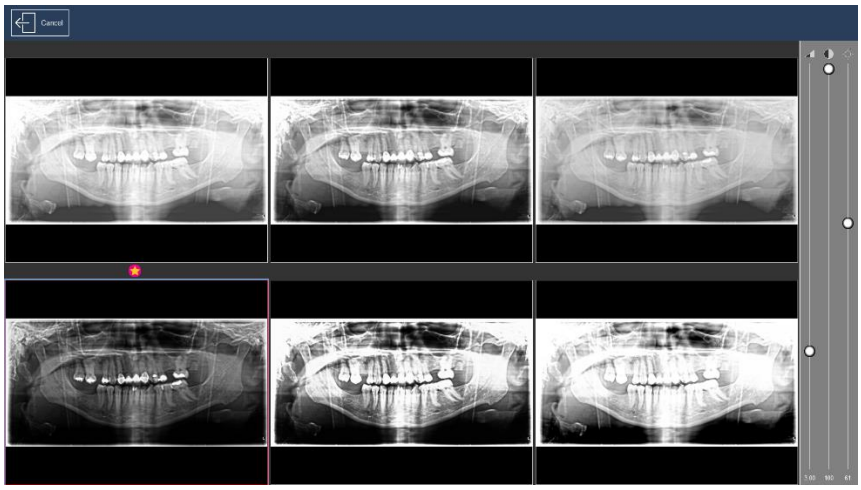


Figure 48

In the above window, you can change the brightness and contrast values of the selected image, which presents a star icon at the top.

Clicking on the buttons 

it is possible to apply the various filters (by default if they have not been modified or in "custum" version if they have been customized).
With the original settings, they have been configured to ensure optimal viewing of the images, in the **STANDARD**, **BRIGHT** or **DARK** versions.

Custom filters

 Click this button to access the filter application window, with the following menu on the left:

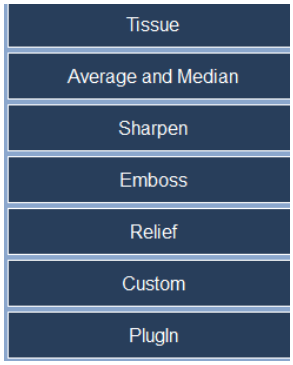


Figure 49

Tissue: this function allows you to highlight the tissues of the image

Average and Median: This function reduces image noise

Sharpen: This function highlights the contours of the image, particularly bone trabeculation. There are three default levels. You can set the value by customizing it with the scroll bar and pressing "Apply".

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Emboss: This function creates the bas-relief image. To view the filter effect continuously, check the "Continuous Variation" option and then move the scroll bar.

Relief: This function creates the image by highlighting contours in a marked way. To view the filter effect continuously, check the "Continuous Variation" option and then move the scroll bar.

Specifically, the "*Custom*" button allows you to access to the following commands:

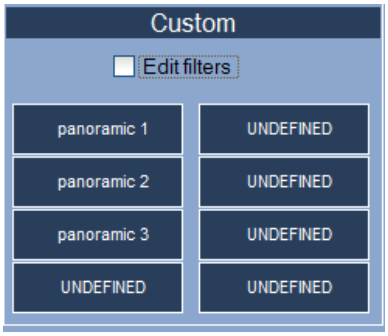
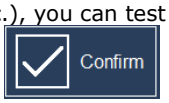


Figure 50

By clicking with the mouse on the single button (e.g.: panoramic 1, panoramic 2, panoramic 3 etc.), you can test the filter and immediately see the result on the left image. To apply the filter you need to click on the 

button on the top right corner, or exit the filter module by clicking on 

in the top right corner.

Checking box "*Edit filters*", it will be possible to customize the filter through the following window:

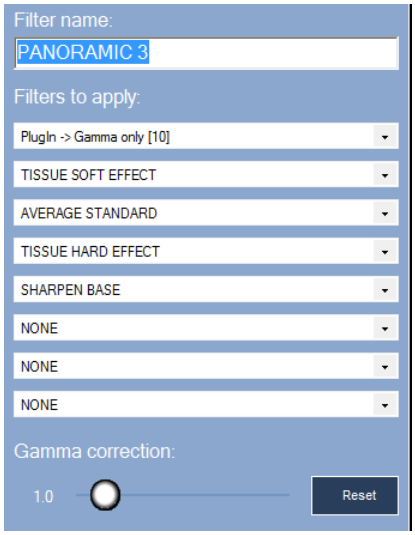


Figure 51

Measures

By clicking on the button 

, you can access the following functions:

ADVICE:

The radiographies are a two-dimensional representation of three-dimensional object places in the space, therefore their representation can be deformed in function of various factors, what enlargement, position of the object in comparison to the receptor of image, etc. These factors don't allow therefore a precision quantifiable of the trial.

Deep-View® is not a tool of measure because, also after the procedure of calibration of the measure in comparison to a known repere, the accuracy of the same measure cannot be guaranteed, that therefore it has to be considered as indicative.

 **Single:** Proceed in the following way:
- put the cursor of the mouse in the point from which you want to start the measurement and press the left key of the mouse;
- put the cursor of the mouse in the point of arrival of the measure and press the left key of the mouse; it will appear the effected measure.

To cancel an effected measurement is necessary to make click with the left button of the mouse on the measurement to cancel and press "**DEL**" of the keyboard.

 **Multi:** this function allows to effect multiple measures to the image.

Proceed in the following way:
- put the cursor of the mouse on the point from which you want to start the measurement and press the left key of the mouse;
- put the cursor mouse on the second point to measure and press the left button of the mouse;
- make the same operation for the third point and so on.

To finish the measurements press the right button of the mouse.

 **Line/Width.:** this function allows to effect the measure of the width of a part of the image.

Proceed in the following way:
- put the cursor of the mouse on the point from which you want to start the measurement of the width and press the left key of the mouse;
- put the cursor of the mouse on the point of arrival of the measure and press the left button of the mouse.

To cancel an effected measurement is necessary to make click with the left button of the mouse on the measurement to cancel and press **"DEL"** of the keyboard.

 **Line and Width/Height:** this function allows to effect the measure of the width and the height of a part of the image.

Proceed in the following way:
- put the cursor of the mouse on the point from which you want to start the measurement and press the left key of the mouse;
- put the cursor of the mouse on the point of arrival of the measure and press the left button of the mouse.

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To cancel an effected measurement is necessary to make click with the left button of the mouse on the measurement to cancel and press **"DEL"** of the keyboard.

 **Area:** this function allows to calculate a determined area of the image.

Proceed in the following way:
- put the cursor of the mouse on the point from which you want to start the measurement and press the left key of the mouse;
- put the cursor of the mouse on the second point of the measure and press the left button of the mouse;
- put the cursor of the mouse on the point of arrival of the measure and press the right button of the mouse. The calculation of the selected area will be visualized.

To cancel an effected measurement is necessary to make click with the left button of the mouse on the measurement to cancel and press **"DEL"** of the keyboard.

 **Angle:** this function allows to calculate the angle of a part of the image.

Proceed in the following way:
- put the cursor of the mouse on the point from which you want to start the measurement and press the left key of the mouse;
- put the cursor of the mouse on the point of arrival of the measure and press the left button of the mouse.

To cancel an effected measurement is necessary to make click with the left button of the mouse on the measurement to cancel and press **"DEL"** of the keyboard.

 **Parallel lines:** this function allows to calculate the distance among two parallel lines.

Proceed in the following way:
- put the cursor of the mouse in the point from which you want to start the measurement and press the left key of the mouse;
- put the cursor of the mouse in the point of arrival of the measure and press the left button of the mouse.
- proceed in the same way to draw the parallel straight line.

To cancel an effected measurement is necessary to make click with the left button of the mouse on the measurement to cancel and press **"DEL"** of the keyboard.

 **ROI:** This function allows you to calculate the value of the grey levels within a ROI

Proceed as follows:
-position with the mouse cursor on the point of the image where you want to calculate the ROI, then press the left mouse button.
-Resize the ROI to your liking.

The program will display the values.

To cancel an effected measurement is necessary to make click with the left button of the mouse on the measurement to cancel and press **"DEL"** of the keyboard.

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 **Calibrate:** This function allows you to calculate the correct measurement of a part of the image.

Proceed as follows:

-Take a measure then select it.

- If the measurement is not correct, click on "Calibrate" and the following window will open:

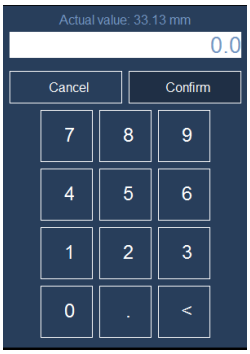


Figure 52

Insert the correct value,then click on 

.

Objects

Clicking on the 

, you can access the following functions:

 **Arrow:** This function allows you to insert arrows in the image and also inserting a text that will appear near the arrow.

Proceed this way:
-position the mouse cursor on the point of the image from which the arrow is to start;
-position the mouse cursor on the point of the image where the arrow will end, the following window will appear:

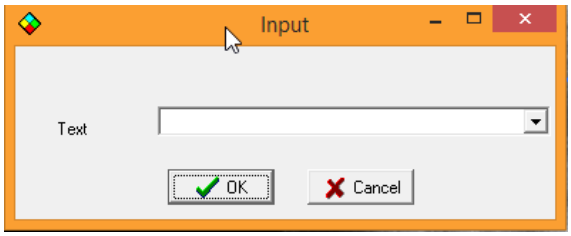
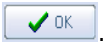


Figure 53

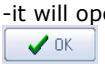
Enter the text to be displayed next to the arrow and press 

.

To remove an arrow with its text click with the left mouse button on the arrow to be deleted and press the "**DEL**" on the keyboard.

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 **Text:** This function allows you to insert text on the image.

Proceed this way:
-Position the mouse cursor on the start point (top left corner of the box) where you want to insert the text and press the left mouse button;
-Position the mouse cursor on the end point (lower right corner of the box) where you want to insert the text and press the left mouse button;
-it will open a window where you can insert the text to be displayed on the image. Then press


To remove the text entry, click the left mouse button on the text to be deleted and press the "**DEL**" on the keyboard.

 **Objects:** allows you to add a graphic file. A dialog box will open to select the image to be inserted.

 **Implants:**



ADIVCE:

The implant simulation doesn't owe a diagnostic tool but only a tool of visual evaluation.

This function simulates implant placement for a patient.

Pressing the button  will add a lower jaw implant as shown in the following figure:

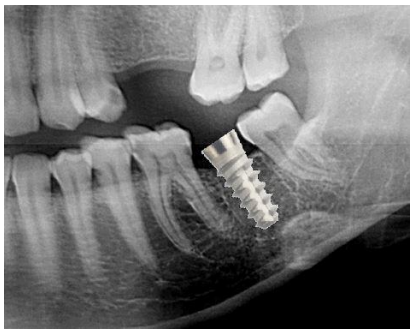
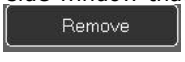


Figure 54

To move the implant, press the left mouse button and, holding down the button, move the implant to the correct position.

To change the inclination of the implant, position the mouse cursor at the bottom of the plant so that it becomes an arrow, then press the left mouse button and change the inclination of the implant.

Both the diameter and height of the implant can be modified with to the side window that appears after selecting the implant icon. To display the changes made, click on 

or on 

to remove them.

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ADVICE:

The measurements of the system are to be considered as indicative, since it is **not possible to guarantee its accuracy.**

By clicking the button  will add a higher jaw implant as shown below

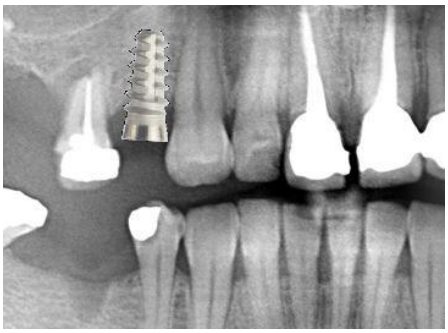


Figure 55

Implant property

Both the diameter and the height of the implant can be changed. Select the implant icon,on the the left side will appear a window where you can apply the chenges.



After you applying the changes click on  or click on  to delete the implant.

Orientation

By clicking on the  button, you can access the following functions:



Figure 56

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 **Mirror Orizontal:** this function allows to effect the speculate horizontal of the image.

 **Mirror vertical:** this function allows to effect the speculate vertical of the image.

 **Rotation 90° to the left:** this function allows to rotate to the left the image of 90°.

 **Rotation 90° to the right:** this function allows to rotate to the right the image of 90°.

LUT

On the right side of the processing window, there is the following "*LUT and Magnify*" tab indicated by the red arrow:



Figure 57

From this window,you can access to these functions:

 **GAMMA VALUE:** Changes the contrast and brightness of the image using the "gamma factor".
This is a more precise method than the simple contrast and brightness function. Gamma is an exponential, non-linear function and therefore optimizes images better.

To change the contrast and brightness, move the mouse to the center of the image, then press and hold the left mouse button. Move your mouse to change the contrast and brightness.

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 **CONTRAST:** changes the contrast of the image by increasing or decreasing it.

 **BRIGHTNESS:** changes the brightness of the image, increasing or reducing it.

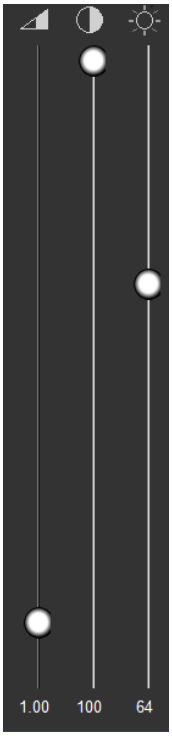


Figure 58



ADVICE:

Changing the contrast and brightness may introduce artefacts that affect the diagnosis. For this reason, diagnosis should only be carried out on the original image.

Window Level



Figure 59

From the window shown in the figure above, you can access the following functions:

Invert: allows you to invert the image from positive to negative and vice versa.

WL full Calculates the optimization of gray levels across the image.

WL Top Calculates the optimization of gray levels based on the top of the image.

WL Bottom Calculates the optimization of gray levels based on the lower part of the image.

WL Center Calculates the optimization of gray levels based on the central part of the image

Magnifications

ADVICE:

The size of the image represented on the screen should never be considered as a precise relationship with the actual size of the image. The image cannot be measured with rulers or other instruments resting on the monitor.

From the menu of figure 63 below the "Window Level", you can access a series of functions.

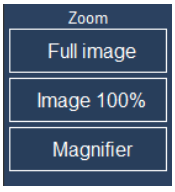


Figure 60

Full image If the image has been enlarged using the Image 100% function or the mouse wheel, you can return to the full screen by clicking this button.

Image 100% This function allows you to enlarge the image to its total size. Each pixel on the screen corresponds to one pixel of the image.

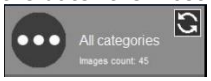
Magnifier Enlarges the part of the image on which the mouse cursor is located by 200%. Press the left mouse button on the image and a function similar to a magnifying glass will be applied.

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Images Archive

Sequential Archive

The sequential archive is a representation of patient images that are not specifically organized. They can be displayed by clicking on the 

button. Their ordering is determined by the date: the most recent will be the first in the list. On the right side of the single category button, there is a little icon 

to update the content of the category.

To process an image of the sequential archive, double-click on the preview. In this way the image will be enlarged in the processing window for a better use of all the functions of the program.
It is possible to insert more than one image in the processing window, selecting each of the images in preview, as shown in figure 66.

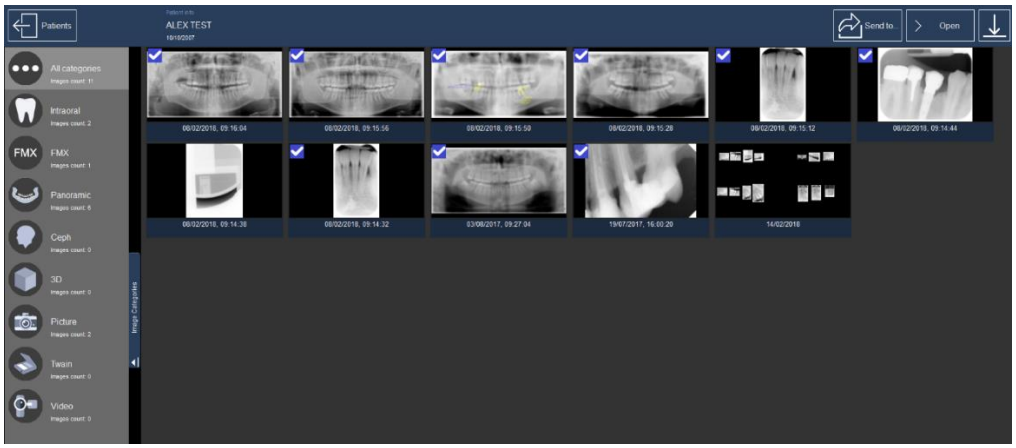
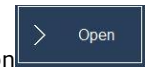


Figure 61

Then click on 

to access the processing window, which automatically distributes the images in the available space, as shown in the figure below.

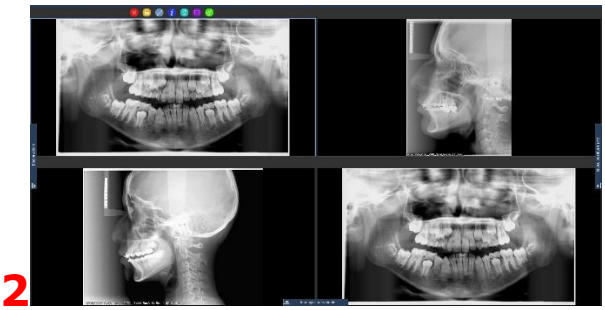
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Figure 62

The most used functions appear automatically at the top of the selected image. It is also possible to focus on processing some of the images by hiding the others. Proceed as follows:
- Click on the drop-down menu indicated by the red arrow in figure 68.
-Unselect the images you want to hide from the processing page.
In addition, double clicking on a single image to enlarge it (1) or returns where it was (2), as shown below:





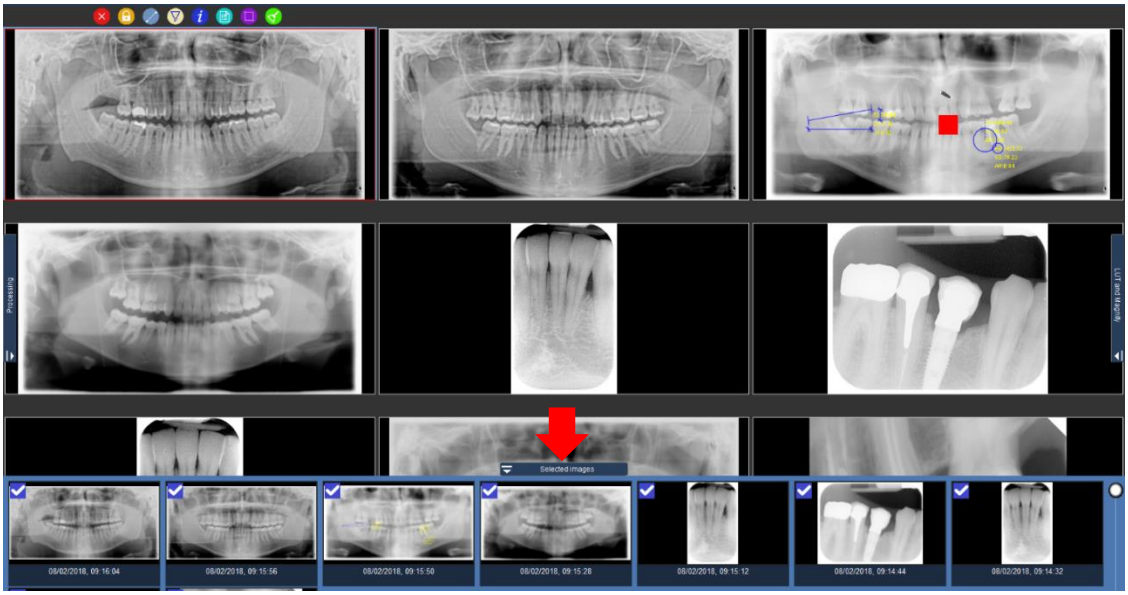


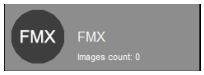
Figure 63

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Full Mouth Series

ADVICE:

The following function may not be available for the program version in use.

The FMX (Full Mouth Series) 

function allows you to acquire images from the status, directly. Deep-View® allows the user to customize the sequence and number of images acquisition.
Click on the "*FMX*" button in the sidebar of the image module as shown below

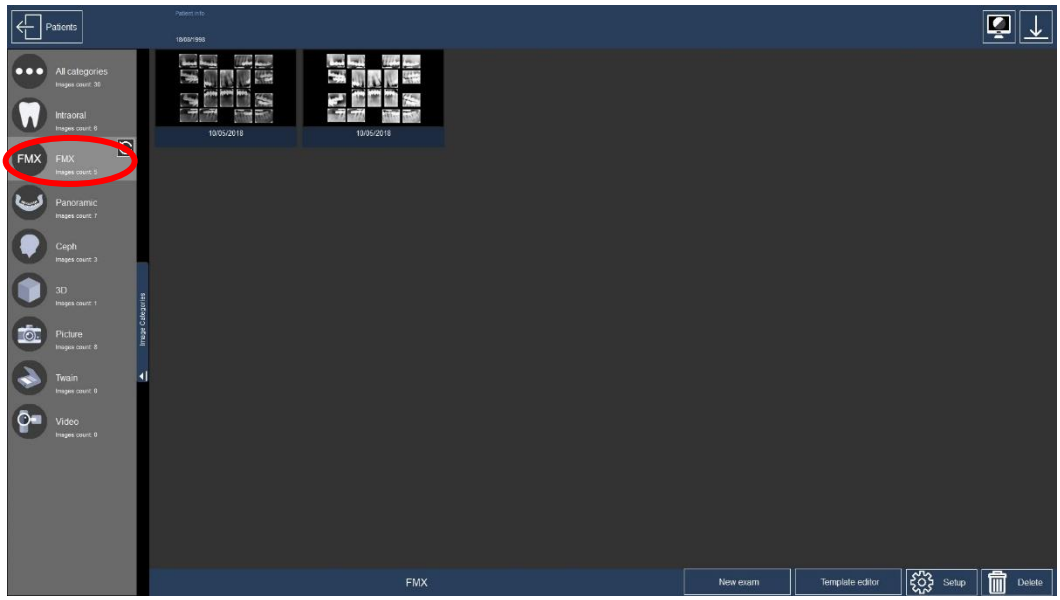
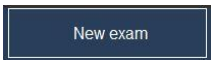


Figure 64

At the bottom right corner of the window, the 

and 

buttons. "*Templete editor*" allows you to create/edit a Full Mouth Series template. "*New exam*" allows you to use an existing template for a new acquisition. Deep-View® already provides a range of ready-to-use templates.

Create a new templete

To create a new Full Mouth Series template, click on 

and then on 

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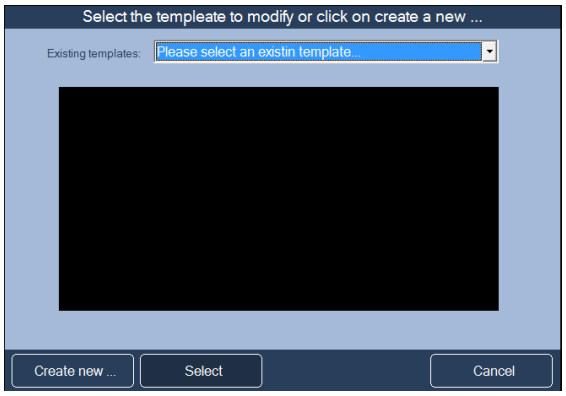


Figure 65

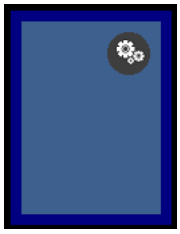
Now will open another window, which presents at the bottom the functions shown in the figure.



Figure 66

Load from file allows you to load an existing image from your personal computer.

Add box allows you to add a box, which looks like shown on the right.
(The dimensions can be changed by holding down the left mouse button on the sides of the box).



Remove box allows you to delete the box after selecting it.

Figure 67

Save as.. allows you to save the created template to your computer.

Save as Model allows you to save the template created within the program and assign it a name.

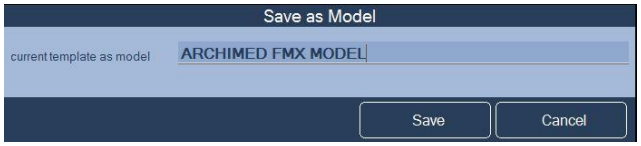
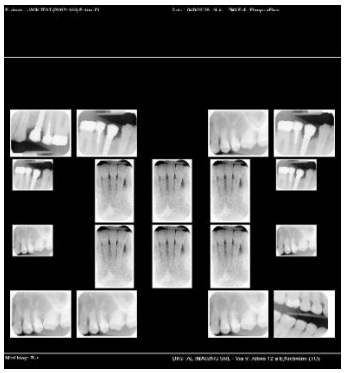


Figure 68

Border Size: This button allows you to modify the frame around the printed page. A high number corresponds to a thicker border and vice versa (Figures below). When this parameter changes, the distribution of the boxes will keep the right proportion to the area. You can use this parameter to adjust the layout on the printer.

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Border Size:100


Border Size: 200

To edit the border, insert the number then click on "Save":



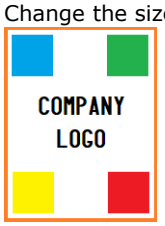
Logo: From this window you can add a logo of your clinic by click on Logo 

button.



By default, the logo will appear at the top left of the screen, but you can:

- Drag it by holding down the left mouse button on the logo box.
- Change the size of the box by holding down the left mouse button on one side of the box:



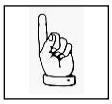
- Anyway, on the FMX template the logo size will have the right proportion to the area.

If you want to remove the logo, click again on the button 

.

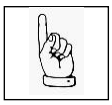
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If you want to import a logo from any computer folder, double click on the logo box. It will appear a window where you can select an existing logo from the drop-down menu, or import one logo from your computer by clicking on Import



NOTE:

The logo can only be imported in Bitmap file format.



NOTE:

We remind you can start the acquisition after setting the sensor configuration. (Refer to "*Sensor Configuration*"

Full Mouth Series Images processing

To process the Full Mouth Series images, double-click the box of your choice. You will see the enlarged image, as shown in the following window:

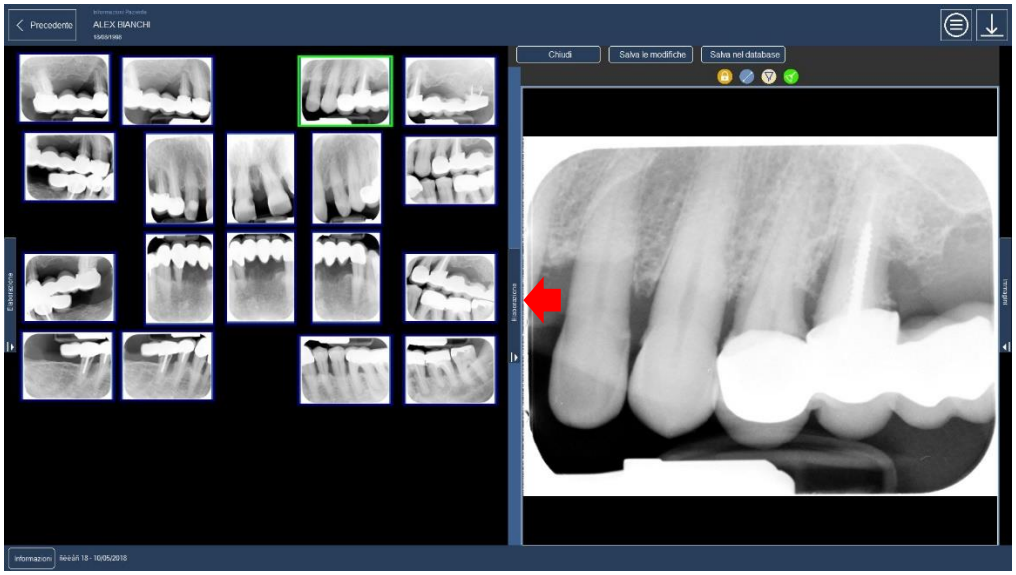


Figure 69

Click on the tab indicated by the red arrow in the figure above to access the complete menu of image processing and described in the paragraph "*Image processing*".

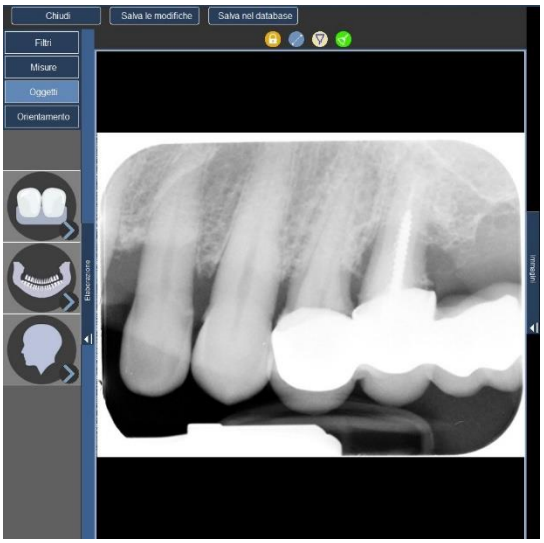


Figure 70

Three buttons appear at the top of the image and perform the following functions:

 Removes all objects inserted on the image. If you want to remove only one object, simply select it and press "DEL" from the keyboard.

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 Allows you to take single measure of the image.

 Returns the image to its original condition (without the processing.)

Click on the 

button at the top of the icons to save the changes and update the Full Mouth Series model you are working on.

Instead, clicking on the button 

after processing, the image will be saved within the reference category (ES: INTRAORAL).
To simultaneously display the **FMX model**, the **processed image** and the complete **patient image archive**, from the same window, click again on the "Images" tab shown in the figure above.

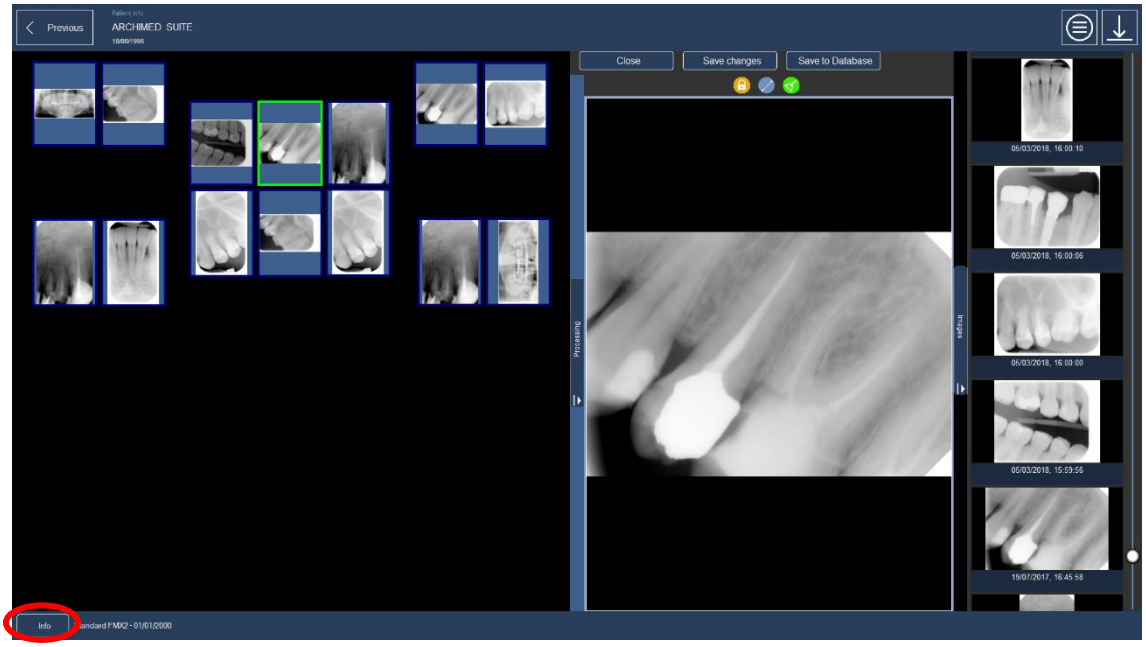


Figure 71

It is possible to rename or modify the date of the FMX model , by clicking on the "Info" button in the bottom left corner. Type the new text and click on 

.

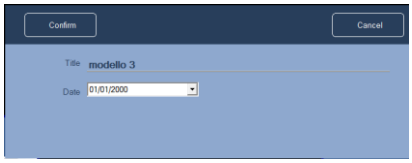


Figure 72

On the left side of the Full Mouth Series model there are the processing buttons indicated by the red arrow of the figure below:



Figure 73

 **Mirror Orizontal:** this function flips horizontally the image

 **Mirror vertical:** this function flips vertically the image.

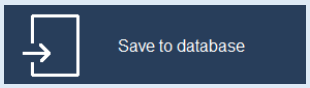
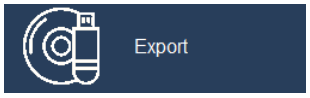
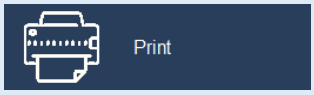
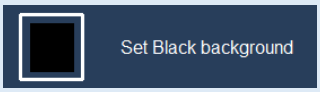
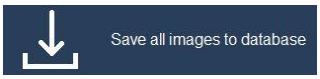
 **Rotation 90° to the left:** this function rotates the image to the left of 90°.

 **Rotation 90° to the right:** this function rotates the image to the right of 90°.

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Full Mouth Series options

In the image processing window in the top right corner you can see the button  that allows you to access some important functions described below.

Icon	Function
	This function allows you to save high resolution images in the database
	This function allows you to export selected images high resolution . After clicking the button, select the destination folder of the exported files and the graphic format.
	This function allows you to print selected images
	This function changes the background color of FMX to white. This is useful when you need to print images scanned using a non-DiCOM printer, to save the toner .
	This function allows you to set the black , which is more convenient to work with, especially if you have a DICOM printer.
	This function saves all the images in the patients database inside the intraoral category.
	This function allows you to export alla the images to the personal computer in a specific folder with the patient name record.



NOTE:

The Save to database function, automatically saves high-definition images within the "*Picture*" category.

The Full Mouth Series version allows you to drag an image, as shown in the figure below, from one box to another one (DRAG AND DROP). Then select the image to move by holding down the left mouse button and release the button in the destination box.

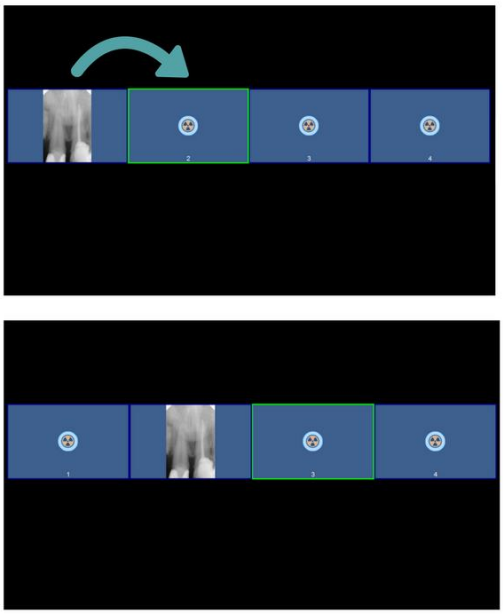
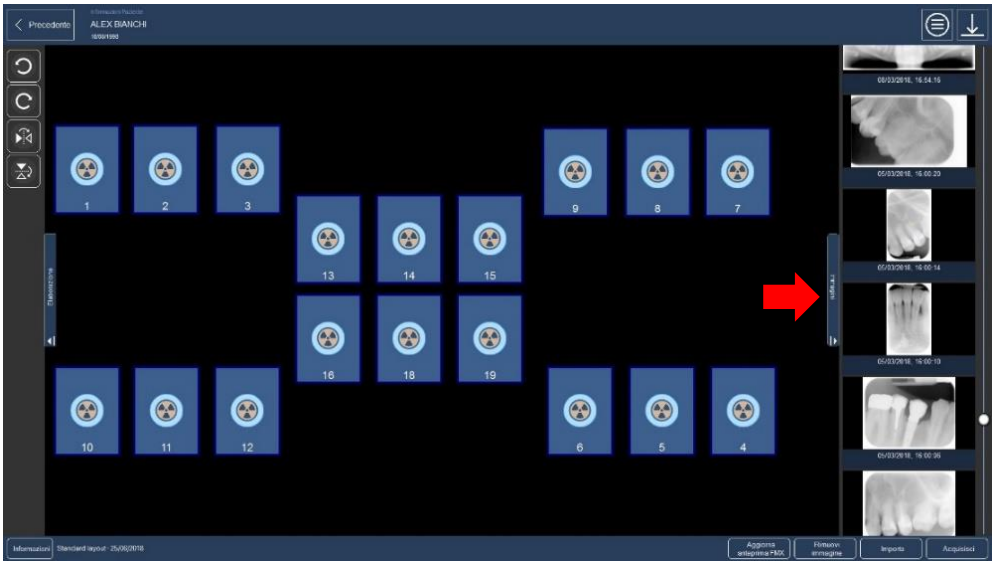


Figure 74

If you want to transfer an image to full mouth series model, from the patients archive, proceed as follows:

1. open the right side tab shown in the figure below:



2. Select and drag and drop the image to the box you want.

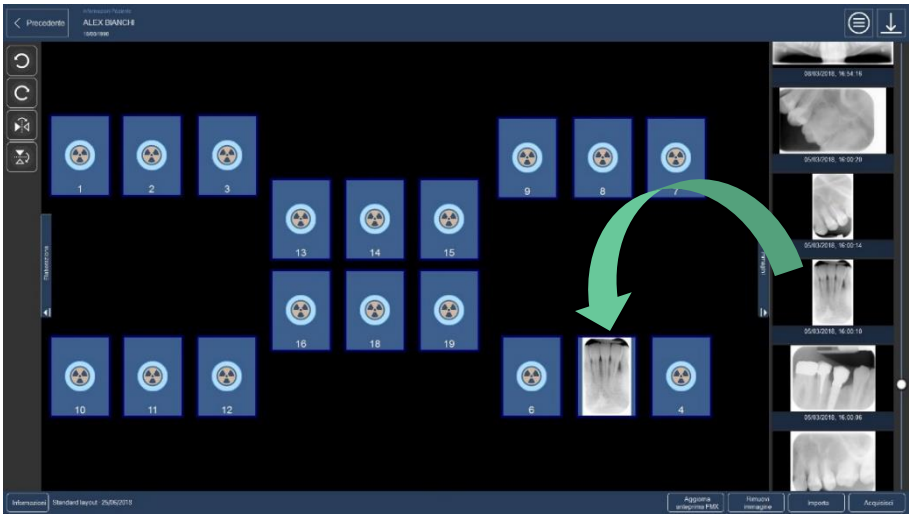


Figure 75

You can also switch the images position by dragging the image to the box you want  EXAMPLE:

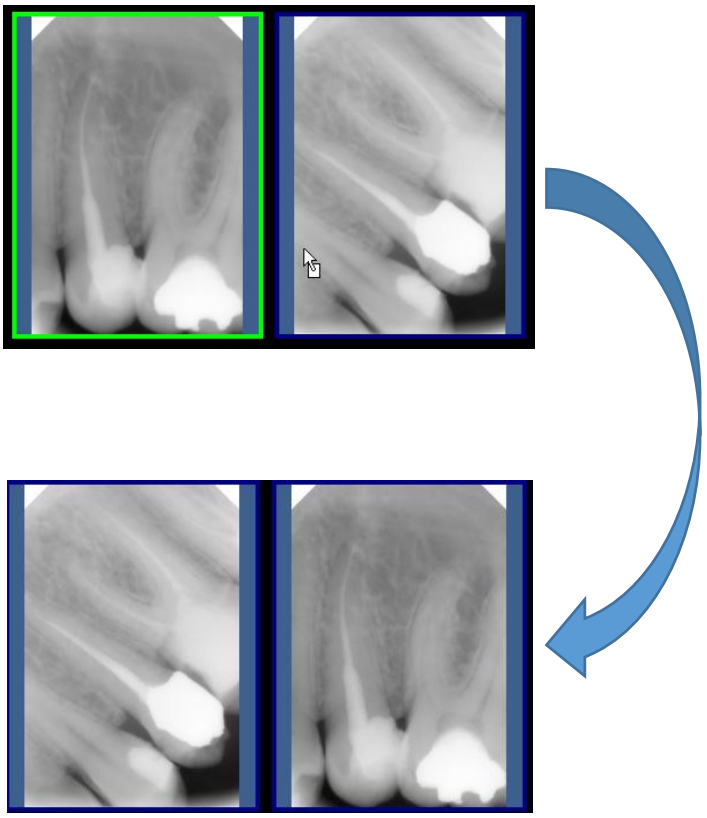


Image acquisition

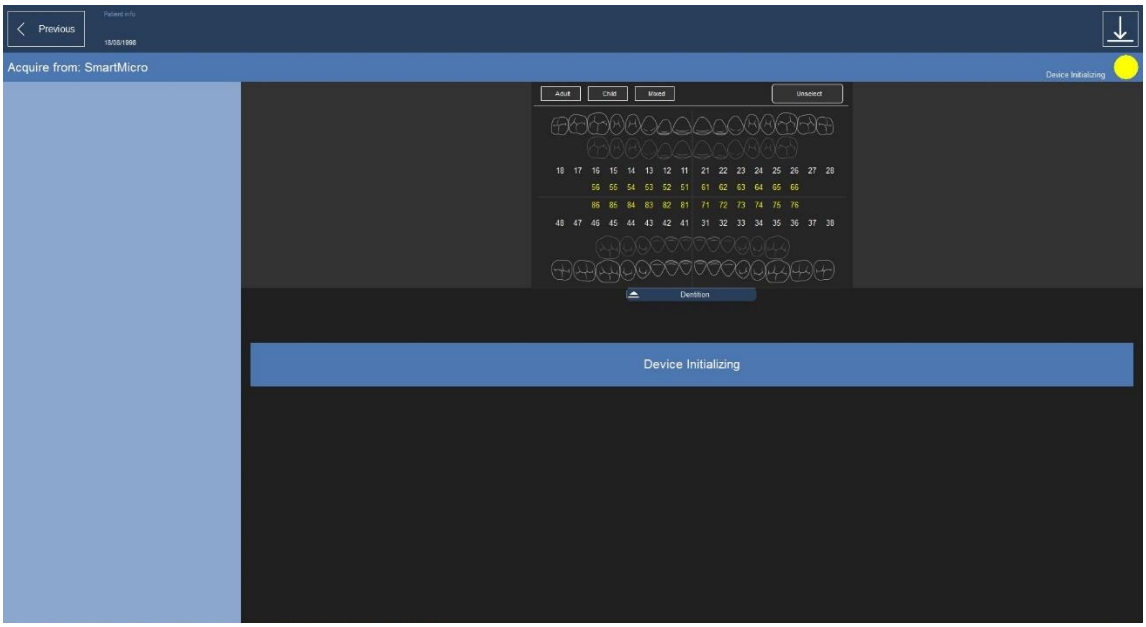
The images acquisition can start after the sensor configuration or the device you want to use to acquire. Refer to *APPNEDIX 1-Sensor configuration* the chapter "Images Setup" for more details. You can acquire the images from: intra-oral sensor,scanner,photo camera,camera and panoramic.

X-ray Acquisition

To acquire the endoral X-ray images, click on the category 

and then select the type of sensor that has been configured in the bottom right corner. Wait for the sensor to initialize and start the X-ray only when the round LED in the upper right corner turns green.

At the top of the acquisition screen appears the mapping teeth as shown below. Here you can select the affected teeth ando choose between three teething types: Adult, Child or Mixed.



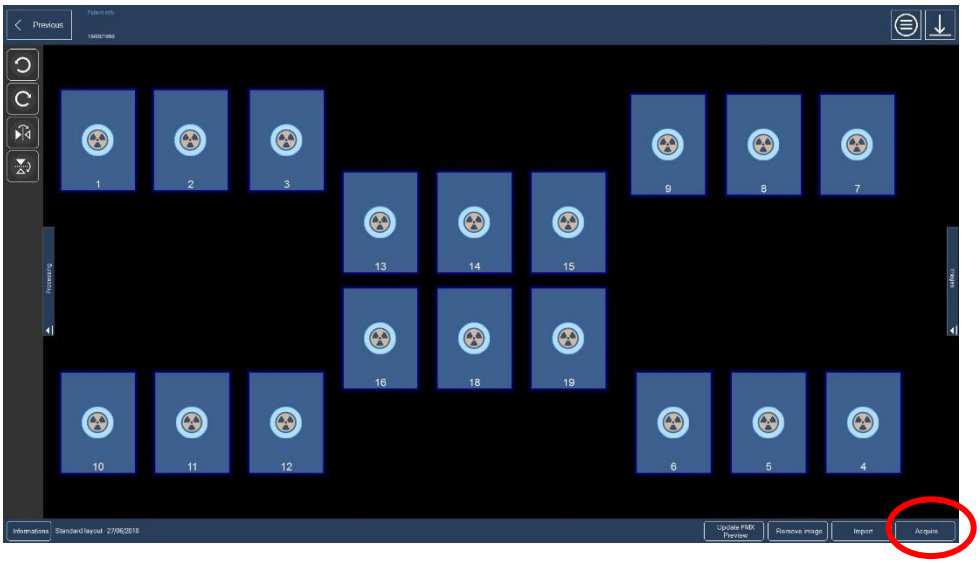
Full Mouth Series Acquisition

To start acquisition from a Full Mouth Series model, click on the category 

then select and choose the layout. To start the acquisition double click on the starting box of the acquisition or select the box and then click on 

the bottom right, as shown in the figure below.

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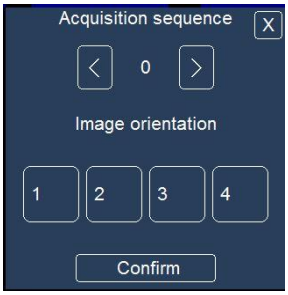
If more than one sensor is configured, select the connected sensor and wait for the signal to start the acquisition. The acquisition order is automatic and is defined by the numerical sequence of the boxes, however it is possible to vary the order by selecting, with the mouse, the box from which you want to acquire. If, for example, after box number 4 you want to acquire the image in box number 9, you have to select the same one. Subsequently, the acquisition will continue in numerical order, then 10,11,12 etc..

Acquisition order of Full Mouth Series

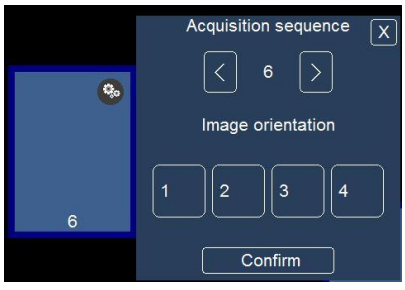
It is possible to set the acquisition order of the boxes from an existing one template or a new template. Proceed as follows:

1. Click on 

2. Create a new template or select an existing one
3. Select the wheel inside the box. It will appear the following window:



4. Use the two side arrows to set the acquisition order, then click on 
.
Example:



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Panoramic Acquisition

To acquire the panoramic images, click on 

then select the configured device at the bottom left

NOTE:

Deep-View® connects to software modules provided by device manufacturers (SOUP classified). These modules interface with the devices and allow you to capture images. Deep-View® is not responsible for any malfunction of the SOUP modules.

Before using a device, refer to the table "Appendix 1. Digital sensors that can be connected to Deep-View®". This table shows the data of the validated operating system. Using a personal computer or operating system other than one specified in the table, will result in improper use of the Deep-View® product.

Ceph Acquisition

Using the button 

and then selecting the icon of the device used in the lower right corner, the acquisition of the teleradiography will be initialized.

3D Acquisition

This function allows you to acquire the images from a cbct system. Click on the button 

Photo Camera Acquisition

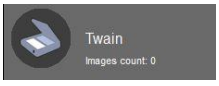
Clicking on the button 

and then on the box corresponding to the photo camera.

NOTE:

To import the images from the computer, refer to the chapter "*Import Images*".

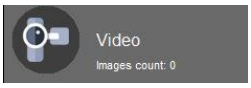
Scanner Acquisition

Using the button 

to start the images acquisition from the scanner using the TWAIN interface. After clicking on this button, it will appear a window that is for the scanner you purchased. For more details please refer to the scanner operation manual.

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Video Acquisition

By clicking on this button 

and then on the Camera icon connected and configured. It will appear a window with the video recording area in the center and the following buttons at the top of the screen.



The button 

begins the video acquisition. The button 

allows you to save it in the Video category.

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3D Module

The 3D module allows you to view CT or CBCT exam images in 3D.
To use this function you must have the 3D module of the program. To process a 3D exam, you can import it from a disc or capture it via the equipment that can be interfaced to Deep-View®.

ADVICE:

The reconstruction of the paraxial images occur on the perpendicular of the panoramic curve drawn by the user. The distance among the reconstructed cuts and the dimension of the perpendicular segment to the panoramic curve, that determines the width of the paraxial image, are configurable parameters from the user.



The maximum error produced by the reconstruction is two pixels. The error maximum converted in measure is equal to the dimension of the voxel in the axial plan of the axial image multiplied for two. The dimension of the voxel, converted in millimetres, is accessible from the menu "Project" to the voice "Information Project". The parameter "Thickness image" it points out the dimension in millimetres of the voxel. Supposing a dimension of the voxel of 0.170 mms, the maximum error introduced by the reconstruction will be equal to 0.170 x 2 = 0.340 mms.

The error of the reconstruction is the theoretical error supposing that the patient has correctly been positioned, according to the indications of the furnished by the producer of the X-ray instrument, and that the reconstruction has been successfully.

Deep-View® is not a tool of measure because, also after the possible procedure of calibration of the measure in comparison to a known repere, the accuracy of the same measure cannot be guaranteed, that therefore it has to be considered as indicative.

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Import a 3D exam (CT or CBCT)

Click this button to import the exam. The application will show the following window:

Select the folder or the CD in which the images are saved and press the button "Starts search". The application will search in the selected path and in any subfolder for any exams. If you won't find any exams, you can try to uncheck the option that allow to search only in file with ".DCM" extension. If any exams will be found, the application will display all the found exams with a short description. To open the preview of the exam you can double click on the reference in the list.

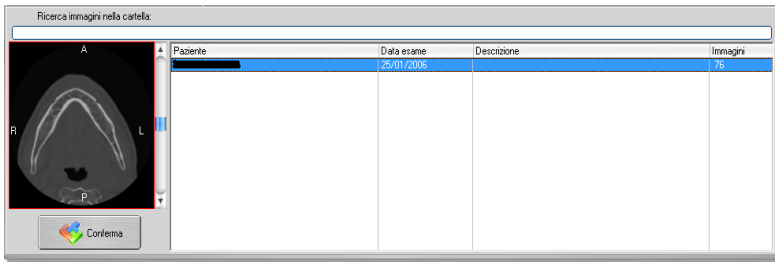


Figure 76

If you want to import the exam showed in the preview windows, please click on "Confirm".
The application will import all the axials images of the selected exam. When it finish to import the images in the patient's database, the application will automatically start the 3D reconstruction.

3D reconstruction window

The 3D reconstruction windows has this layout.

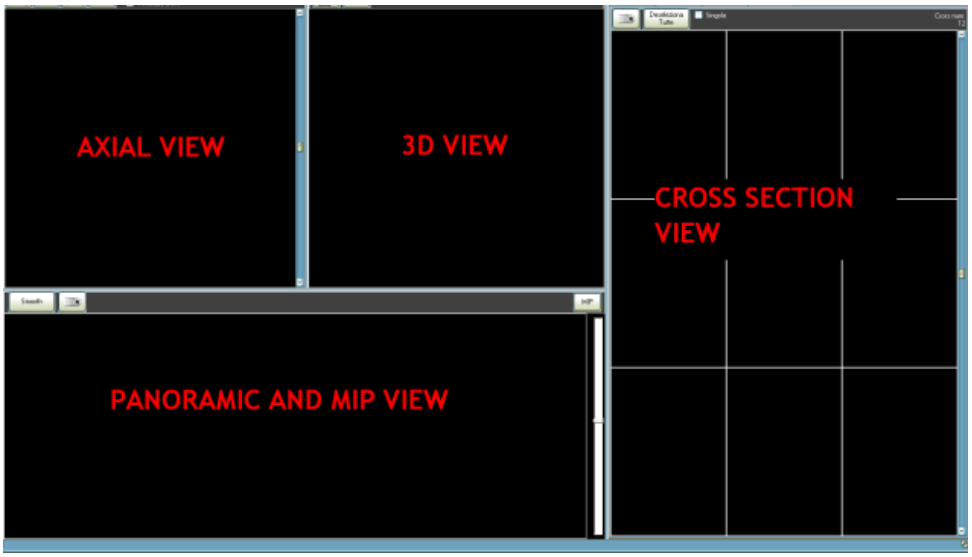


Figure 77

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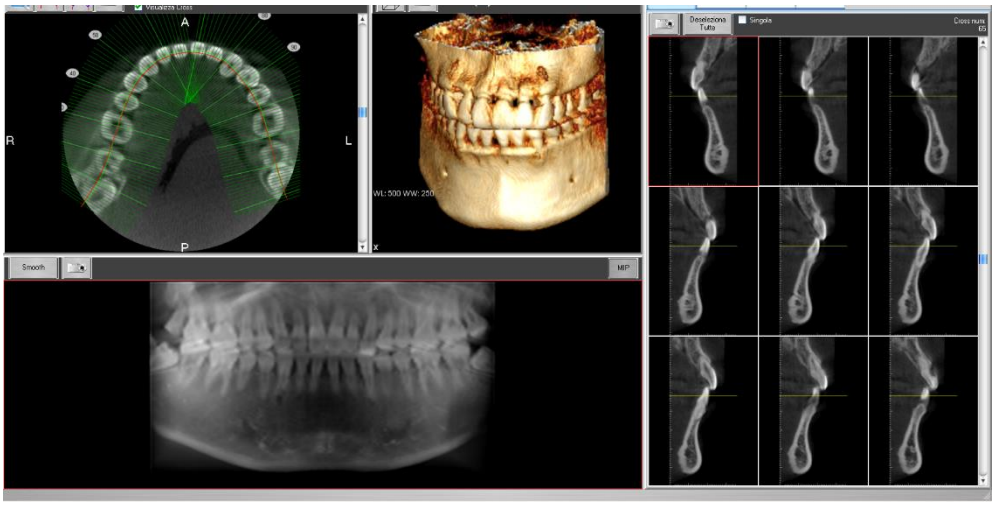


Figure 78

ADVICE:

The 3D reconstruction uses the information of the axial images. If this information are wrong or they contain any mistake, unpredictable result are expected.
This module is intended only for evaluation and this is not a system fir surgery application.
The maximum error that this application will introduce is 2 pixels. The maximum linear error is the pixel size 2.

Create the panoramic arc

The first step of the 3D reconstruction is to draw the panoramic arc. The panoramic arc is a curve that represent the position of the dental arc. Before you start drawing the panoramic arc, please select an axial image with the bone. The optima position of the panoramic arc is in the middle of the bone tissue.

To draw the panoramic arc on the axial image press the following button

Move the mouse arrow on the image and press the left button to set all the points of the panoramic arc. When you finish to draw the panoramic arc press again the button. The application will calculate all the cross sections and the panoramic section.



You can also use this option to modify an existing panoramic arc. To modify any point, move the mouse arrow on the point to move, click with the left mouse button and drag it to the new position.

Moving the scroll bar of the cross images, you can show the cross images around the panoramic arc. In the same time the application will draw the references of the selected cross on the axial view and on the panoramic view. You can also change the active cross section clicking on the panoramic view.

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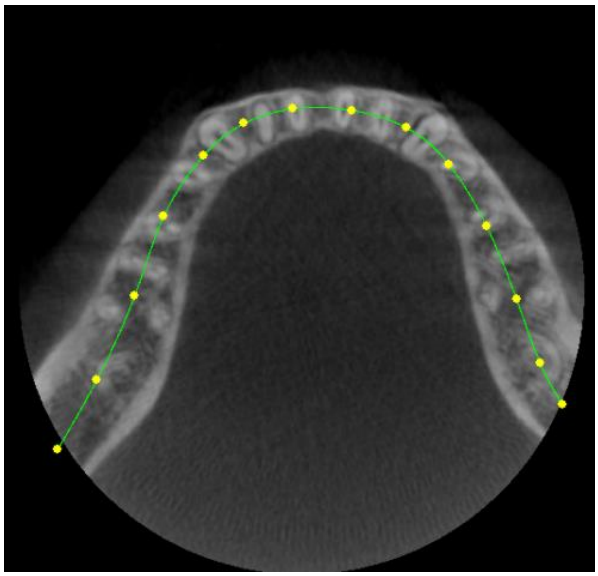
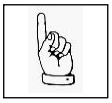


Figure 79

If you need to hide the panoramic arc, uncheck the option "Display Arc". If you want to hide the cross image near the axial view uncheck the option "Display Cross."

 Press this button to delete the panoramic arc and to draw a new one.

Axial view



NOTE:

The visualization of the axial images is arranged as if the patient was observed by the feet toward the head.

In the Axial view you can use these options.

- Scroll the images from top to bottom and bottom and from bottom to top. To scroll the images you can use the scroll bar on the right of the axial images or you can use the mouse wheel.

- Arrange the brightness and contrast. To modify these values click and hold the right mouse button and move it on the axial image. These changes will affect all views.

- Press the CTRL key and hold it, than press the left mouse button. The application will display the information for the pixel position and the pixel gray level value.

 Press this button to enlarge the current axial image.

 Create a snap shot of the current axial. The snap shot repository can be used to create a medical report.

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View

In the 3D view you can use these options.

- Rotate the orientation. Click and hold click the left mouse and move it. The volume orientation will change according the mouse movement.

- Zoom in and out. You can use the mouse wheel to enlarge and reduce the 3D volume view.

- Click and hold the mouse wheel and move the mouse. The volume will move according the mouse movements.

- Change the gray level represented. On the top of the 3D view is a range selector that allows you to select the minimum and the maximum gray level to display. This option is very important to select the tissue density to display. You can display for soft tissue, moving the range selector to the left, the metals, moving it to the right.

In the 3D menu "3D Options" there are all the function for the 3D view.

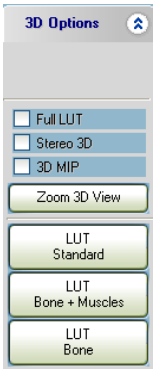


Figure 80

3D Full LUT

Find a position for the range selector to display the most important information.

3D Stereo 3D

Enable / Disable the stereo 3D option. When this option is enabled you can see a real 3D image. To get the correct effect you need special glasses with one red and one green glass.

3D MIP

Display the 3D MIP (Maximum Intensity Projection). This option allow you to see inside the volume.

Zoom 3D View

Make a zoom of the 3D View.

LUT Standard

Apply the LUT gray levels standard.

LUT Bone and Muscles

Apply the LUT to enhance the Bone and the Muscles.

LUT Bone

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Apply the LUT to enhance the Bone.

 Display a cube to crop the volume.

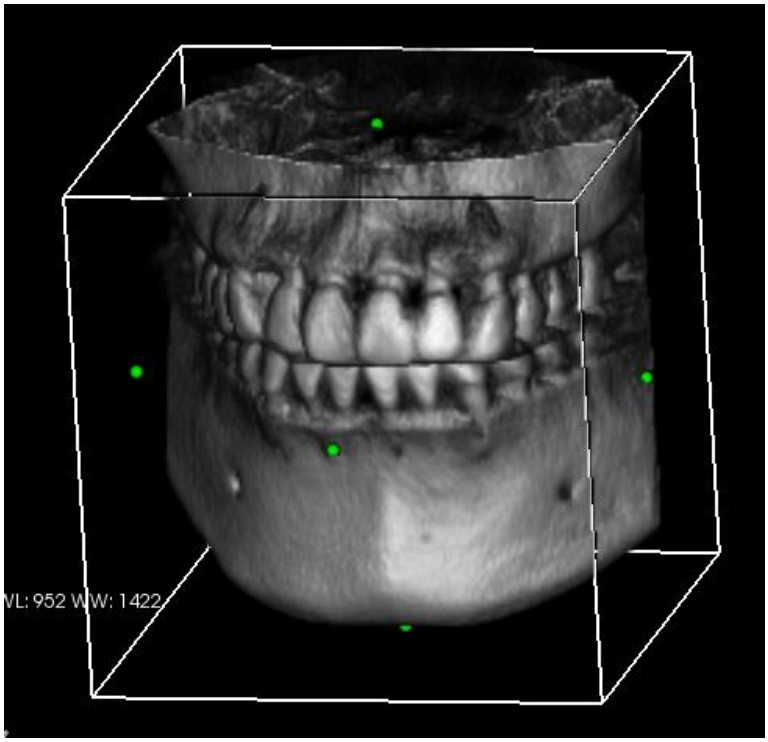


Figure 81

To crop the volume you should move the mouse near one of the green marker, press the left mouse button, hold it and move the mouse to crop the volume.

 Create a snap shot of the current volume. The snap shot repository can be used to create a medical report.

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Cross section view

In the Cross section view you can use these options.

- Scroll the images from top to bottom and bottom and from bottom to top. To scroll the images you can use the scroll bar on the right of the axial images or you can use the mouse wheel.
- Arrange the brightness and contrast. To modify these values click and hold the right mouse button and move it on the cross image. These changes will affect all views.
- Press the CTRL key and hold it, than press the left mouse button. The application will display the information for the pixel position and the pixel gray level value.

 Create a snap shot of the selected cross images. To select the cross images click with left mouse button in the top-left if the image box.

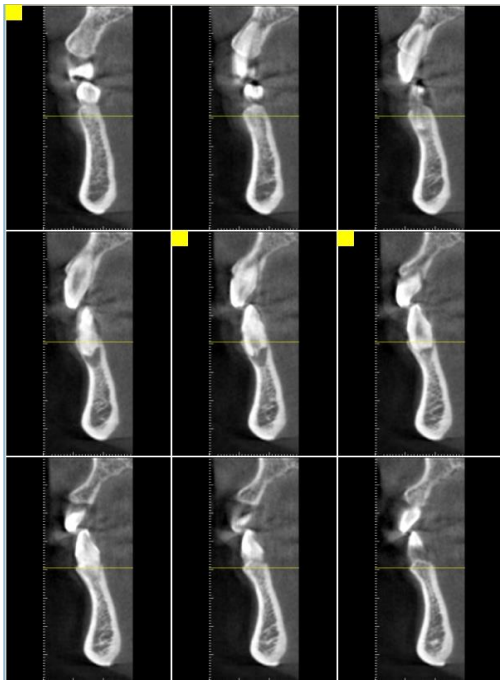


Figure 82

The yellow marker inform you that the image is selected. To unselect the image click on the yellow box.

If you want to zoom a single cross image check the box "Single".
The application will display a single cross image.

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Figure 83

Panoramic view

The panoramic view contains the panoramic section calculated around the panoramic arc.

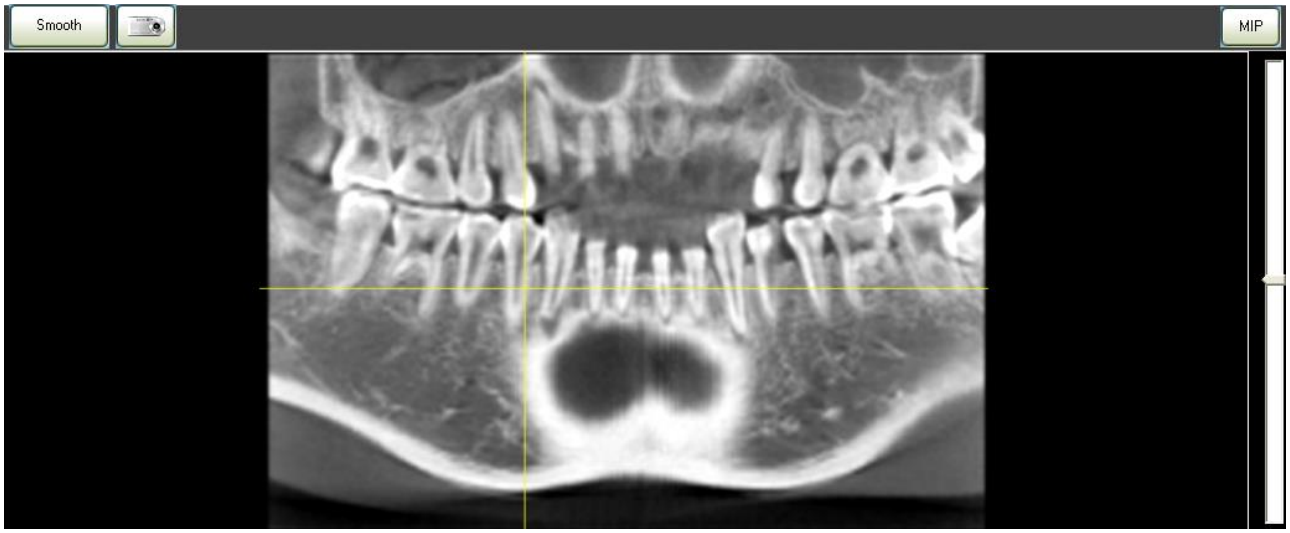


Figure 84

To change the panoramic arc of interest you can use the scroll bar on the right. If you want know the position of the active panoramic section you can see the axial view.

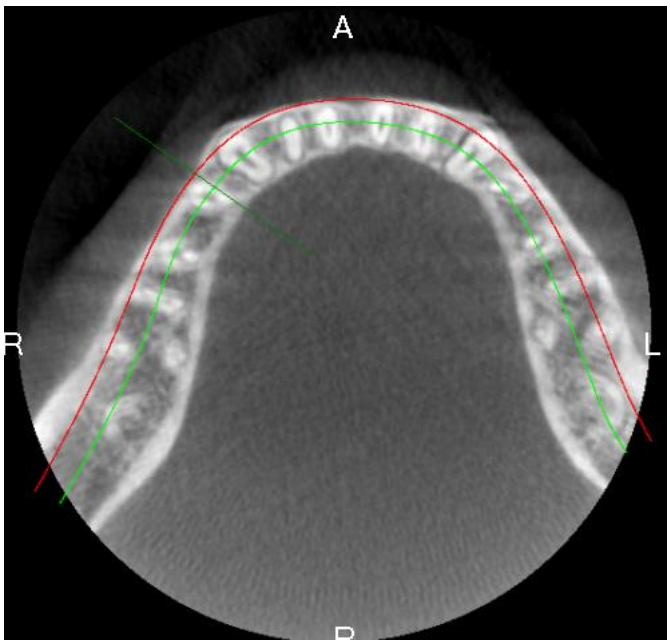


Figure 85

The green arc represents the original panoramic arc, the one created from the user. The red arc represents the arc calculated and displayed the in current panoramic section view.

The smooth option enable a smoothing filter.

 Create a snap shot of the panoramic view.



Create a MIP (Maximum Intensity Projection) of the panoramic view. The final image is created starting from all the panoramic arcs.

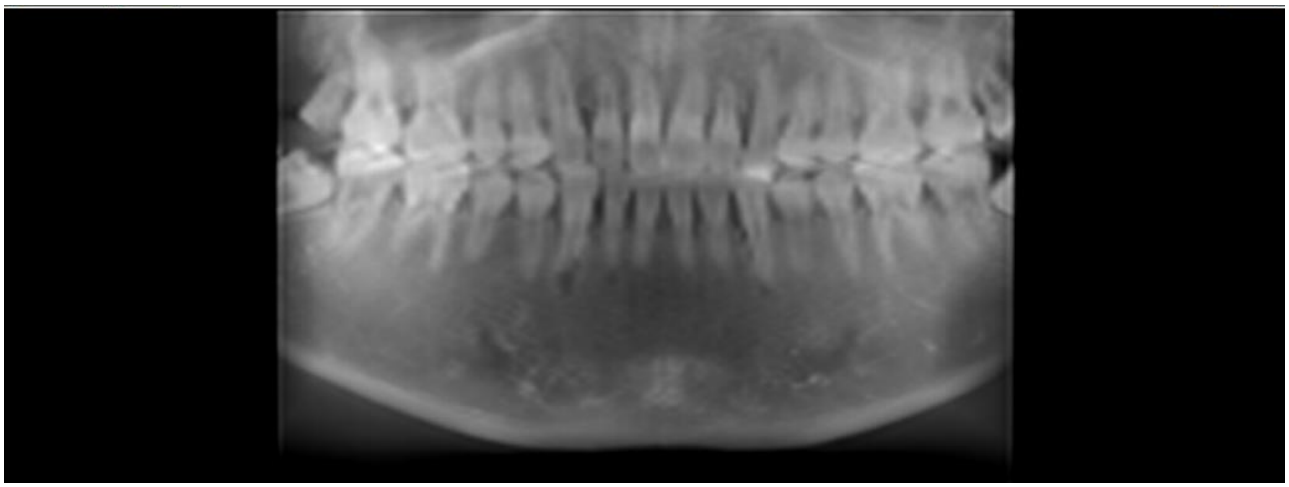


Figure 86

Full Cross View

In the full cross view, the application creates two sections. Both sections are created from the axial image dataset.



Figure 87

The top section is created from the right to the left of the patient (L/L view). The bottom section is created from the anterior to the posterior of the patient (A/P view)

The background colour helps the user to identify the reference line in the other view. Any line create in any view has the same colour of the source data. For example in the axial view the light green line represent the full cross A/P.

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Cross 3D View

The 3D cross view is a very innovative 3D reconstruction. This reconstruction uses the cross images to create a 3D volume.



Figure 88

The 3D image is created using 18 cross frame. It is possible to use 9 frames also, unchecking the option "Extend".

In the top of the 3D View there is a range selector. Moving the minimum and the maximum position of this selector, you can select the tissue density to evaluate. If you move it to the left you will enhance the soft tissue. If you move it to the right you will enhance the hard tissue.

In the 3D view you can use these options.

- Rotate the orientation. Click and hold click the left mouse and move it. The volume orientation will change according the mouse movement.

- Zoom in and out. You can use the mouse wheel to enlarge and reduce the 3D volume view.

- Click and hold the mouse wheel and move the mouse. The volume will move according the mouse movements.

If you check the option "MIP" you will see a transparent volume.

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Hounsfield

The Hounsfield method display the cross using pseudo colours. These colours will help you to better know the tissue quality. The classification is: D1, D2, D3, and D4.
D1 represent the softest density and D4 the hardest density.

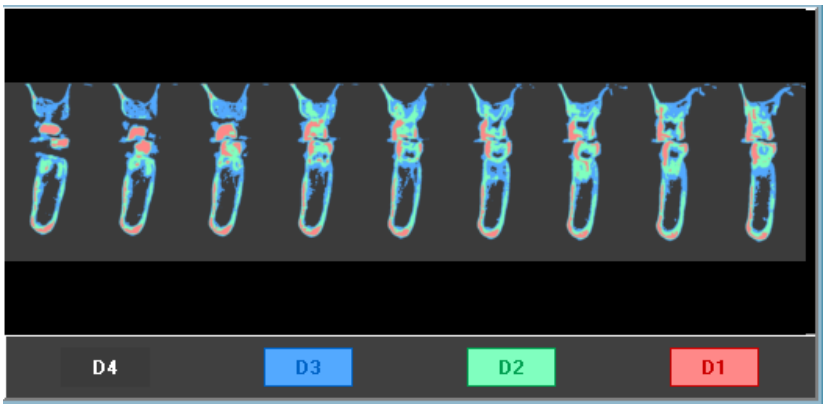


Figure 89

If you double click on any images the application will move the images on a new window, in this window you can zoom the images.

ADVICE:

The visualization of the unities Hounsfield (HU) it doesn't reflect the corresponding visualization of the unities HU obtainable on the system TC because the software has not been projected for a correct visualization of HU unit -

This function cannot be used for diagnostic purposes.

Ceph View

The Ceph view create two Ceph projection: A/P and L/L.

The source data are the axial images. This projection are created using all axial frames.

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Meaning of the functions

Menu Project

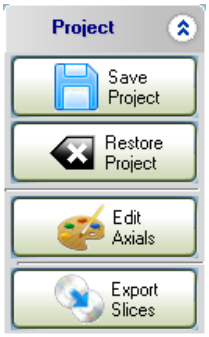


Figure 90

Save project

Save the current project, it saves the panoramic arc and the view option. The cross images and the panoramic images are not saved but they are created any time you will open again the project. This method ensure to avoid any problem.

Restore project

Restore the project to the original data. Any modification to the axial images are deleted. The panoramic arc is deleted included any cross and panoramic sections.

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Edit axials

Open a powerful editor to modify the axial images. This edit is very useful to clear the metal artefact from the images.

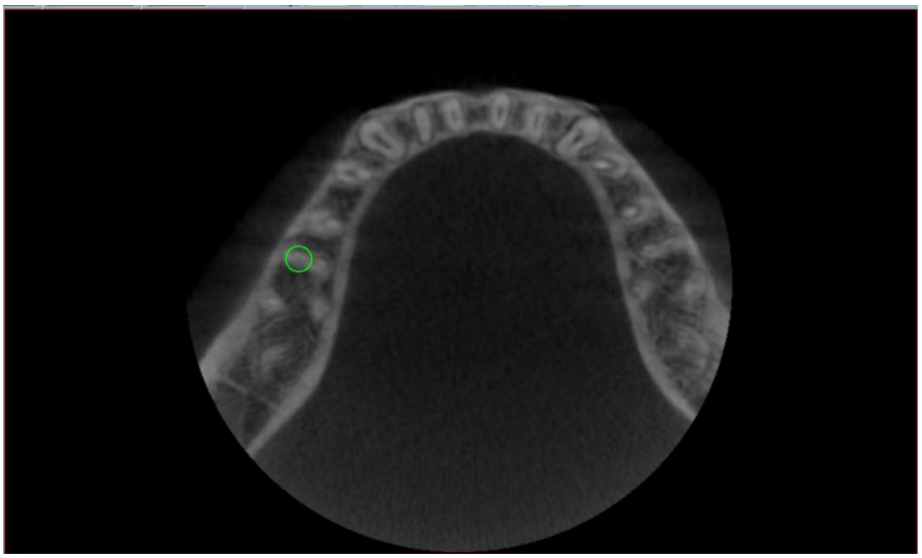


Figure 91

Single image modify.

Select the image to modify. Select the minimum level to modify

Multi image modify.

Select the image from which you want to start to make the changes and press "Tag Begin". Scroll the images using the scroll bar or the mouse wheel to select the last image that you want to modify. Press the button "Rubber", a green circle it will appear that represents the size of the rubber that is wanted to use. To modify the rubber size select the size in the left part of the following window:

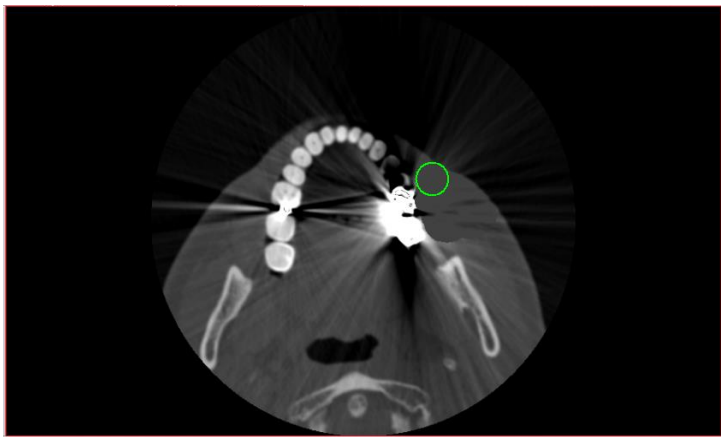


Figure 92

It is also possible to modify the threshold and the level of the rubber and its size. To work on a single image just click the left mouse button and holding it move around the image. If you want to word on multi image, hold the CTRL key before click the left mouse button.

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To clear a parts of the image it is necessary to move the rubber on the point of the image that you want to modify and, holding pressed the left button of the mouse, move the rubber on the part of the image to cancel.

Once you effect all the changes press "Save Changes".

Export slices

Export the slices (axial images) to a folder selected from the user. When the export process is finished the application will open the destination folder automatically.

Measures Menu

To explain the measures, please refer to chapter "*Images Processing- Measures*"

NOTE:

Deep-View® implements the volumetric reconstruction (or 3D) of the maxillo-facial complex departing from DICOM images obtained with special software (Dent scan or similar coming from TC) or that utilize the Cone Beam CT technology.
The volumetric reconstruction implemented by Deep-View® is checked by the contained parameters in the original DICOM images.
Deep-View® performs an accurate control of such parameters but it cannot guarantee the correctness and accuracy that depend on the system that has performed the examination, therefore the measures have to be considered as indicative.

The volumetric reconstruction can be used in the systems of implant planning only when the instructions are followed given by the supplier of the system of planning.
Particularly, the images used to this purpose have always to include the relative support used by such systems for the calibration of the geometric properties of the system.

Notes Menu

To Explain Notes menu, please refer to chapter "*Images Processing- Objects*"

3D Options Menu

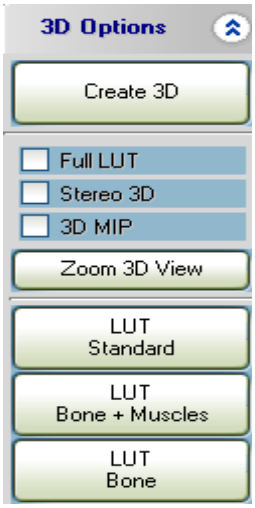


Figure 93

Create 3D: this function allows to create the 3D view.

Full LUT: Select the standard lut to display the preset bone tissue.

Stereo 3D: Apply the elaboration to display a real 3D image. To have the 3D simulation you need to uses special 3D glasses with a red glass and a green glass.

3D MIP: Apply the Maximum Intensity Projection calculation to display the image using the transparency.

Zoom 3D View: apply a zoom to the 3D volume

LUT Standard: this function allows to apply the LUT Standard, using the standard gray levels.

LUT Bones and Tissues: this function allows to apply the LUT to enhance the bone tissue and the muscle tissue.

LUT Bones: this function allows to apply the LUT to enhance the bone tissue.

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3D Module: Reconstruction Menu



Figure 94

This function allows to modify the size of the cross images. To apply a new value you need to modify it and press "*Regenerate Cross*"

3D: Screen Capture

Pressing this button it is possible to capture the whole screen

3D Module: Captured Images

You can show the captured images using this function.

To save all the captured images you can use the button "Save All" in the top of the screen.
To delete all the captured images you can click on "Delete All" in the top of the screen.

To save all the captured image for the selected category you can click on "Save All" on the right of the screen.
To delete all the captured image for the selected category you can click on "Delete All" on the right of the screen.

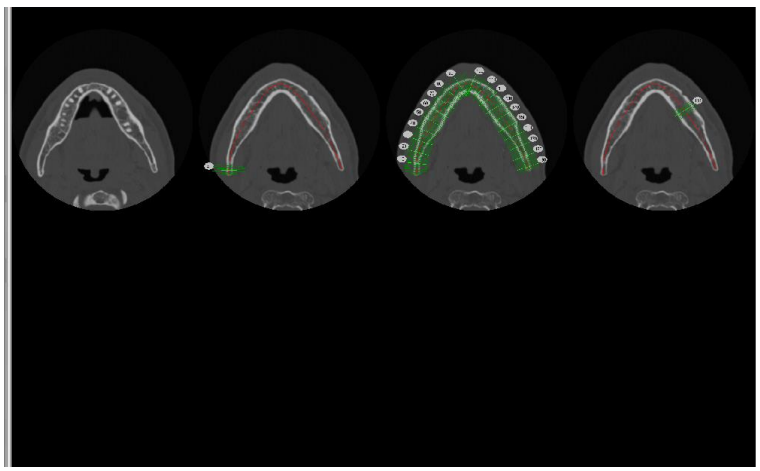


Figure 95

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The picture shows all the select axial images.

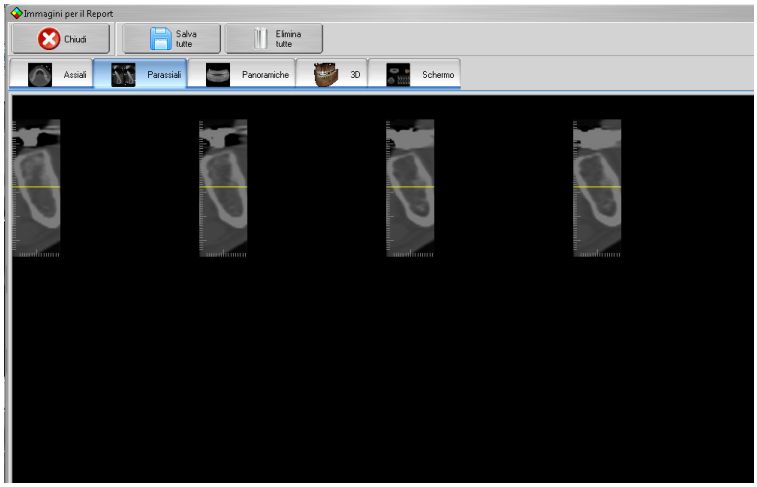


Figure 96

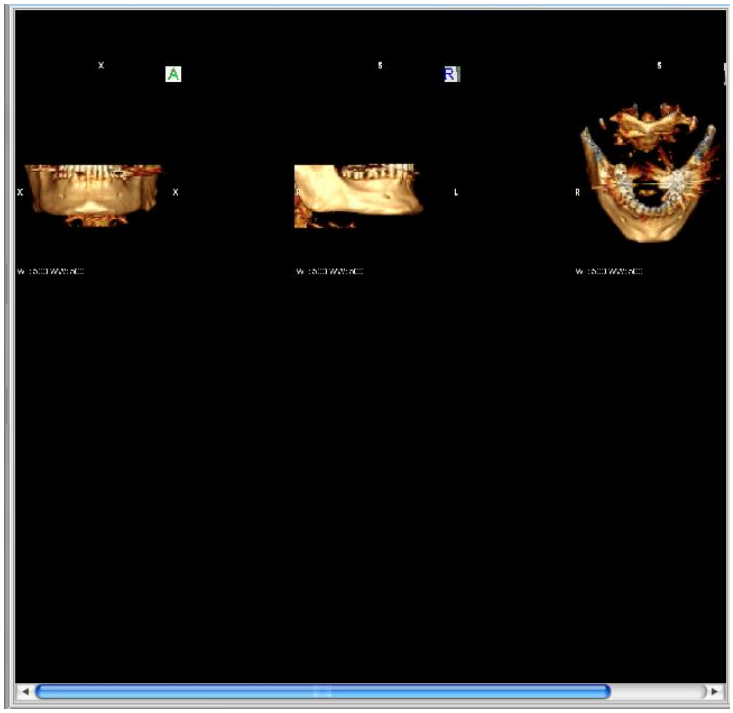


Figure 97

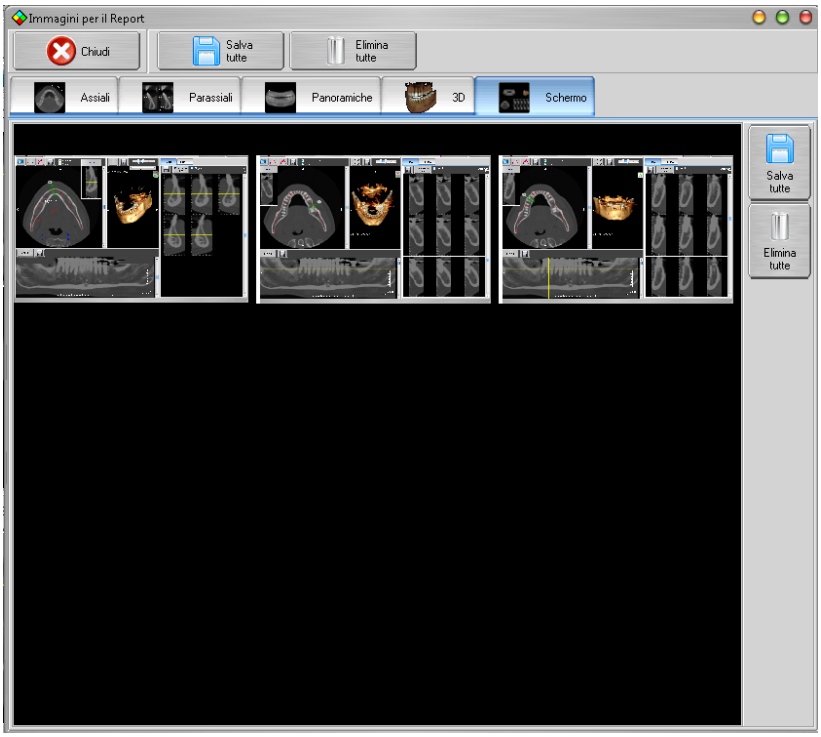


Figure 98

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3D: Print Image

The "Capture image" button allows you (when you are in cross or axial windows) to send a single image or a complete set of images from the current view to the "Image for Report" temporary folder, in order to handle the printing capabilities in Dicom or Windows mode.
Pressing the "Capture image" button the following popup menu will be displayed:

Capture the current view: send the selected image from the current view to the "Image for Report" temporary folder;

Capture all views: send all the images from the current view to the "Image for Report" temporary folder;

Add rulers to captured images: allows you to enable or disable the ruler's view on the selected image (or set of images);

Show all cross line reference on axial image: allows you to show over the axial image all the reference cross lines, built from the panoramic arc.

Proceed in the following way:

- Set your preferences and confirm pressing the "Capture" button;

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- On the new window, press the "Captured Images" button in order to enter to the "Images for Report" window:

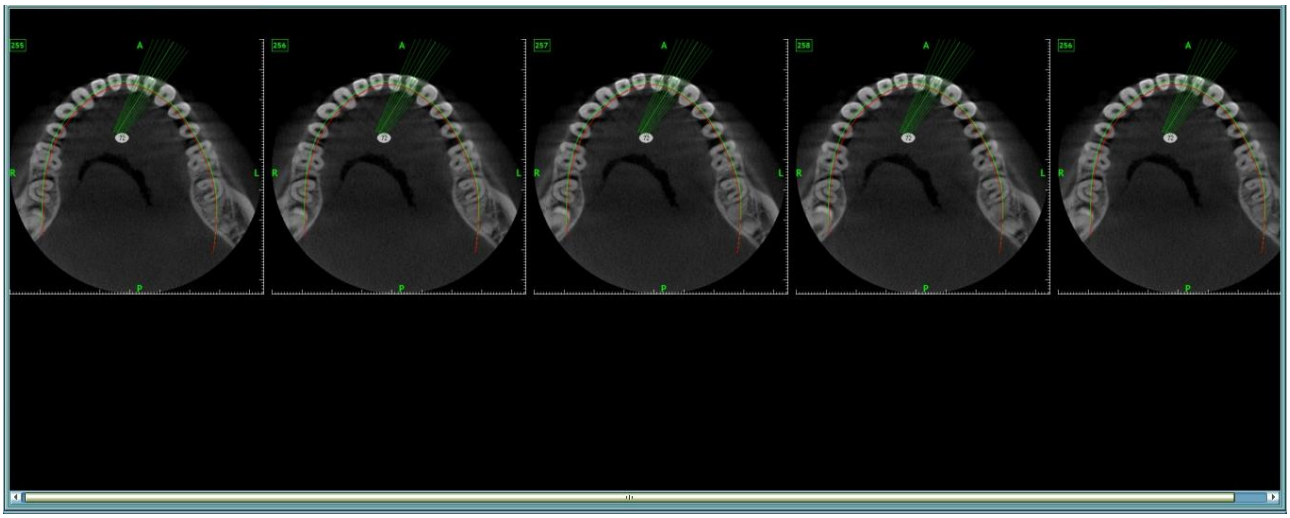


Figure 99

- Pressing the "Print" button the "Printer preview" window will be displayed.

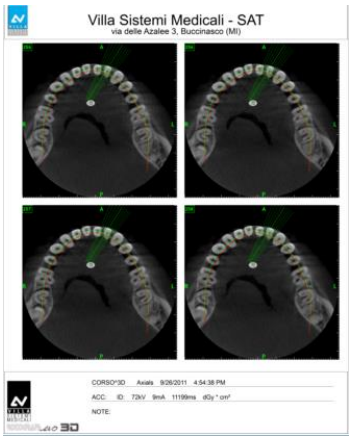


Figure 100

- Set your preferences:

Select the layout: allows you to select the correct layout according to the "Film Size" from a drop-down menu;
Select the printer: allows you to select the preferred printer from a drop-down menu;
Notes: allows you to insert some comments that will be shown in the printing area

- Confirm pressing the "Print" button.



NOTE

It's possible to create a report with multiple images on a single page only using the same type of view (multiple axial, multiple cross, etc.). The most important Dicom tags (patient information, exposure parameters) will be automatically inserted into the print layout.

3D : DICOM CD creation

This operation permit to create a CD with a viewer. This allow you to open a 3D studies on each PC without having a licence key.
Pressing the "DICOM CD" button from the Dicom menu the following window will be displayed.

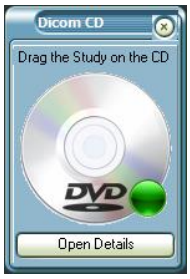


Figure 101

Drag a single one or more than one study (according with the size of your physical support, CD or DVD) that you want to add to the temporary buffer into the "Dicom CD" window.
Click the "Open Detail" button to see the previews list.

Press the "Create CD" button then "Burn" and wait for the end of the job (a log message will be showed when the burning process will be done).

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7. SETTINGS

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To access the program settings, select the icon  in the top right corner. The menu on the left side includes a number of functions, described below.

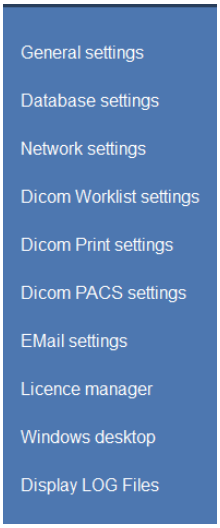


Figure 102

Language settings

To select the language, click on "*General Settings*" and open the drop down menu to from "*User language*".

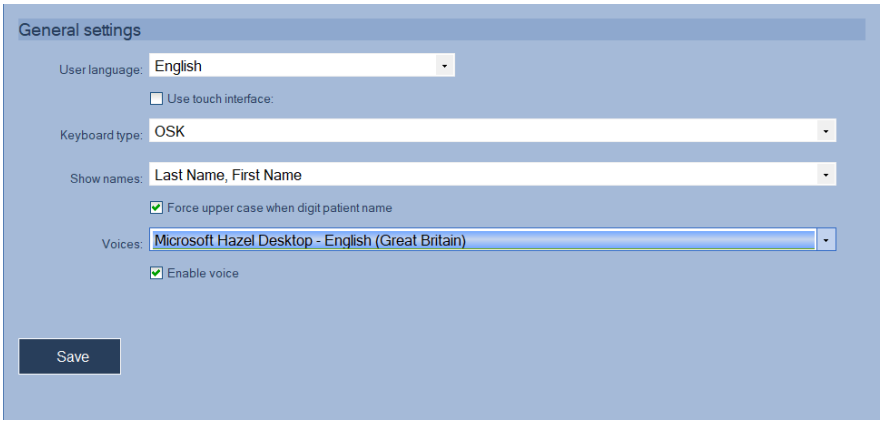


Figure 103

From this same window you can also select the order of preference (First and Last Name or Surname and First Name) when entering patient data. Check the box "Force upper case when digit patient name" to set the upper case character when entering data.

You can also set from this window:

-The keyboard type: OSK or TabTip.

-The Windows item that can be activated during the images acquisition and when using voice consent.

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Database settings

For database settings, please refer to the chapter "*Database Management*".

Network settings

ADVICE:

The network settings must be configured by qualified personnel. The use of this procedure is reserved to the IT specialist of the clinic / hospital.

This function allows you to configure your local network as shown below, assigning a letter to each disk you want to add.



Figure 104

This function solves some problems of Home Edition operating systems. The configured drives are reconnected each time the program starts. For example, if the disk "Z:" refers to the "Database" folder of the "Server" computer, the configuration will be:

Drive 1: Z
Network path: \\Server\Database

DICOM Settings

ADVICE:

The configuration of DICOM networks and all its devices must be carried out by qualified personnel. The use of this procedure is reserved to the IT specialist of the clinic / hospital.

DICOM Worklist

This function allows you to configure the DICOM worklist. You need to enter:
Application Entity Title, IP Address and Port Contact. Finally, enter the description with which to identify the worklist and tick the query options and mode.

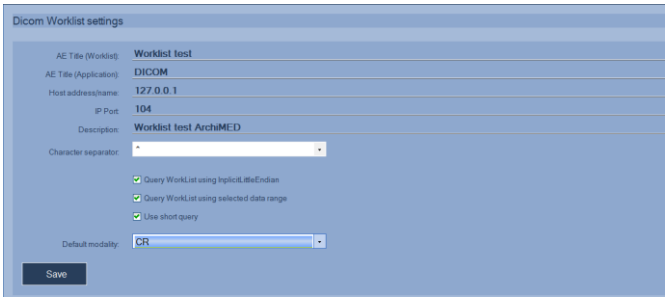


Figure 105

DICOM Printer settings

This function allows you to configure an unlimited number of DICOM printers. To configure a printer connected to the computer in use, it is necessary to set the parameters shown in figure 112, entering the address 127.0.0.1 as the host address.
Type the name to assign to the DICOM printer and enter the application entity that identifies the printer.
Enter the IP address of the printer and the port used by the printer, usually **104**.

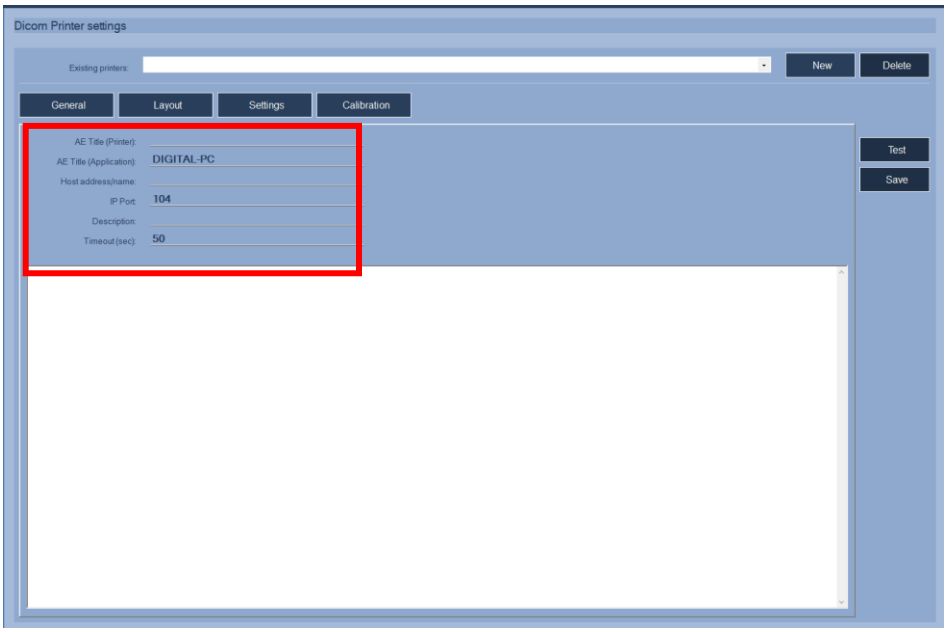


Figure 106

DICOM PACS

You can configure ad unlimited number of PACS, using this function.
Type the name to be assigned to the PACS and enter the application entity Title to identifying the PACS.
Enter the IP address and the port used by the IP address, usually **104**.
Check the box below if you want to include on the image the objects or measures made during image processing.
This is shown, for example, in the X-ray image in figure below.

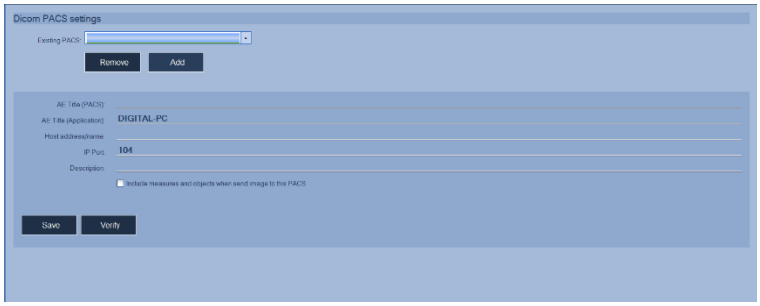


Figure 107

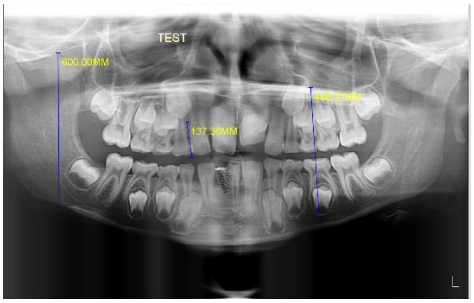


Figura 113/b

E mail Settings

This function allows you to configure the default email address so that it can be used to send communications to patients.



Figure 108

License settings

For license settings please refer to the chapter ” *License Management*”.

Windows Desktop

This setting allows the user to be redirected to Windows Desktop, after entering the password.



Figure 109

Display LOG file

This section displays the LOG files that contain messages that can help you solve any problems with the program.

APPENDIX 1- Digital sensors that can be connected to Deep-View

Deep-View® captures images directly from digital sensors, divided into the following tables according to the type of sensors.

The table also specifies the versions of the computers' systems that we have used to verified Deep-View®; this limitation depends on the manufacturer/supplier of the digital system and not on the program.

ADVICE:

For safety's sake, please contact our service center to check the compatibility of the image acquisition system with Deep-View® and with the computer system.

Intraoral Sensors

Manufacturer	Version	Type	Operating systems
Schick Technologies	2.1.0.0	Schick ISA version	Windows XP
	4.5.0.0	Schick Technologies usb	Windows XP Windows Vista 32/64 bits Windows 7 32/64 bits
Various		TWAIN interface	Windows XP Windows Vista 32/64 bits Windows 7 32/64 bits Windows 8 32/64 bits Windows 10 32/64 bits(1)
TRIDENT	S.N.V. Data del file: 23/05/2013	iView	Windows 7 32/64 bits Windows 8 32/64 bits Windows 10 32/64 bits(1)
TRIDENT	16.0.0.400 (File version)	iView H	Windows 7 32/64 bits Windows 8 32/64 bits Windows 10 32/64 bits(1)
TRIDENT	S.N.V. Data del file: 30/03/2017	Reader	Windows 7 32/64 bits Windows 8 32/64 bits Windows 10 32/64 bits(1)
TRIDENT	6.0.3.4	iView Gold	Windows 7 32/64 bits Windows 8 32/64 bits Windows 10 32/64 bits(1)

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Panoramics

Manufacturer	Version	Type	Operating Systems
Various		TWAIN interface	Windows XP Windows Vista 32/64 bits Windows 7 32/64 bits Windows 8 32/64 bits Windows 10 32/64 bits(1)

3D Panoramics

Manufacturer	Version	Type	Operating Systems
TRIDENT	7.20.00.1119	xView	Windows 7 64 bits Windows 8 64 bits Windows 10 64 bits(1)

(1) The tested SDK version has not been officially released for Windows 10 32/64 bits. The result is defined on the basis of tests carried out on an acquisition sample of at least 50 tests on two different computers.

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APPENDIX 2- Installation check and periodicals

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The following operations are necessary to ensure perfect use of the system and to check the quality of the images you take.

NOTE

The operations required after installation of the system are necessary to check the complete functionality of the program.
This operation must be repeated even after a new installation of the program, for example to replace the PC.

Monitor quality check

ADVICE:

Good quality monitors are essential for proper diagnosis of the examination by image analysis. A monitor that fails the checks required by this procedure is not diagnostic. The use of a high-quality, nondiagnostic monitor makes the Deep-View® system non diagnostic.

During the realization, it was verified that the Deep-View® program correctly displays the images, using a series of sample images specified by the European Standards.
Since the program is distributed as a stand-alone product, the tests to verify the adequacy of the monitor on the end user's system should be repeated.
To perform this verification, Deep-View® has the sample images, used in the initial verification, already stored in the program itself.

1. Start Deep-View® select patients and a patient already stored in the database
2. Select "*Images*" 

select the screen icon at the top right 
3. Will appear this window. Check if that all elements on the left of the screen are correct

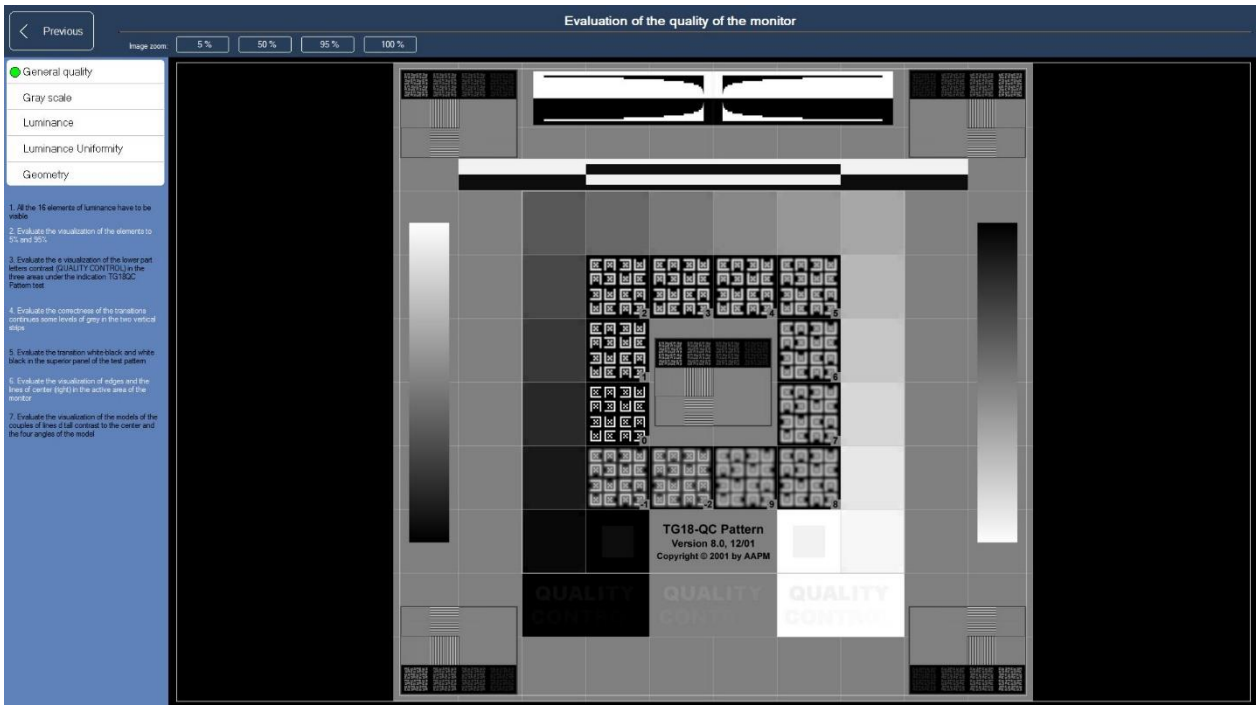


Figure 116

The following general services must be performed:

-the monitors, especially CRT monitors, have been turned on for at least half an hour;
-light sources are not reflected in the display;
-the surface of the monitor is clean.

The following image show the elements you have to check.

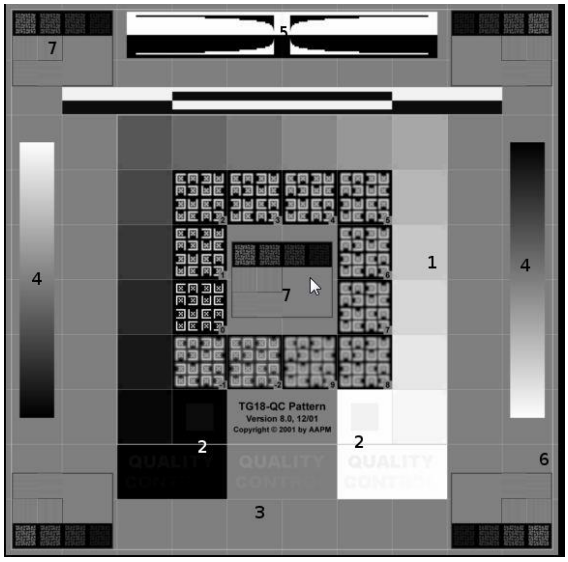


Figure 117

NOTE

You have to check the point number 7 with a CRT monitor or a LCD with antireflective screen.

Select the other elements on the left of the screen and follow the below instructions for the other verifications:

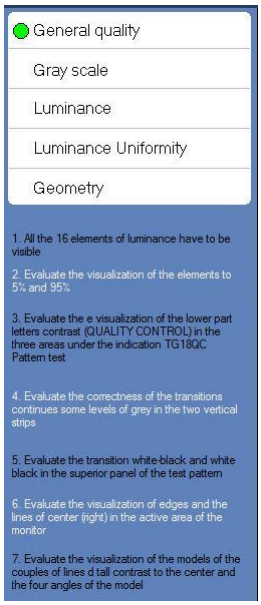
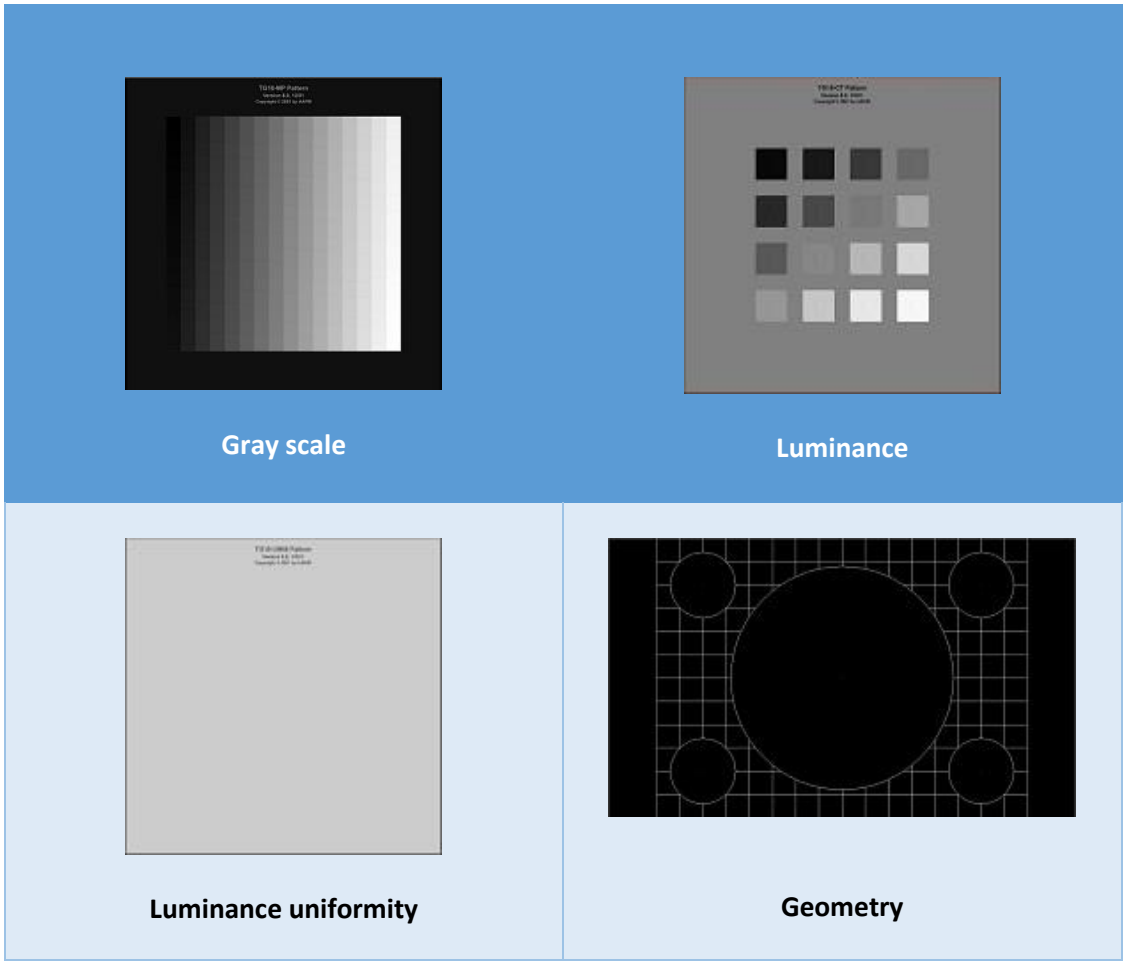


Figure 110

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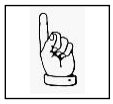


Testing the spatial resolution for images systems

To check this, you need to have a puppet of spatial resolution. Scanned images should not be adjusted in contrast and brightness.

1. Start Deep-View®, select images and create a new patient (for example "Periodical Test").
2. Put the puppet next to the sensor, to cover the entire sensible area. The sensor and the puppet must be in contact with the cone collimator, so that they are in the centre of the ray beam.
3. On the generator control RX, select the less possible exposure time.
4. If necessary, enable the acquisition of the sensor and the exposure.
5. Verify that the resulting image is exposed correctly, otherwise increase the exposure time and scan them again. If it is overexposed, increase the distance between the sensor / phantom and collimator.
6. Repeat the verification of the correct exposure; possibly repeat steps 4 and 5 above
7. Awarded the correct image, you may want to delete old images.
8. Enlarge the image and see the pairs of lines that are clearly visible. If necessary, you can adjust the contrast and brightness for optimal viewing.
9. Annotate the image with the parameters with which you ran the show (date of implementation, exposure time, distance to fire-sensor, presence of additional filters and their characteristics, spatial resolution observed).

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NOTE:

You have to do this test on every RX generator that will use the digital sensor.
If you use two or more digital sensor, you have to do the test on every one of them, discerning the images of every sensor.

The verification of the spatial resolution of the system must be performed using the puppet of specific test and according to the manufacturer's instructions.

You have to proceed in the following way:

1. Start Deep-View®, select the images and create a new patient (for example "Periodical tests", if does not exist yet).
2. Put the specific puppet of the system.
3. Select the exposure parameters recommended by the manufacturer of the panoramic.
4. Enlarge the image and check that the characteristics described by the manufacturer are followed.
5. Annotate the image with the parameters with which you ran the show (date of execution, the parameters used, presence of additional filters with value characteristics, the results obtained)

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Periodical Test

During the lifetime of the system, the controls specified below shall run with the frequency indicated for each of them.

Checking the consistency of the monitor

Test of the adequacy of visualization should be performed annually.
You must perform the same procedure described in the paragraph.
You must obtain the same results described for the initial verification of the system.
If you notice a degradation of visual performance, call the Technical Support Service, but you must consider that the degradation can be attributed to the monitor and not to Deep-View®.

Test of spatial resolution

The control of the spatial resolution should be performed every six months, for both intraoral systems for panoramic systems.
You must perform the steps corresponding to the digital system under consideration.
You must get the same results described for the initial verification of the system.

If you notice a degradation of visual performance, call the Technical Support Service, but you must consider that the degradation can be attributed to the monitor and not to Deep-View®.

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APPENDIX 3-Customizing Prints

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ADVICE:

This feature is designed for a user who is practical with prints and can create a procedure containing fields and variables. The result of the creation of a print template or modifying an existing one by a non-expert user, may cause malfunction or may generate a print that is not consistent with the original image and give unexpected results on the size. In any case, the image stored on the hard disk remains unchanged.
Deep-View® can only check the commands for correct syntax, but cannot control the results of the customizations are correct.
Responsibility for the results of the press is exclusive of those who create it.
The access to this function is restricted to the administrator of the program.

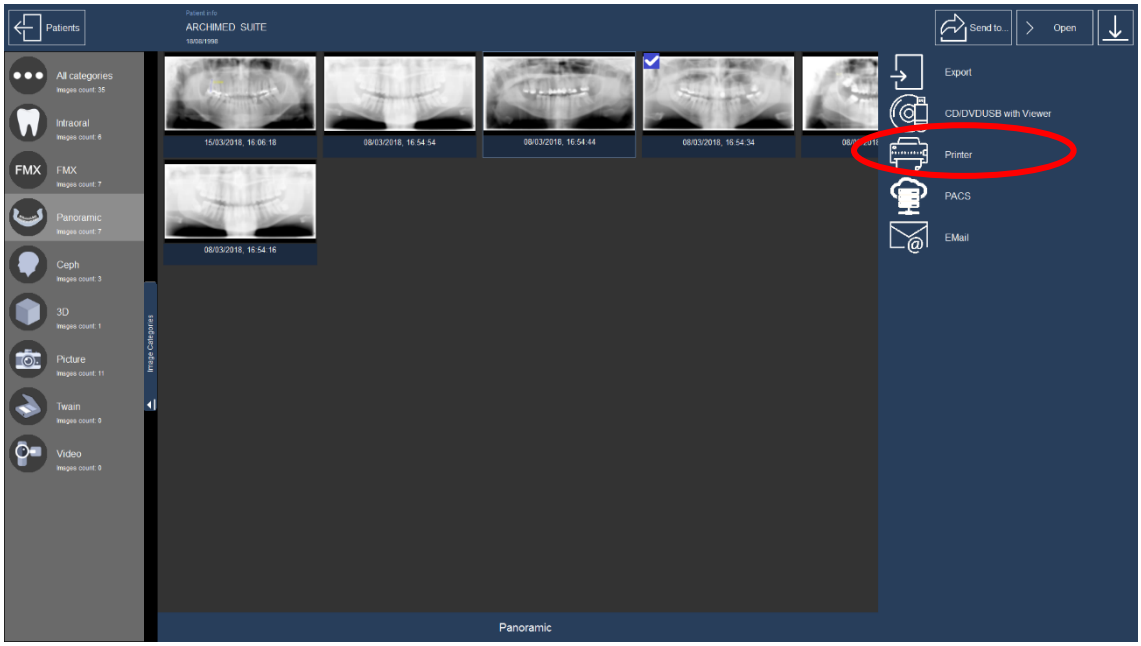
Introduction

To access the customization of prints use the button located inside the image form and click the 

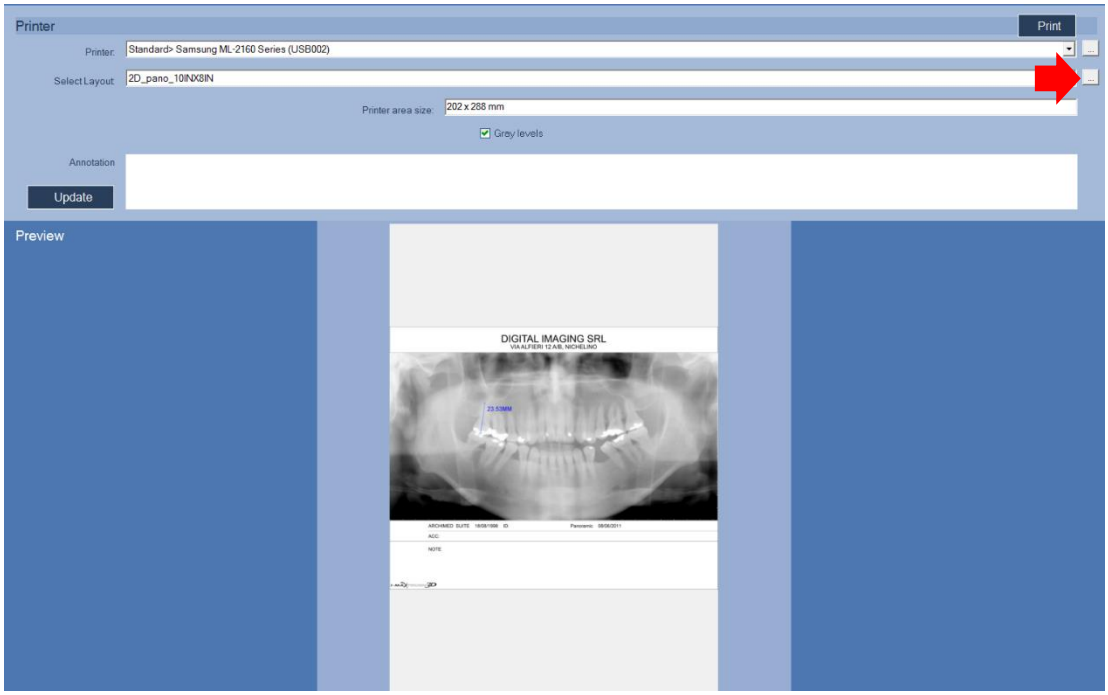
button after selecting the image.

Click on 

as shown in the figure below.

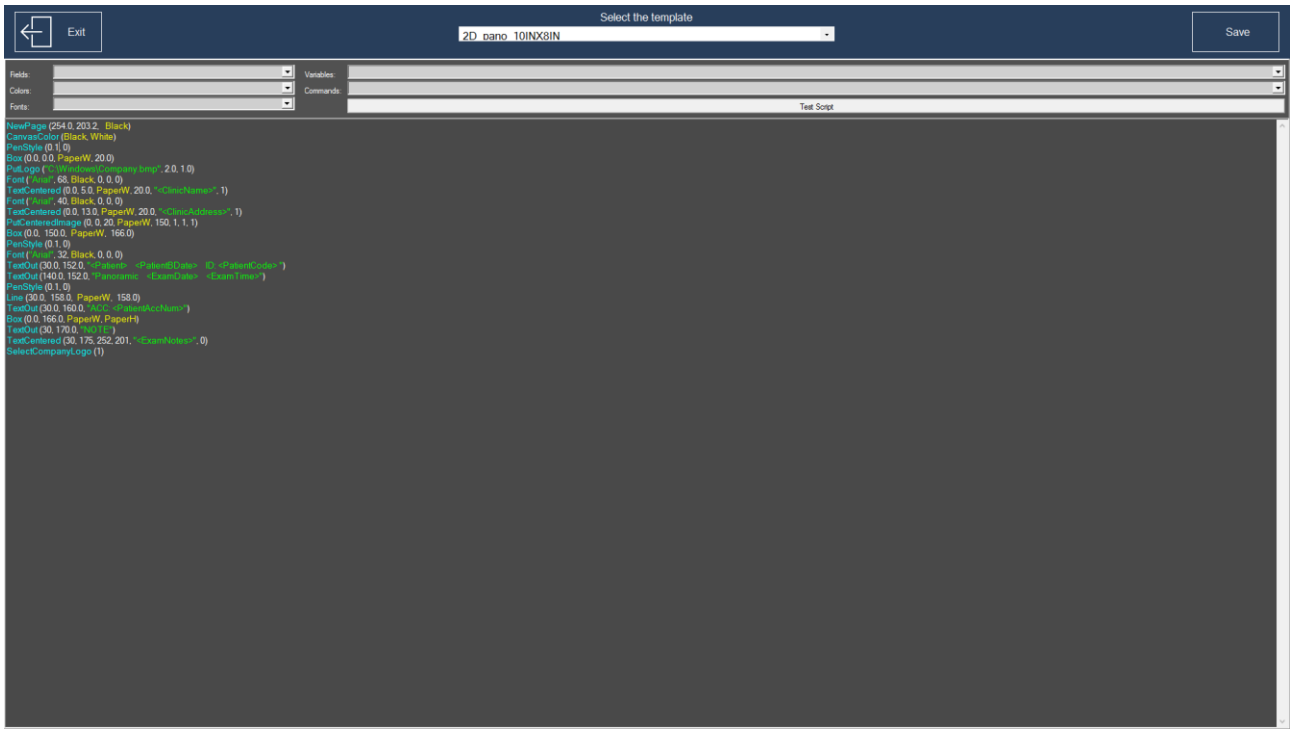


Then you will see the following window:



In this window it will be possible to select an existing model, choosing from the list available from the drop-down menu of the "*Selected Layout*" item. To apply changes to the selected model, click on the button indicated by the arrow, in the figure.

Then will appear this window:



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The "Test Script" allows to visually verify the results of your script. In the simulation of the insertion of the image, the program used always the same image. The result obtained in the printing phase may be different from that expected.

The customization of prints allows you to create any type of custom print format. You can print a single image, for processing 2D prints, with the desired magnification and with the graphical presentation preferred. You can also create customized printing for images from 3D processing.
The personalization of printing involves the use of:

- **Commands**: a group of functions that is used to build the graphics printing pattern.
- **Variables**: are values that change depending on the context of use of the print model.
- **Fields**: are references to values associated with the images and the clinic.
- **Color**: are the ones used in the context of the controls.

Command list

Here you are the commands that you can use to customize the printing format.

Box	Draw a box to the coordinates specified, using the color set with the command "CanvasColor"
CanvasColor	Sets the color that will be used by the commands to draw
DefineMultiImageArea	Draw a box to put the pictures to be printed in 3D elaboration
Font	Set the font to use and its style
Line	Draw a line in the required position
NewPage	Set the size of the printing sheet
PenStyle	Select the style of the pen used to draw lines
PutCenteredImage	Inserts the image into the box indicated by the coordinates
PutExtLogo	Insert the logo of the clinic by reading it from a bitmap file or a jpeg one
PutImage	Inserts the image in the position shown with the features specified by the parameters
PutLogo	Insert the logo of the clinic by reading it from a bitmap file or a jpeg one
TextCentered	Writes a text in a rectangle, using the font style selected with the command "Font"
TextOut	Writes a text, using the font style selected with the command "Font"

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Variables

Here you are the fields that you can use to customize the printing model. These fields can be used in the text writing commands.

PaperW	It indicates the horizontal size of the paper read by the printer settings when printing. During the creation of the model, this value is read from the setting indicated by the command **NewPage**.
PaperH	It indicates the vertical size of the paper read by the printer settings when printing. During the creation of the model, this value is read from the setting indicated by the command **NewPage**.

Fields

Here you are the fields that you can use to customize the printing model. These fields can be used in the text writing commands.

<Patient>	It represents the value of the last name and the name of the patient
<PatientBDate>	It represents the value of the birth date of the patient
<PatientSex>	It represents the value of the sex of the patient
<PatienTCcNum>	It represents the value of the Accession Number of the patient's exam
<PatientCode>	It represents the value of the patient's code
<ExamDate>	It represents the value of the exam date
<ExamTime>	It represents the value of the exam hour
<ExamKV>	It represents the value of the exam KV
<ExammA>	It represents the value of the exam mA
<ExamDAP>	It represents the value of the exam dose
<ExamUID>	It represents the value of the exam UID
<ExamNotes>	It represents the value of the exam notes
<ExamExpTime>	It represents the value of the exposure time of the exam
<ExamType>	It represents the value of the kind of exam
<ClinicName>	It represents the value of the clinic name
<ClinicAddress>	It represents the value of the clinic address

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Colors

Here you are the colors that you can use.

BLACK
MAROON
GREEN
OLIVE
NAVY
PURPLE
TEAL
GRAY
SILVER
RED
LIME
YELLOW
BLUE
FUCHSIA
AQUA
LTGRAY
DRGRAY
WHITE

Command	**Box**
Utilization	Creation and execution of the script
Parameters	Left: It indicates the position on the left of the box in millimeters Top: It indicates the position on the top of the box in millimeters Right: It indicates the position on the right of the box in millimeters Bottom: It indicates the position on the bottom of the box in millimeters
Example	Box (0.0, 0.0, PaperW, 20.0) *Draws a box from the upper left of the sheet, up to the width of the sheet to a height of 20 millimeters.*

Description

This command draws a box at the coordinates specified using the color set with the command "CanvasColor". The edge of the box will be drawn using the color "ForeG" set in the command "CanvasColor". The background of the box will be drawn using the color "BackG" set in the command "CanvasColor". The definition of the coordinates can be of numeric type, or the reference to variables: PaperW (page width) or PaperH (height of the page).

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Parameters
Left: Indicates the position in millimeters of the far left point of the box. This value is expressed in the format xx.yy (for example, 1.2 indicates that the box will be drawn at a distance of 1.2 mm from the left edge).
Top: it indicates the position in millimeters of the highest point of the box. This value is expressed in the format xx.yy (for example 12:50 indicates that the box will be drawn at a distance of 12.50 mm from the upper edge).
Right: it indicates the position in millimeters of the far right point of the box. This value is expressed in the format xx.yy (for example 100.0 indicates that the box will be drawn at a distance of 100.0 mm from the left edge).
Bottom: indicates the position in millimeters of the lowest point of the box. This value is expressed in the format xx.yy (for example 200.0 indicates that the box will be drawn at a distance of 200.0 mm from the upper edge).

Command	**CanvasColor**
Utilization	Creation and execution of the script
Parameters	ForeG: It indicates the position on the left of the box in millimeters BackG: It indicates the position on the top of the box in millimeters
Example	CanvasColor (Black, Red) *Draws a box from the upper left of the sheet, up to the width of the sheet to a height of 20 millimeters.*

Description
This command sets the color that will be used by the commands for drawing. The colors to be selected are two: foreground color and background color. The foreground color is used when drawing lines; the background color is used, for example, to fill the box.

Parameters
ForeG: It indicates the color of the foreground (e.g.: Black).
BackG: It indicates the color of the background (e.g.: White).

Command	**DefineMultiImageArea**
Utilization	Creation and execution of the script
Parameters	ImageZoom: it indicates the magnification to be applied to all images ImageSpace: it indicates the horizontal and vertical space to leave between the images Left: it indicates the position in millimeters on the left top of the box that contains the images Top: it indicates the position in millimeters on the top of the box that contains the images Right: it shows the position in millimeters on the right of the box that contains the images Bottom: it indicates the position in millimeters below the box that contains the images
Example	DefineMultiImageArea (0.5, 2.0, 0.0, 25.0, PaperW, 200.0) Defines a print area that will contain images with magnification of 50% (will be reduced by half), with a space of 2 mm between each image and the coordinates of the area are: 0, 25, PaperW (page width), 200.

Description
This command determines a box to insert pictures. This command can only be used for printing images captured with the 3D module. It is used to print the axial, the cross, the panoramic cuts, etc. This command automatically determines the number of pages you need to print all the selected images.

Parameters

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ImageZoom: It indicates the magnification to be applied to all images. If you don't want to apply any enlargement, you must indicate "1.0". A value less than "1" reduces the image, while a higher value enlarges the image.
ImageSpace: It indicates the space that will be left between the images. This value is used for the horizontal and the vertical space.
Left: It indicates the position in millimeters on the left of the box that includes images. This value is expressed in the format xx.yy (for example, 1.0 indicates that the box of reference is at a distance of 1.0 mm from the left edge).
Top: It indicates the position in millimeters on the top of the box that includes images. This value is expressed in the format xx.yy (eg 10.0 indicates that the box of reference is at a distance of 10.0 mm from the upper edge).
Right: It indicates the position in millimeters on the right of the box that includes images.
Bottom: It indicates the position in millimeters on the bottom of the box that includes images

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Command	**Font**
Utilization	Creation and execution of the script
Parameters	Name: It indicates the name of the font you want to use. It must be included in the installed ones. Size: It indicates the size of the font you want to use Color: It indicates the color of the font you want to use Bold: It indicates if you want to use the bold option or not 0: not use; 1: use it Italic: It indicates if you want to use the italic option or not 0: not use; 1: use it Underline: It indicates if you want to use the underline option or not 0: not use; 1: use it
Example	Font ("Trebuchet MS", 72, Red, 1, 0, 0) *Select the font "Trebuchet MS" with 72 size, using just the bold option.*

Description

This command set the font you want to use and its style. The font choosen, will be used by all commands that provide writing texts. To use more than one font in the same script, you have to use this command more than one time.

Parameters

Name: It indicates the name of the font you want to use (for example: Arial). The name of font must be written between two apices. We suggest you to use "True type" fonts, that are scaled in a better way than other fonts.

Size: It indicates the size of the font you want to use (for example: 10).

Color: It indicates the color of the font you want to use (for example: Black). You can use the following colors: Black, Maroon, Green, Olive, Navy, Purple, Teal, Gray, Silver, Red, Lime, Yellow, Blue, Fuchsia, Aqua, LTGray, DRGray, White.

Bold: It indicates if you want to use the bold option or not. To select this option, you have to insert the value 1, otherwise insert the value 0.

Italic: It indicates if you want to use the italic option or not. To select this option, you have to insert the value 1, otherwise insert the value 0.

Underline: It indicates if you want to use the unerline option or not. To select this option, you have to insert the value 1, otherwise insert the value 0.

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Command	**Line**	
Utilization	Creation and execution of the script	
Parameters	Left:	It indicates the position on the left of the line in millimeters
	Top:	It indicates the position on the top of the line in millimeters
	Right:	It indicates the position on the right of the line in millimeters
	Bottom:	It indicates the position on the bottom of the line in millimeters
Example	Line (0.0, 110.0, PaperW, 110.0) *Draw an horizontal line starting from the left edge and at 110 millimeters from the top edge, for the whole width of the paper.*	

Description

This command draws a line in the required position. Style and dimension of the line are set with the command "PenStyle", the color is determined by the command "CanvasColor" with the parameter "ForeG".

Parameters

Left: It indicates the position in millimeters of the leftmost point of the line. This value is expressed in the format xx.yy (for example, 1.2 indicates that the line will be drawn at a distance of 1.2 mm from the left edge).
Top: It indicates the position in millimeters of the highest point of the line. This value is expressed in the format xx.yy (for example 12:50 indicates that the line will be drawn at a distance of 12.50 mm from the upper edge).
Right: It indicates the position in millimeters of the rightmost point of the line. This value is expressed in the format xx.yy (for example 100.0 indicates that the line will be drawn at a distance of 100.0 mm from the left edge).
Bottom: It indicates the position in millimeters of the lowest point of the line. This value is expressed in the format xx.yy (for example 200.0 indicates that the line will be drawn at a distance of 200.0 mm from the upper edge).

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Command	**NewPage**
Utilization	During the creation of the script. It is ignored during printing
Parameters	Width: It indicates the width in millimeters of the print area Height: It indicates the height in millimeters of the print area BGColor: It indicates the background color of the page
Example	NewPage (210.0, 297.0, BLACK) *Creates a new A4 page with background color Black.*

Description

This command is very important to create a print model. It must be listed as the first command of the script and must be similar to the corresponding value of the paper you want to print. If you use many print formats you need to create multiple scripts. This command is ignored during printing. The printer selected reads the actual size of the print area automatically.

Parameters

Width: It indicates the width of the print area. This value is in millimeters, written in the format xxx.yyy (for example 210.0). To separate the decimal part from the integer part, use a point and not a comma.
Height: It indicates the height of the print area. This value is in millimeters, written in the format xxx.yyy (for example 210.0). To separate the decimal part from the integer part, use a point and not a comma.
BGColor: It indicates the background color of the page. You can set the background color you want to use. (for example Black). Avaiable colors are: Black, Maroon, Green, Olive, Navy, Purple, Teal, Gray, Silver, Red, Lime, Yellow, Blue, Fuchsia, Aqua, LTGray, DRGray, White.

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Command	**PenStyle**
Utilization	Creation and execution of the script
Parameters	Size: It indicates the thickness of the pen in millimeters Style: It indicates the pen style
Example	PenStyle (5.0, 0) *Select a pen thick 5mm and continuous*

Description
This command set the style of the pen to draw lines. The settings of this command are used for all graphics command of drawing.

Parameters
Size: It indicates the thickness of the pen in millimeters. This value is in millimeters, written in the format xx.yy (for example 2.5 indicates that lines will be drawn with a thickness of 2.5 millimeters).
Style: It indicates the pen style to draw lines. You can use the following styles:
0: solid line
1: dashed line
2: dotted line
3: dash-dot line
4: line dash-dot-dot

Command	**PutCenteredImage**
Utilization	Creation and execution of the script
Parameters	ImageIndex: It indicates the image number. It must be always "0". Left: It indicates the position in millimeters on the left of the box that includes the image Top: It indicates the position in millimeters on the top of the box that includes the image Right: It indicates the position in millimeters on the right of the box that includes the image Bottom: It indicates the position in millimeters on the bottom of the box that includes the image Zoom: It indicates the magnification to be applied to the image HorzRuler: It indicates whether to insert the horizontal ruler to the image VertRuler: It indicates whether to insert the vertical ruler to the image
Example	PutCenteredImage (0, 0.0, 20.0, PaperW, 150.0, 1.0, 1, 1) *Insert an image centering it in the rectangle with coordinates in millimeters: 0, 20, PaperW (sheet width), 150. The magnification is 100% and both rulers are placed.*

Description
This command inserts the image into the box indicated by the coordinates. If the image is smaller than the box indicated, it will be centered within the box. If the image is larger than the box indicated, it will be trimmed by centering it in the box indicated.

Parameters
ImageIndex: It indicates the image number. This number must be always "0".
Left: It indicates the position in millimeters on the left of the box that includes the image. This value is expressed in the format xx.yy (for example, 1.0 indicates that the box of reference is at a distance of 1.0 mm from the left edge).

Top: It indicates the position in millimeters at the top of the box that includes the image. This value is expressed in the format xx.yy (eg 10.0 indicates that the box of reference is at a distance of 10.0 mm from the upper edge).
Right: It indicates the position in millimeters to the right of the box that includes the image.
Bottom: It indicates the position in millimeters to the bottom of the box that includes the image.
Zoom: It indicates the magnification to be applied to the image. If you don't want to apply any enlargement, you must indicate "1.0". A value less than "1" reduces the image, while a higher value to "1" enlarges the image. A value of -1 will adapt the image to the page size
HorizRuler: indicates if you want to enter the horizontal ruler. To enter the horizontal ruler indicate the value 1, otherwise enter the value 0.
VertRuler: indicates if you want to enter the vertical ruler. To enter the vertical ruler indicate the value 1, otherwise enter the value 0.
Descrizione
Questo comando inserisce l'immagine all'interno del box indicato dalle coordinate. Se l'immagine risulta più piccola del box indicato, sarà centrata all'interno del box. Se invece l'immagine è più grande del box indicato, verrà ritagliata centrandola nel box indicato.

Command	**PutExtLogo**	
Utilization	Creation and execution of the script	
Parameters	FileName: Left: Top: Right: Bottom:	It indicates the file name where the logo is. It indicates the left position of the logo It indicates the top position of the logo It indicates the right position of the logo It indicates the bottom position of the logo
Example		

Description
This command allows you to insert the logo of the clinic by reading it from a bitmap or jpeg files. The position of the logo is indicated by the coordinates of the box that includes the logo. The logo will be printed at its actual size and centered in the box indicated. If the evidence is too large, you can reduce it with a graphics program.

Parameters

FileName: It indicates the file name where the logo is (for example "C:\Logotypes\ClinicLogo.bmp").

Left: It indicates the position in millimeters on the left of the box that includes the image. This value is expressed in the format xx.yy (for example, 1.0 indicates that the box of reference is at a distance of 1.0 mm from the left edge).

Top: It indicates the position in millimeters at the top of the box that includes the image. This value is expressed in the format xx.yy (eg 10.0 indicates that the box of reference is at a distance of 10.0 mm from the upper edge).

Right: It indicates the position in millimeters on the right of the box that includes the image

Bottom: It indicates the position in millimeters on the bottom of the box that includes the image

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Command	**PutImage**
Utilization	Creation and execution of the script
Parameters	ImageIndex: It indicates the image number. It must be always “0”. Left: It indicates the left position of the image in millimeters Top: It indicates the top position of the image in millimeters Zoom: It indicates the magnification to be applied to the image HorzRuler: It indicates whether to insert the horizontal ruler to the image VertRuler: It indicates whether to insert the vertical ruler to the image
Example	PutImage (0, 100.0, 25.0, 0.8, 1, 1) *Draw the image number "0" starting from 100 millimeters from the left edge and 25 from the upper edge. The magnification of 80% is applied to the image (the image will be reduced) and will be included both rulers.*

Description

This command places the image in the position shown with the characteristics specified by the parameters. This command has no control on the image size so the image may be cut off if it ends off the page. This magnification allows you to print images in the format 1: 1.

Parameters

ImageIndex: It indicates the image number. This number must be always “0”.

Left: It indicates the position in millimeters on the left where the image is drawn. This value is expressed in the format xx.yy (for example, 1.0 indicates that the image is drawn at a distance of 1.0 mm from the left edge).

Top: It indicates the position in millimeters on the top where the image is drawn. This value is expressed in the format xx.yy (eg 10.0 it indicates that the image is drawn at a distance of 10.0 mm from the upper edge).

Zoom: It indicates the magnification to be applied to the image. If you don’t want to apply any enlargement, you must indicate "1.0". A value less than "1" reduces the image, while a higher value to "1" enlarges the image. A value of -1 will adapt the image to the page size

HorizRuler: indicates if you want to enter the horizontal ruler. To enter the horizontal ruler indicate the value 1, otherwise enter the value 0.

VertRuler: indicates if you want to enter the vertical ruler. To enter the vertical ruler indicate the value 1, otherwise enter the value 0.

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Command	**PutLogo**
Utilization	Creation and execution of the script
Parameters	FileName: It indicates the file name where the logo is. Left: It indicates the left position of the logo Top: It indicates the top position of the logo
Example	PutLogo ("C:\Loghi\ClinicLogo.bmp", 2.0, 2.0) *Read the image contained in the file "C:\ Logos\ClinicLogo.bmp" and inserts it in the position 2 mm from the left edge and 2 mm from the top edge*

Description
This command allows you to insert the logo of the clinic by reading it from a bitmap or jpeg files. The position of the logo is indicated by the coordinates. The logo will be printed at its actual size. If it is too large, you can reduce it with a graphics program.

Parameters
FileName: It indicates the file name where the logo is (for example "C:\Loghi\ClinicLogo.bmp").
Left: It indicates the position in millimeters on the left where to draw the logo. This value is expressed in the format xx.yy (for example, 1.0 indicates that the image is drawn at a distance of 1.0 mm from the left edge).
Top: It indicates the position in millimeters on the top where to draw the logo. This value is expressed in the format xx.yy (eg 10.0 it indicates that the image is drawn at a distance of 10.0 mm from the upper edge).

Command	**TextCentered**
Utilization	Creation and execution of the script
Parameters	Left: It indicates the position in millimeters on the left of the box that includes the text Top: It indicates the position in millimeters on the top of the box that includes the text Right: It indicates the position in millimeters on the right of the box that includes the text Bottom: It indicates the position in millimeters on the bottom of the box that includes the text Text: It indicates what you want to write Centered: It indicates if you want to center the text
Example	TextCentered (0.0, 100.0, PaperW, 110.0, "Patient: <Patient>", 1) *Write the text, centering it, 0 millimeters from the left edge and 100 millimeters from the top edge, ending at the right edge of the sheet and at 110 millimeters from the bottom. The written text has a fixed part "Patient:" and a variable one "<Patient>". This part will be replaced with patient name and last name.*

Description
This command writes a text, using the font style selected with the command "Font", within a rectangle. The reference rectangle is not drawn but it serves only as a reference to the text placement. This command controls the final size of the text and is able to wrap to a new line if the text exceeds the size of the paper. You can use this command to write lyrics that do not change or texts with references to patient data (fields).

Parameters
Left: It indicates the position in millimeters of the leftmost point of the box that includes the text. This value is expressed in the format xx.yy (for example, 1.2 indicates that the box will be calculated at a distance of 1.2 mm from the left edge).
Top: It indicates the position in millimeters of the highest point of the box that includes the text. This value is expressed in the format xx.yy (for example 12:50 indicates that the box will be calculated at a distance of 12.50 mm from the upper edge).

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Right: It indicates the position in millimeters of the rightmost point of the box that includes the text. This value is expressed in the format xx.yy (for example 100.0 indicates that the box will be calculated at a distance of 100.0 mm from the left edge).
Bottom: It indicates the position in millimeters of the lowest point of the box that includes the text. This value is expressed in the format xx.yy (for example 200.0 indicates that the box will be calculated at a distance of 200.0 mm from the upper edge).
Text: It indicates what you want to write. The text must be enclosed in double quotes and can include **FIELDS**.
Centered: It indicates if you want to center the text within the box indicated. To center the text, enter the value 1, otherwise enter the value 0.

Command	**TextOut**
Utilization	Creation and execution of the script
Parameters	Left: It indicates the position on the left of the text in millimeters Top: It indicates the position on the top of the text in millimeters Text: It indicates what you want to write
Example	TextOut (5.0, 5.0, "Patient: <Patient>") *It writes the text starting at 5 mm from the left edge and at 5 mm from the top edge. The written text has a fixed part "Patient:" and a variable one "<Patient>". This part will be replaced with patient name and last name.*

Description
This command writes a text using the font style selected with the command "Font". This command does not control the final size of the text and it is not able to wrap to a new line if the text exceeds the size of the paper. You can use this command to write lyrics that do not change or texts with references to patient data (fields).

Parameters
Left: It indicates the position in millimeters of the left point where to start writing. This value is expressed in millimeters in size xx.yy (eg 10.5 indicates that the text will be written from 10.5 mm from the left edge of the paper).
Top: It indicates the position in millimeters of the left point where to start writing. It indicates the position in millimeters of the top point where to start writing. This value is expressed in millimeters in size xx.yy (eg 50.0 indicates that the text will be written from 50.0 millimeters from the top edge of the sheet).
Text: It indicates what you want to write. The text must be enclosed in double quotes and can include **FIELDS.**

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Example for a print customization

Here you are an example of a print customization. This example shows how to print on a A4 Horizontal sheet. This format is ideal to print a panoramic picture.

EXAMPLE (start)

NewPage (297.0, 210.0, Black)
CanvasColor (Black, White)
Box (0.0, 0.0, PaperW, 20.0)
Font ("Arial", 70, Black, 0, 0, 0)
TextCentered (0.0, 5.0, PaperW, 20.0, "<ClinicName>", 1)
Font ("Arial", 40, Black, 0, 0, 0)
TextCentered (0.0, 13.0, PaperW, 20.0, "<ClinicAddress>", 1)
PutCenteredImage (0, 0, 20, PaperW, 150, 1, 1, 1)
Box (0.0, 150.0, PaperW, 166.0)
PenStyle (0.1, 0)
Font ("Arial", 36, Black, 0, 0, 0)
TextOut (30.0, 152.0, "<Patient> <PatientBDate> ID: <PatientCode> ")
TextOut (140.0, 152.0, "<ExamType> <ExamDate> <ExamTime>")
PenStyle (0.1, 0)
Line (30.0, 158.0, PaperW, 158.0)
TextOut (30.0, 160.0, "ACC.# <PatientAccNum>")
TextOut (140, 160.0, "<ExamKV>kV - <ExammA>mA - <ExamTime>s - <ExamDAP>uGym2")
Box (0.0, 166.0, PaperW, 210.0)
TextOut (30, 168.0, "Note:")
PenStyle (0.1, 1)
Line (30.0, 174.0, 290, 174.0)
Line (30.0, 182.0, 290, 182.0)
Line (30.0, 190.0, 290, 190.0)
Line (30.0, 198.0, 290, 198.0)
Line (30.0, 206.0, 290, 206.0)

Example (finish)

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APPENDIX 5 – FMX customization

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ADVICE:

This feature is designed only for technicians. If you change these parameters without any technical support you can have unpredictable results.

Editing Full Mouth Series Parameters

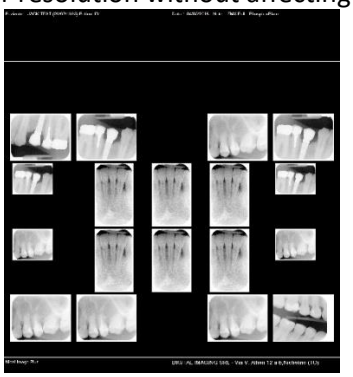
The FMX template are stored in folder "C:\ProgramData\ArchiMED Suite\FMX_Templates". These files are INI files and you can edit them using any text editor. Please remember to save using the ANSI format. You can create any new FMX Template creating new files in this folder.
This file INI includes **Sections,** identified by a string enclosed in square brackets, and followed by **parameters.**
EXAMPLE

```
[Settings]        } General template settings
Title=FMX Full - PhosphorPlate
Count=18
PageW=1420        } Full Mouth Series settings parameters
PageH=1020
BorderSize=120
```

Meaning of the parameters in the Settings section
Title: FMX template name displayed in the program when the user select the template
Count: Box number
PageW: Page width in pixels
PageH: Page height in pixels
BorderSize: Identify an invisible frame around the printed page. A high number corresponds to a thicker border and vice versa (Figures below). When this parameter changes, the distribution of the boxes will keep the right proportion to the area. You can use this parameter to adjust the layout on the printer.
The PageW and PageH parameters are proportionally scaled to the monitor size. You can use the same template on different computer with different monitor resolution without affecting the results.



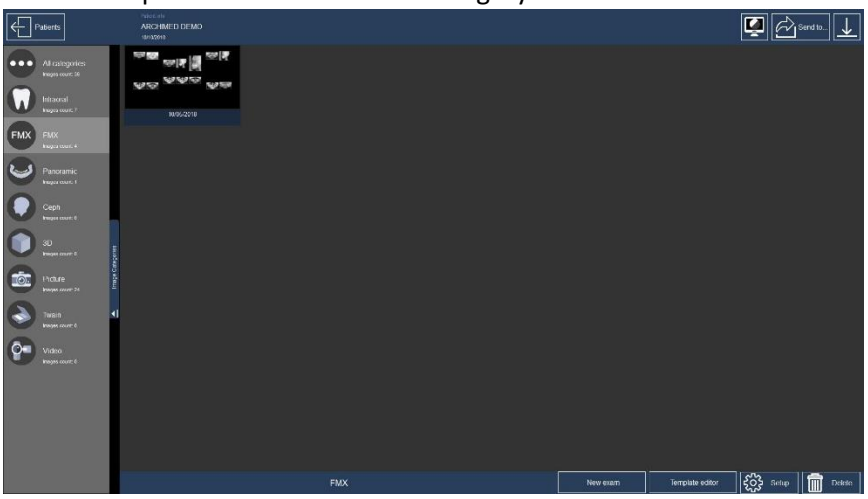
Border Size: 100



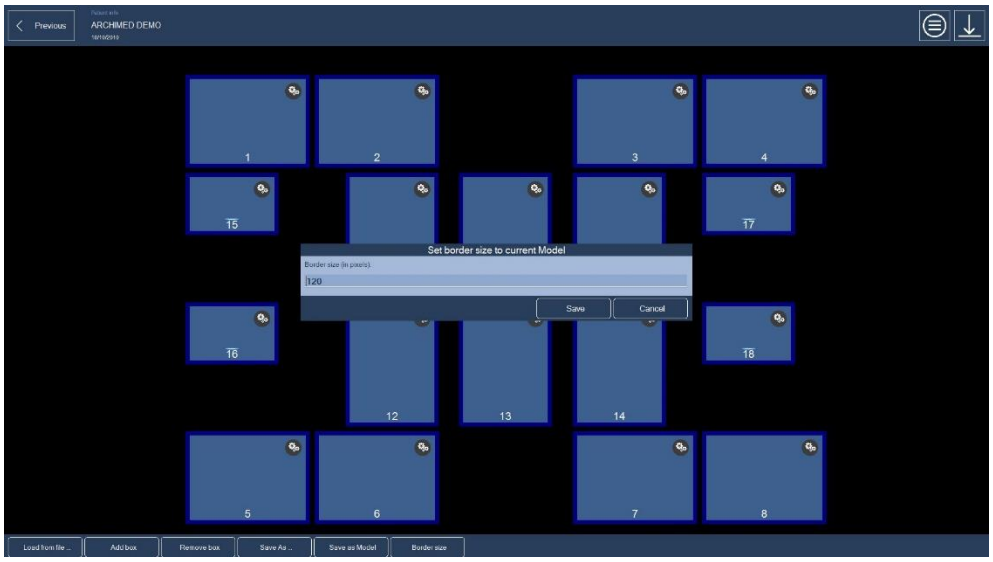
Border Size: 200

You can change the border size parameters into the program also, by selecting the "border size" button from the template editor window:

1. Select “template editor” from FMX category

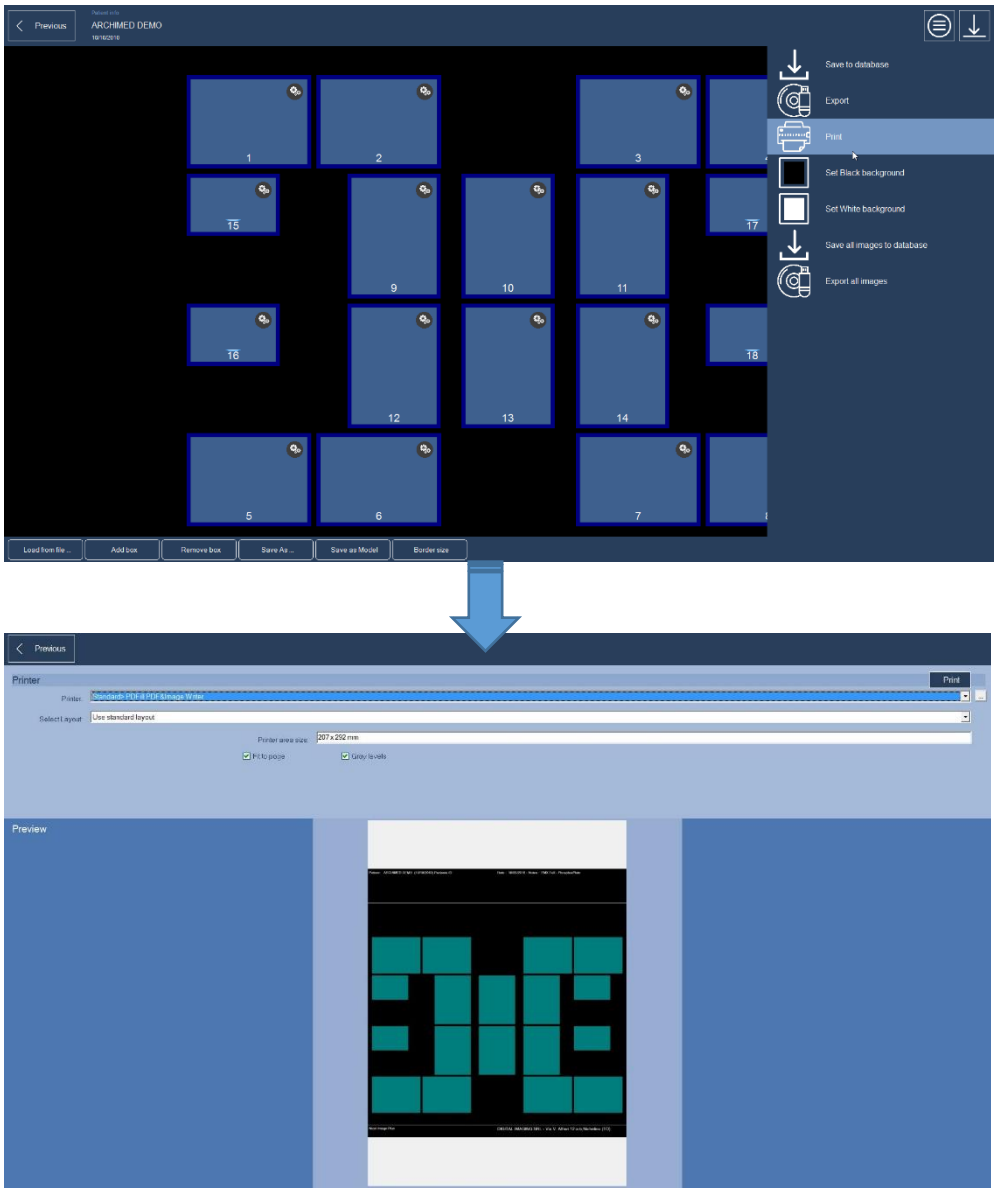


2. Choose an existing one template or create new.
3. Click on border size button and insert the numbers



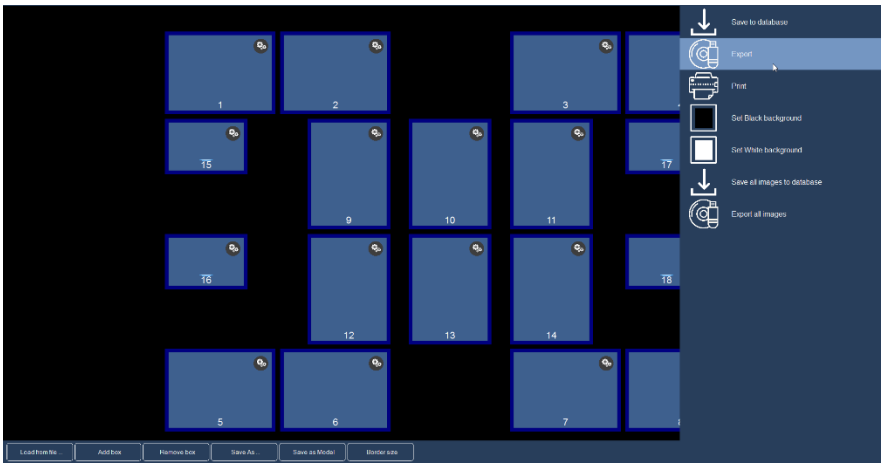
4. Click on save and go to image preview selecting “Print”, as shown below

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5. If you want to save the template in your personal computer, click on “Export” and save the image in Jpeg or Bmp format.

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The next parameters identify the characteristics of the boxes.

[Box_1] Section box number

AIdx=1
X=40
Y=40
W=260
H=195

Boxes parameters

Meaning of the parameters
AIdx: Acquisition index. This index represents the acquisition sequence from the intraoral sensor or phosphor-plate scanner. When the user acquires an image in box 1, for example, the application will jump to the box 2, automatically.
X: Left position of the box in pixels. Move the box left using low numbers and right using high numbers.
Y: Top position of the box in pixels. Move the box down using high numbers and up using high numbers.
W: Box width in pixels
H: Box height in pixels

The ratio of Box height to Box width is very important to adapt the size plate to the box (Figure below)



The application will fit the image to the box using the ratio. If ratio is 4:3, you can insert image fitting the box with the same ratio. Is not possible to adapt an image to fit the box with different ratio. This is because of the geometric saving of the image.

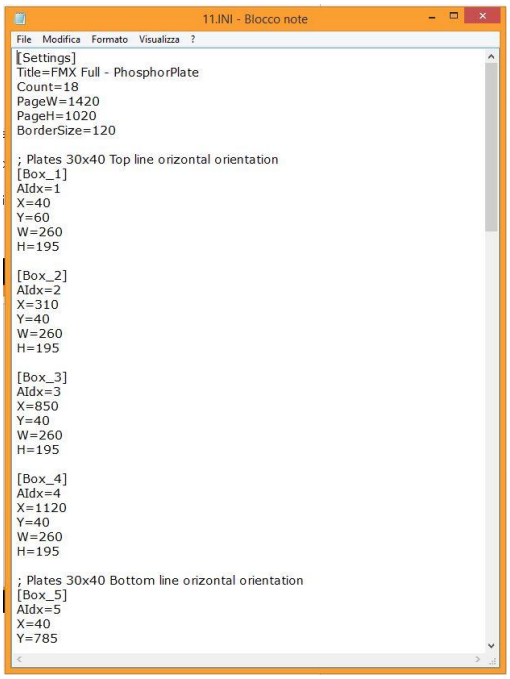
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You can insert lines of comment in any point of the line preceded by a semicolon. FOR EXAMPLE:
; This is a first line
Or
; Plates 30x40 Center line 1 vertical orientation

Creating or modifying a template

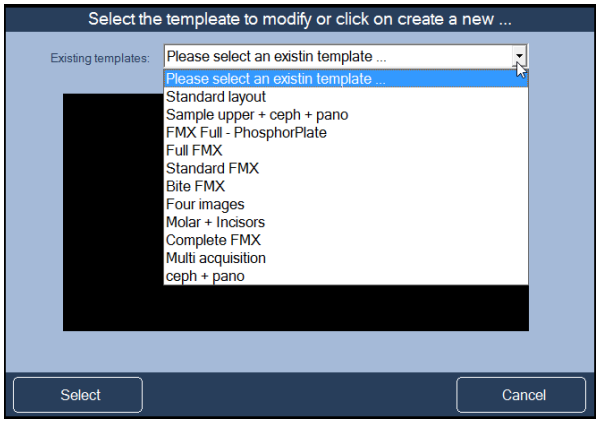
If you want to see the result while you are creating or modifying a template, you can proceed in this way.

1. Open the template that you want to change from the folder “C:\ProgramData\ArchiMED Suite\FMX_Templates” folder.

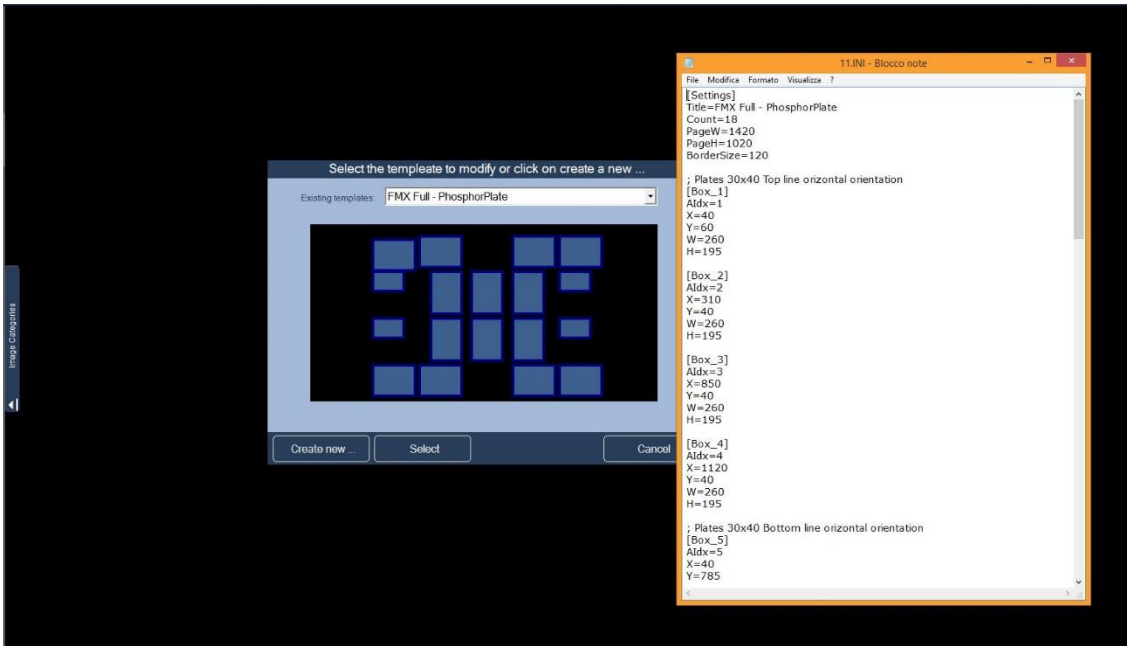


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2. Open the preview of the new exam from the application in the FMX manager:



3. Change the properties inside the file and save it.
4. Click on the name in the list of the preview.



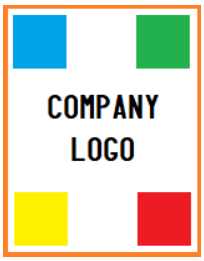
Create and customize Logo

To create and customize a logo on your Full Mouth Series template, open the template you want from the folder: “C:\ProgramData\ArchiMED Suite\FMX_Templates”.
This folder contains INI files and you can edit them using any text editor. Please remember to save using the ANSI format.

Proceed as follows:

1. Open a template document.
2. Create a section as follows:

; Logo
[Box_0]: Create a box with Index 0
Exists=1. Insert 1 to make the box existing
AIdx=0: The acquisition index has to be 0 because this is not an acquisition box.
X=660: Left position of the box in pixels. Move the box left using low numbers and right using high numbers.
Y=60: Top position of the box in pixels. Move the box down using high numbers and up using high numbers.
W=100: Box width in pixels
H=100: Box height in pixels
Filename=Logo.bmp: This parameter represents the logo name. Insert the file name and NOT the file path. (**Note:** The logo file must be inserted in: "C:\ProgramData\ArchiMED Suite\ClinicLogo". The logo file must have BMP, JPG or PNG format). The default logo is: Default.bmp (as shown below). You can create any logo file as needed.

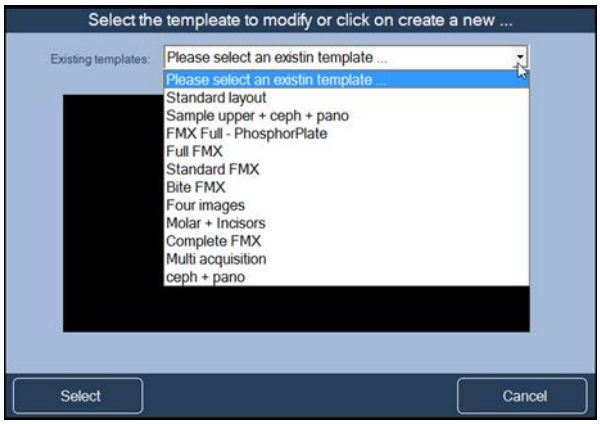


In the end, it will:

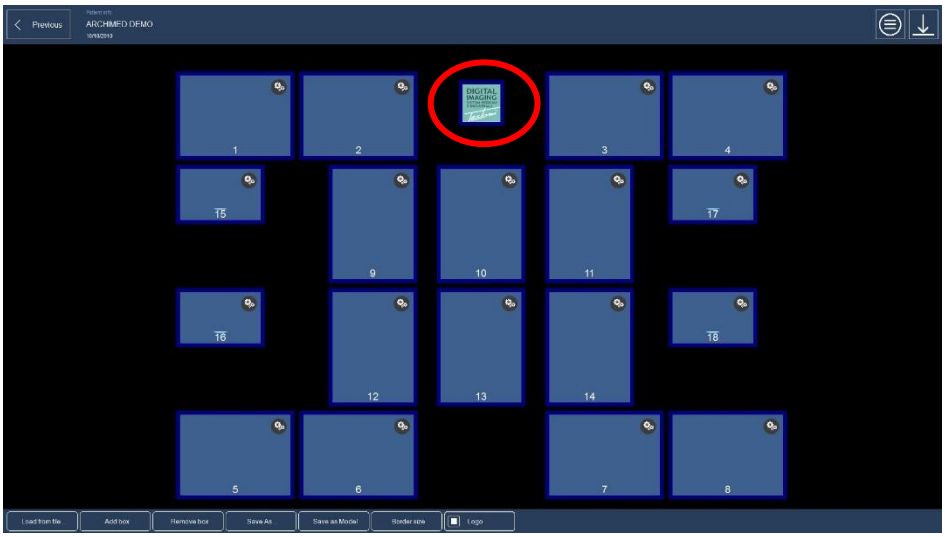
```
; Logo
[Box_0]
Exists=1
AIdx=0
X=660
Y=60
W=100
H=100
Filename=Logo.bmp
```

If you want to modify the logo from the program, proceed this way:

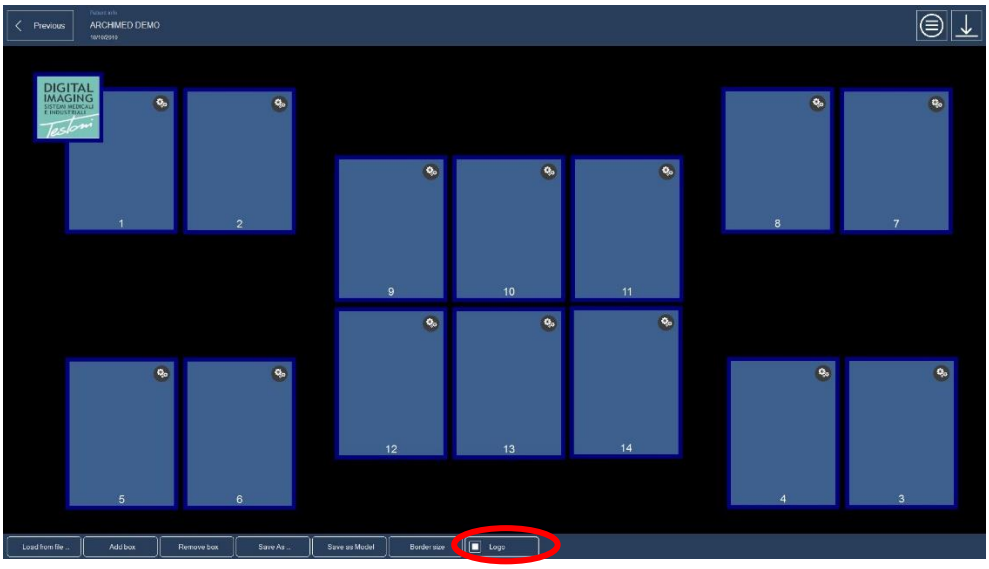
1. Open the "Template editor" from FMX category and select the template.



2. If you selected the template where you created the logo from the folder: "C:\ProgramData\ArchiMED Suite\FMX_Templates", the logo will **already** appear on the FMX template (shown below)

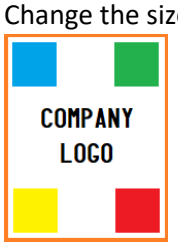


3. Otherwise you can apply the logo by clicking on the “Logo” button 
 :



By default, the logo will appear at the top left of the screen, but you can:

- Drag it by holding down the left mouse button on the logo box.
- Change the size of the box by holding down the left mouse button on one side of the box:



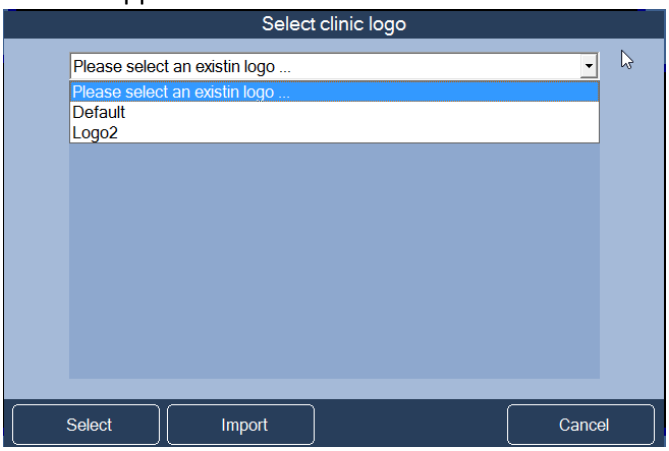
Anyway, on the FMX template the logo size will have the right proportion to the area.

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If you want to remove the logo, click again on the “Logo” button 

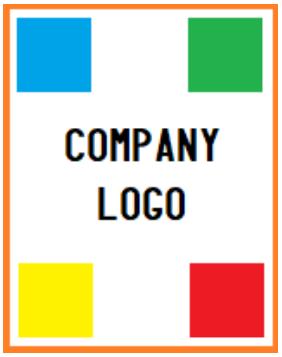
.
You can import another logo from the program. Proceed as follows:

1. Double click on logo and will appear this window:



2. You can select an existing logo from the drop down menu (the logotypes in this list are stored in: “ C:\ProgramData\ArchiMED Suite\ClinicLogo”)
3. If you want to import a logo from any computer folder, click on “Import” and select the logo you want.

This way you can import a logo in Bitmap file format only. From this window, click on magnifier to see the logo preview:



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