

1 Home page



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# **Mediadent user manual V8**

## **Part 2: D.F.O**

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## 2 D.F.O

### Mediadent

#### Manual part 2 D.F.O

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##### Intended use:

Mediadent is an imaging software for dental and maxillo-facial professional users only, i.e. licensed dentists, orthodontists, and dental assistants. Mediadent visualizes, processes and saves digital or digitized images acquired with dental imaging devices.

With Mediadent, images can be sent to various archiving and communication systems.

The Mediadent software is to be used on a computer with a Windows operating system in the dentist's practice or the dentist work area (office).

Mediadent proposes various digital image processing tools to improve the quality and diagnostic value of the acquired 2D and 3D images. It allows the user to magnify/reduce images, apply pre-defined filters such as image sharpness and contrast and to perform measurements on the images. The Dental Facial Orthopedics (D.F.O.) module permits the orthodontist and maxillo-facial surgeon to perform automated cephalometric analysis.

Mediadent aims to facilitate image interpretation by providing the user a clear, enhanced view of the dental health of the patient and subsequently support diagnosis, treatment planning and follow-up.

##### Residual risk:

Corilus would like to draw attention to the following residual risks associated with the use of Mediadent:

1. Software bugs are inherent to any software system, such as Mediadent. Corilus has processes in place to prevent, identify and resolve known bugs timely. Despite these efforts, the risk of an unknown bug in Mediadent, which could potentially lead to information being wrongfully processed or displayed incorrectly, is nonetheless inherently present.
2. Corilus attaches the greatest importance to safeguarding information security and data protection for its products and related services. Nevertheless, cybersecurity is a joint responsibility between Corilus and the users of the software and a security incident always remains a potential risk in a connected environment. As a user of Mediadent, we therefore strongly advise to protect your workstations by keeping your operating system and SDK/drivers up to date and by installing firewall and endpoint protection software (e.g. anti-virus).
3. Mediadent relies on correct use by the user. To support correct use, a minimum requirements list (part of this user manual), training materials and user-documentation on Mediadent are made available and updated on a regular basis by Corilus and its Distributors. Yet, human error in the use of Mediadent cannot be ruled out and could possibly lead to erroneous output.
4. The user remains responsible for the dental imaging hardware's maintenance and configuration. Errors directly associated with a faulty dental imaging hardware might result in a risk in the Mediadent software (e.g. source image comes into Mediadent poorly calibrated). Mediadent can't be held responsible for any malfunction of the devices it interfaces with or any wrong images (e.g. not calibrated correctly) that are sent to Mediadent.
5. Corilus wishes to provide state of the art imaging software and best of class service and support. That is why, we have set up and maintain an effective Quality Management System, based on the ISO-13485 standard. Even though we continuously improve our quality processes, there is always a small chance that an error occurs which potentially impacts the product's performance or safety. In such a case, we ask the

user to contact Corilus as soon as possible (via the Distributor, if relevant) so that we can identify the root cause and take the necessary corrective and preventive actions.

All identified risks are reduced as low as possible and none of these residual risks are deemed unacceptable. Undesirable side effects and contraindications for the use of Mediament have not been identified.

## Clinical benefit:

Mediament offers a wide range of state of the art image enhancement, processing and measurement tools to provide a positive impact on patient management by supporting accurate diagnosis, treatment planning and follow-up.

## Special considerations:

The Mediament imaging software is always integrated in a **Patient Management System (PMS)**.

All Patient Management Systems compatible with the use of the OLE interface are deemed compatible if they correctly implement the specifications of the “Embedding Mediament” documentation.





The use of the command line-interface is not officially supported anymore, but that we assist on a best effort basis for backwards compatibility reasons. Please, contact your dealer if you have questions about this type of interface.




You will be able to launch Mediament via the PMS system by clicking on the Mediament icon.

The list of compatible hardware imaging devices can be found on our [www.imagelevel.com](http://www.imagelevel.com) website. In case you have questions about compatibility, please contact your Dealer Support.

D.F.O software is an optional module in Mediament. Should you wish to use D.F.O, please contact your local dealer.

## Symbols used in this document and on the label

Symbol	Title	Description
	<b>Manufacturer</b>	Indicates to the name and address of the manufacturer.
	<b>Date of manufacture</b>	Indicates the date that the product was manufactured, expressed as four digits for the year (“YYYY”) and two digits for the month (“MM”). For software, this represents the production release date.
	<b>Consult instructions for use</b>	Indicates the need for the user to consult the instructions for use. The user manual (instructions for use) is supplied in electronic format. You may consult the user manual via the Help section of the Mediament software via the Help-menu or by hitting the “F1”-shortcut key. Alternatively, you may also download a PDF copy via <a href="http://www.imagelevel.com">www.imagelevel.com</a> or request a printed copy free of charge by contacting our Customer Support. Paper manuals will be delivered at the latest within 7 calendar days.
	<b>CE Marking</b>	The letters ‘CE’ appear on many products traded on the extended Single Market in the European Economic Area (EEA). They signify that products sold in the EEA have been assessed to meet high safety, health, and environmental protection requirements.

	<b>Medical device</b>	Indicates that the item is a medical device.
	<b>Unique Device identifier</b>	Indicates a carrier that contains Unique Device Identifier (“UDI”) information.
	<b>Translation</b>	To identify that the original medical device information has undergone a translation which supplements or replaces the original information

## 3 User information

### 3.1 Minimum System Requirements

- OS:
  - Microsoft windows 8.1 or higher
  - Latest info on supported OS versions: <https://support.microsoft.com/nl-be/help/13853/windows-lifecycle-fact-sheet>
- CPU:
  - Dual core processor or higher.
- Main Memory:
  - 4 GB RAM internal memory or more
- Graphics:
  - For 2D imaging:
    - Integrated or dedicated graphics card.
    - Resolution: 1024x768 or higher
    - Memory: 256MB
  - For 3D viewer:
    - Dedicated graphics card
    - Resolution: 1024x768 or UHD or HD
    - Memory: 4GB
  - For CT image capture:
    - This depends on the hardware that is being used.
    - Dedicated graphics card
    - Resolution: 1024x768 or UHD or HD
    - Memory: 4GB
    - Some devices need NVIDIA CUDA support (<https://developer.nvidia.com/cuda-zone>)
- USB ports:
  - 1 free USB1.1 port (or higher) for license key (Single user installation)
  - 1 free USB2.0 port (or higher) for USB capture devices.
- Storage:
  - Type: SSD (Solid State Drive) recommended. (fast)
  - Size: Minimum 512 GB
  - User must have full rights on the program and data directory.
- Network Adapter:
  - Windows driver available for the installed OS.
  - 10/100/1000 Mbps
  - RJ-45 connector
  - Solid network connection.
  - Some x-ray device needs additional dedicated network card.
- Network Data shares:
  - file change notification to correctly refresh the image library and status view.
  - Windows: SMBv2 or higher
  - NAS / Linux: Samba 2.0 or higher (smb.conf | Default: change notify = yes)
  - User must have read/write rights on the data share.
- Software

- PDF for accessing the electronic instructions for use (“User manual”) or the built-in Windows Help Viewer

## 3.2 Important user information



### Warnings and precautions:

- Users of Mediadent should be dental healthcare practitioners qualified to perform and interpret dental imaging.
- Introduction training on the use of Mediadent software is provided by your dealer during the installation process. Users also receive access to the full set of documentation, available via [www.imagelevel.com](http://www.imagelevel.com). In case of further questions regarding use, the user is requested to contact the dealer for support or to request a formal training to be scheduled.
- This software is an aid to diagnosis only. You must apply your professional training and judgment before deciding a course of treatment.
- Installations may only occur on environments that fulfill the **minimal system requirements (Section 3.1)**. The user is responsible for the supporting infrastructure (e.g. computer maintenance, network connectivity, electrical power) and its stability.
- The **minimal system requirements (Section 3.1)** inform the user that the use of virtualization is not officially supported. Please, contact your dealer if you have questions about the use of virtualization.
- Radiographic images are not for diagnostic use when viewed on displays or monitors that do not meet **minimum system specifications (Section 3.1)**.
- Any connected devices must be present on the compatibility list (see our [www.imagelevel.com](http://www.imagelevel.com) for the complete overview) to be officially supported.
- The user remains responsible for verifying the quality of images and the associated meta-data while using Mediadent software and when importing to and exporting from Mediadent.
- It is recommended that you do measurements or drawings only on calibrated images. Doing this on an image with no calibration information requires use of a reference segment of known length.
- Annotations and measurements made in the software are under your own responsibility. A radiographic image is a two dimensional image of a three dimensional object, and measurements may be subject to errors. Measurements are only informative and operations requiring precise positioning on the patient are under your own responsibility.
- Panoramic or OPG images, by their nature, contain distortions due to magnification both vertically and horizontally. Any calibrations on these image types must be seen as rough guides that apply only to the immediate vicinity of the calibration. Inserting objects of pre-determined length such as implant simulators provides approximative information.
- Patient orientation information is not provided for intraoral images, computed radiography (CR) images, cephalometric oblique images or color images. Orientation of these images depends on user manipulation



and patient positioning.

**Serious incidents:**

Please report any incidents relating to Mediadent software without delay to your dealer. Your dealer shall do what is necessary to fulfill their legal and contractual obligations and to help mitigate the incident as soon as possible.

You may also contact your local competent authority for vigilance. For EU, the list of contact details is available via their website.

This table provides an indication of the measurement performance of Mediadent. The variations observed during these measurements may not truly reflect the potential variance of actual dental measurements in clinical practice, which may be more difficult to perform.

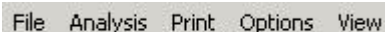
It is recommended to calibrate the sensor using the standard calibration algorithms to maintain consistency in measurements.

	Mediadent measurement performance		
Gold standard: true object length (in mm)	Mean Measured (in mm)	Standard deviation (in mm)	95% confidence Interval (in mm)
Test object 1: 10.000	10.004	0.018	10.000 +- 0.016
Test object 2: 20.000	20.022	0.029	20.000 +- 0.026

## 4 D.F.O user manual

### 4.1 Main Menu

#### Main Menu

A horizontal menu bar with five items: File, Analysis, Print, Options, and View.

**File (Section 4.2)**

**Analysis (Section 4.6)**

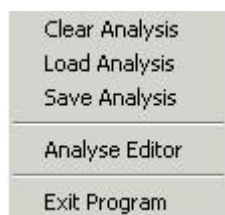
**Print (Section 4.7)**

**Options (Section 4.8)**

**View (Section 4.18)**

### 4.2 File

#### File



**Clear Analysis (Section 4.3)**

**Load Analysis (Section 4.4)**

**Save Analysis (Section 4.5)**

Analysis Editor: Optional Module

**Exit Program (Section 4.35)**

### 4.3 Clear Analysis

#### Clear Analysis



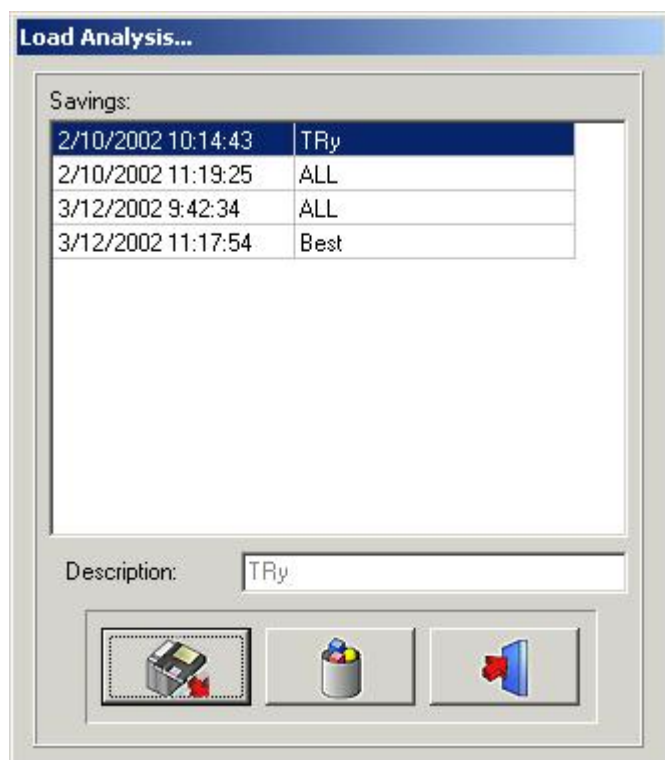
By clicking on this icon all points (templates, analyses,...) will be removed from the active image. This function gives you the ability to restart an analysis on the active image

### 4.4 Load Analysis

### Load Analysis



This function allows you to load an earlier saved analysis, made on the active image.  
Clicking on the icon gives the next pop-up window:



Clicking on the selected name and then clicking on the Load icon, or by double-clicking on the selected name, will load the chosen analysis.

Analysis can be deleted, by clicking on the selected name, followed by clicking on the *delete icon*.

## 4.5 Save Analysis

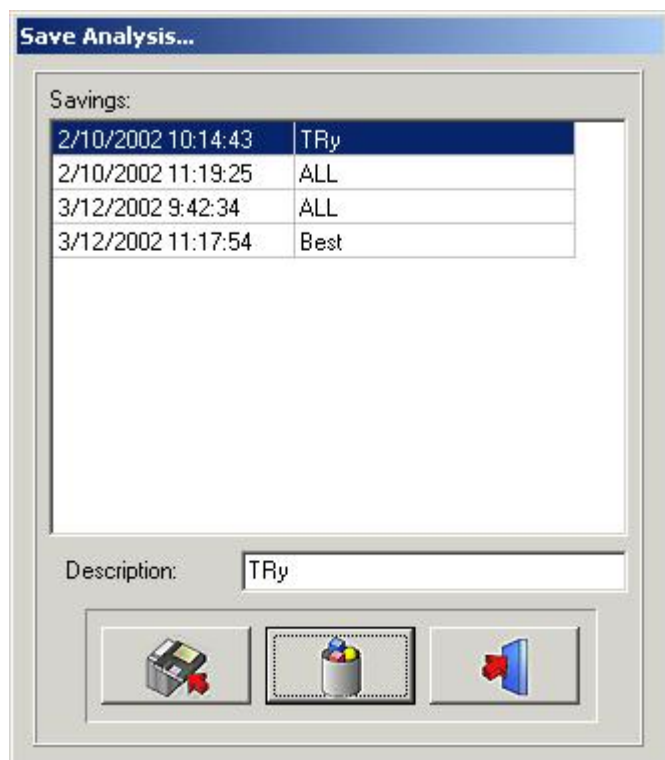
### Save Analysis



This function allows you to store, or re-store, any analysis, whether finished, or unfinished, on the activated image, after modification.

All points are stored with the image.

Clicking on the **Save Analysis** icon gives the next pop-up window:



To save the analysis, you can use an existing name, simply by clicking on one of the names in the list., or you can type a new name in the description box, then clicking on the *save icon*.

Earlier saved analysis can't be overwritten, not even when you use the same name.

Analysis can be deleted by clicking on the selected name, followed by clicking on the *delete icon*

## 4.6 Analysis

### Analysis



All the standard cephalometric analyses, your optional analyses and your self-made analyses (Editor) are shown in

this menu.

You can select all the analyses you want to use, simply by clicking on them.

Select All: If you want to use all the analysis you can click on *Select All*.

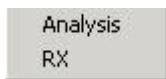
Deselect All: By clicking on *Deselect All* all the analysis will be unchecked.

Remark: D.F.O will ask you to set **all** the points needed for **all** your selected analyses!!

So, to decrease your analyzing time, it is recommended to deselect the analyses you won't use.

## 4.7 Print

### Print

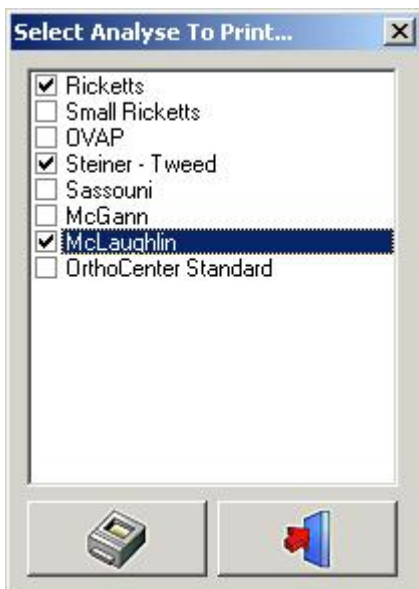


In this Print menu you can select what you want to print.

Analysis  
Rx

#### Analysis

If you select *Analysis* the next window will pop-up:



In this window you can choose the analyses, which are selected in the analyses menu, you want to print, simply by clicking on its name.

It is possible to select more than one analysis.

When you click on the *Print* icon all the selected analyses will be printed at once.

#### X-Ray

In this window, you can choose the analyses you want to print, simply by clicking on its name.  
It is possible to select more than one analysis.  
When you click on the *Print* icon all the selected analyses will be printed at once.

### X-Ray

If you select *X-Ray* the ceph will be printed out in a "Fit To Page" size.  
The image will be printed out as it is shown on your desktop:

X-Ray + Tracing  
X-Ray without tracing  
Tracing without X-Ray  
Blank

## 4.8 Options

### Options



**Calibrate (Section 4.9)**

**Desktop (Section 4.10)**

**Language (Section 4.11)**

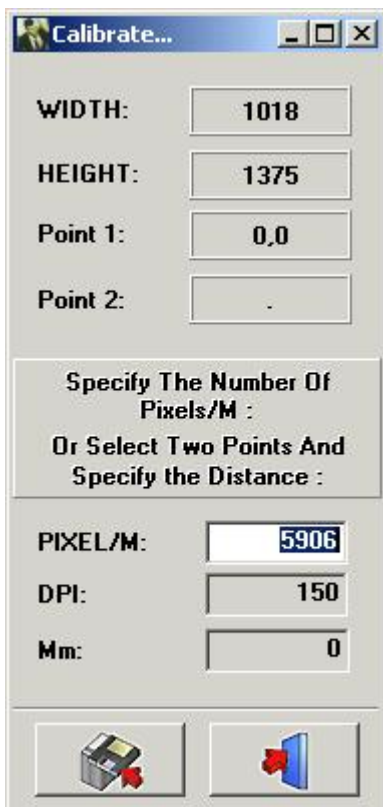
**Setup (Section 4.12)**

## 4.9 Calibrate

### Calibrate



The calibrate function allows you to calibrate your image.  
Clicking on the Calibrate icon gives the next pop-up window.



There are 3 ways to calibrate your image

I. PIXEL/M: This can be used if the values are known for the system used.

II. DPI: Dot Per Inch.

This can be used if the values are known for the system used.

III. Distance between 2 points: If no calibration values are known you can calibrate your image by measuring a well known subject in the image, or a pre-attached object on an image.

Click with the left mouse button in the small "mm window". The window will be marked in white.

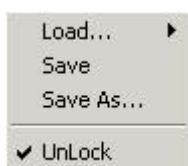
Click with the left mouse button on the first well known point. Now, when you move the cursor, a thin white line, which represents the distance, will appear. When you click a second time, on a well known point, the distance, will be monitored in the "mm window". This value can be changed.

When you save this value, the image will be recalibrated.

Images acquired, with known original sensors, or phosphor plate dimensions, are automatically calibrated.

## 4.10 Desktop

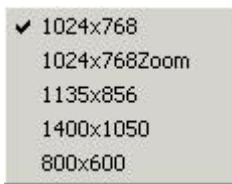
**Desktop:**



This menu can be used to alter your desktop.

*Load... :*

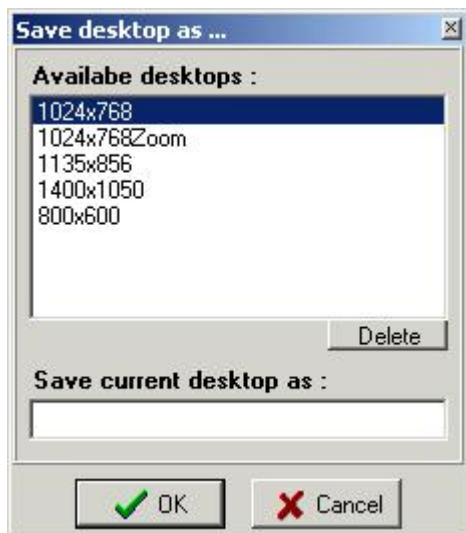
When you move the cursor over *Load...* the next pop-up window will appear:



In this window the names of all the standard desktops, plus your self-made desktops, will appear. You can select each desktop, simply by clicking on its name.

**Save:** Clicking on save will save the edited, or the new desktop, in the program directory.

**Save As ... :** Clicking on Save As... shows the following pop-up window:



A new desktop name is requested.

It will save the edited desktop as a new desktop in the program directory.

**Unlock:** When unlock is unchecked it is impossible to move or reshape the viewports and toolbars.

## 4.11 Language

### Language

When you move the cursor over Language the next pop-up window will appear:





The language of D.F.O can easily be changed, simply by clicking on the language name.

## 4.12 Setup

### Setup

This menu is divided in 5 tab windows

**Colors (Section 4.13)**

**Filters/Printers (Section 4.14)**

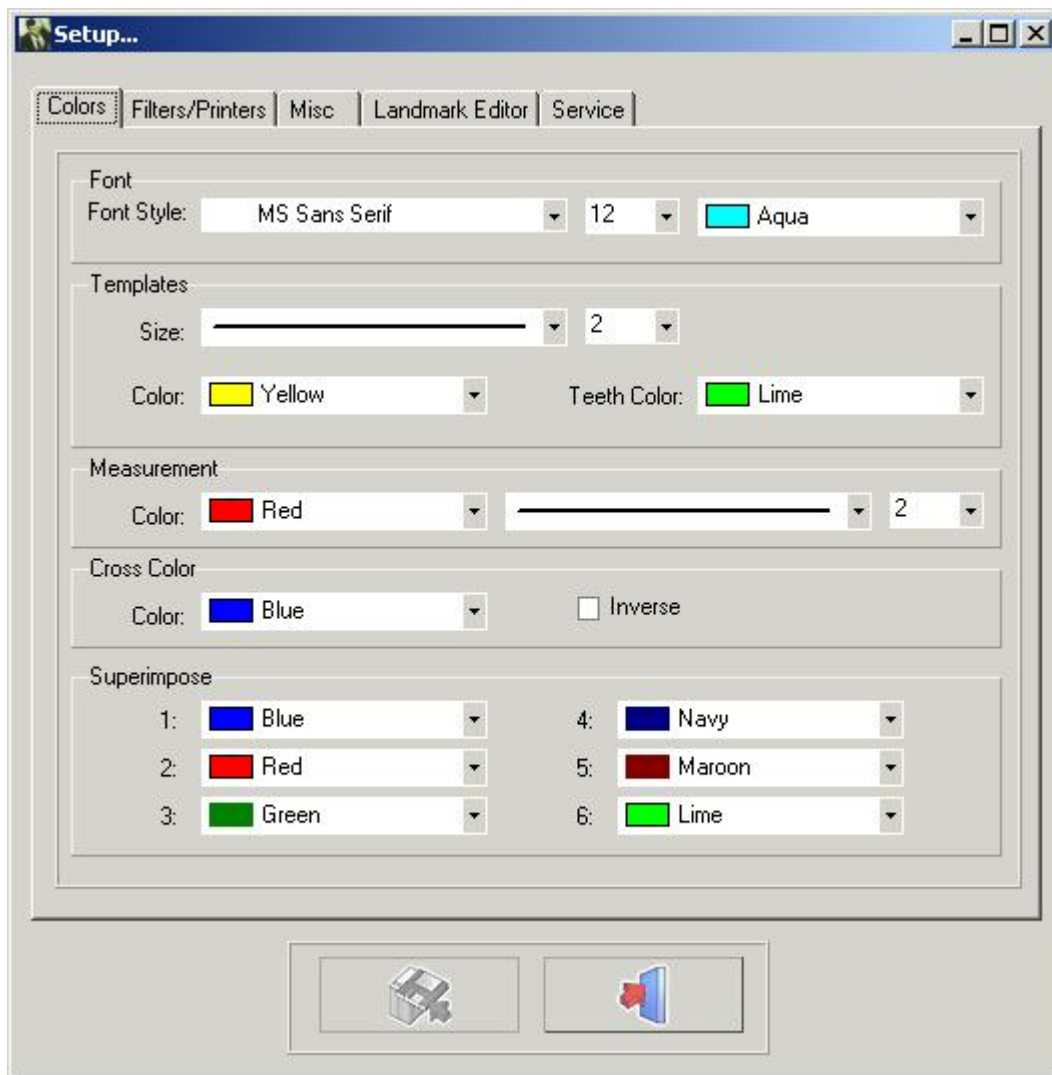
**Misc (Section 4.15)**

**Landmark Editor (Section 4.16)**

**Service (Section 4.17)**

## 4.13 Colors

### Colors



In the *color* tab all the drawings and measurements can be altered to your own personal preset.

*Font:* In this window you can change the font, the font size and the font color of the landmarks.

*Templates:* In this window you can change the size and the colors of the templates.  
The color of the teeth can be adjusted separately.

*Measurements:* In this window you can change the size and the color of the measurements.

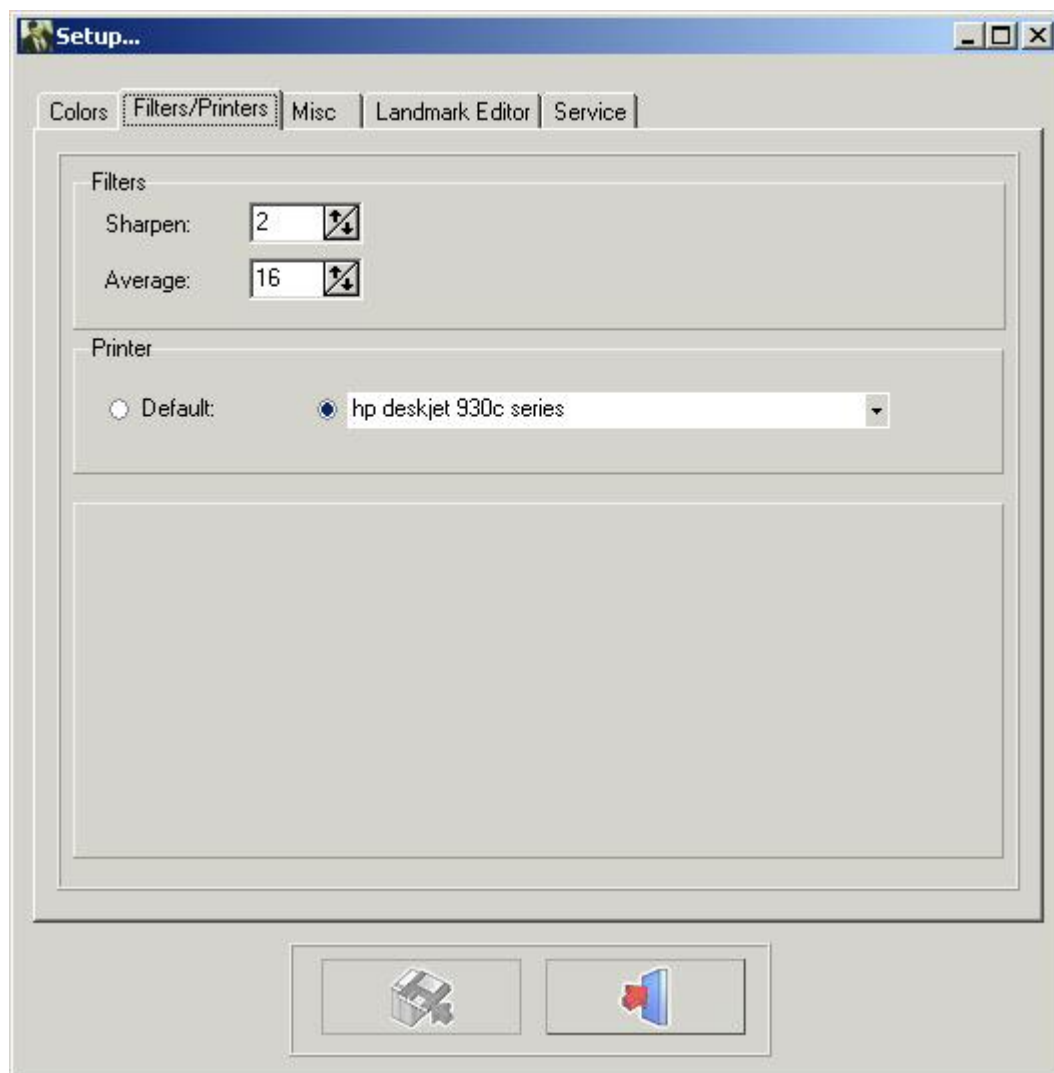
*Cross Color:* In this window you can change the color of the cross of the zoom window  
It is also possible to select *inverse*. When inverse is selected the cross will always appear in the inverse of its background.

*Superimpose:* In this window the colors of the different tracings loaded in superimpose can be altered.

Remark: Changes can be saved by clicking on the save button.

If the changes are not saved the changes will not be remembered when D.F.O is restarted.

## 4.14 Filters

**Filters/Printers**

Filters: In this window the weight of the corresponding filters can be adjusted.

**Sharpen (Section 4.31)**

**Average (Section 4.32)**

Printers: In this window you can choose which printer you want to use in D.F.O.

Remark: Changes can be saved by clicking on the save button.

If the changes are not saved the changes will not be remembered when D.F.O is restarted.

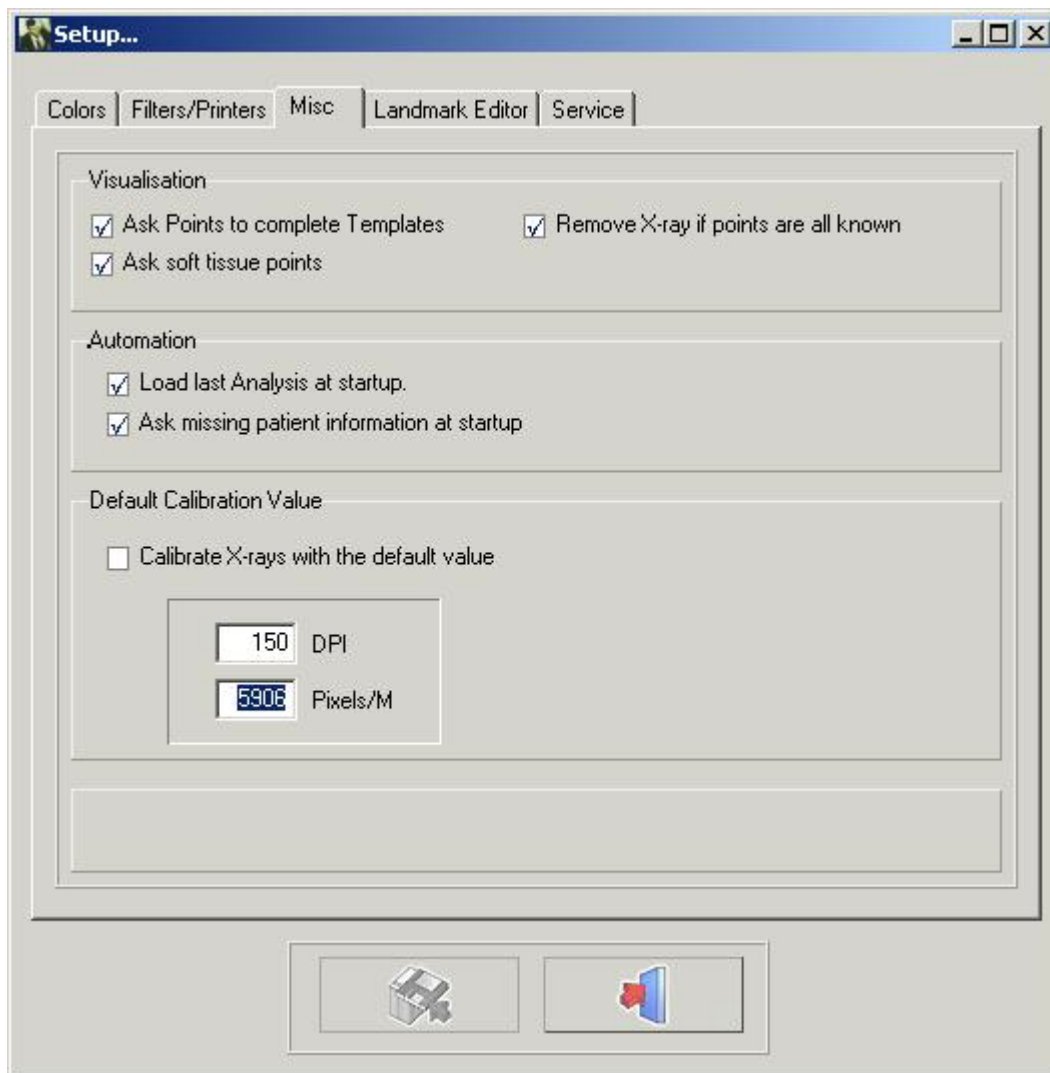
## 4.15 Miscellaneous

### Miscellaneous

Visualization

Automation

Default Calibration Value



### Visualization

When "Ask Points To Complete Templates" is not ticked, D.F.O won't ask you extra points needed for the drawing of templates.

When "Ask Soft Tissue Points" is not ticked, D.F.O won't ask you extra points needed for the drawing of the soft tissue.

When "Remove X-Ray if points are all known" is selected, D.F.O will automatically remove the X-Ray when all the points, required for the selected analyses are set.

### Automation

When "Load Last Analysis at Startup" is selected, D.F.O will automatically load the last made/used analysis on the image.

When "Ask Missing Patient Information at Startup" is selected, D.F.O will automatically ask for the missing information when the image is loaded.

### Default Calibration Value

This function allows you to calibrate each loaded image with a default value.

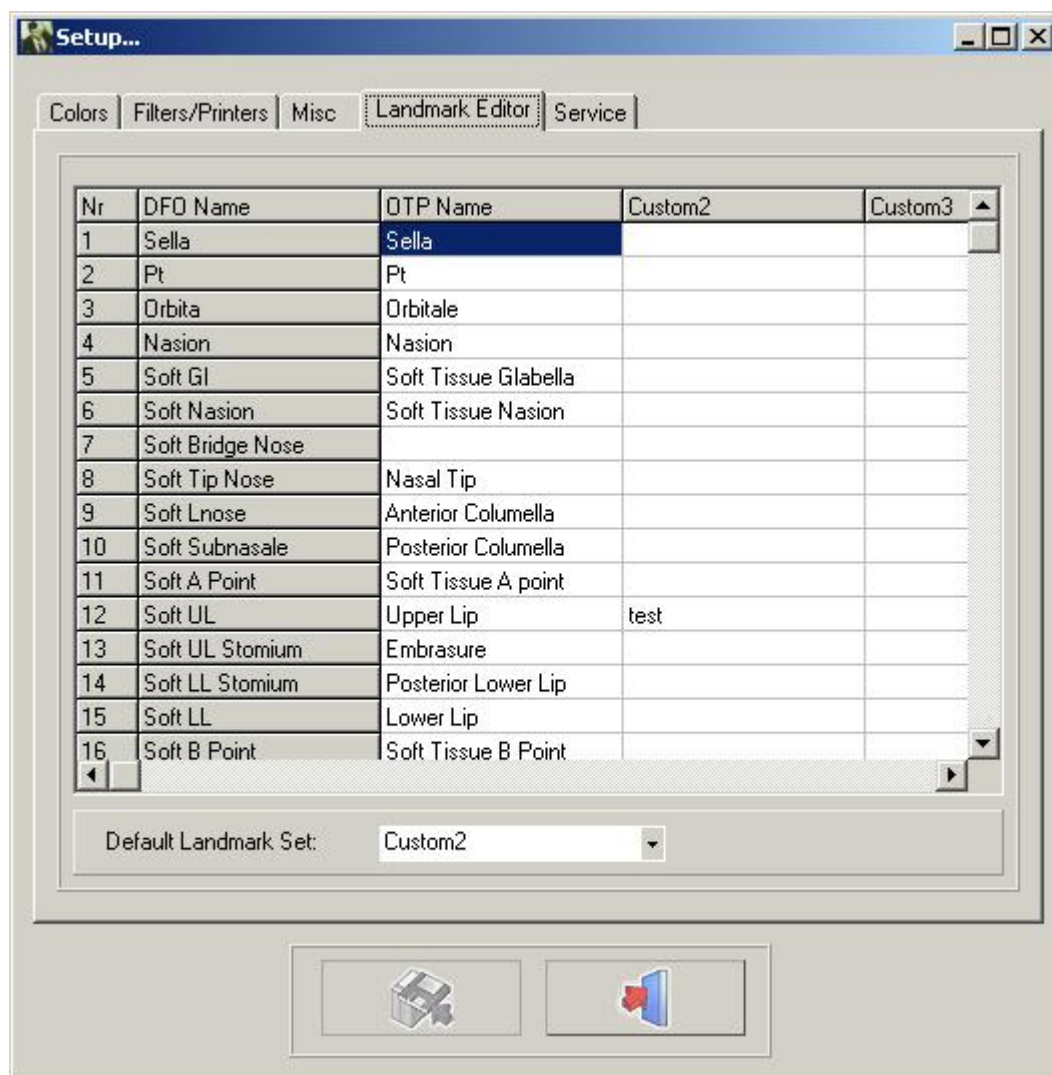
This default value can be altered, simply by filling in the correct DPI or Pixels/M.

Remark: Changes can be saved by clicking on the save button.

If the changes are not saved the changes will not be remembered when D.F.O is restarted.

## 4.16 Landmark Editor

### Landmark Editor



In this window you can alter the names of the landmarks used in the "Tracing" tab.

There are 4 different columns.

The first column "D.F.O name" can't be changed.

The second column "OTP name" shows you the names of the landmarks as they are used in the OTP program.

The third and fourth columns can be filled in with your own personal landmark names.

You can select your favorite column by clicking on the small arrow on the "default landmark set" window and then choose the name of your favored column.

It is not necessary to fill in the whole column.

For each landmark that isn't filled in, D.F.O will show the "D.F.O name".

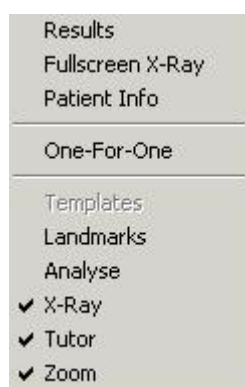
## 4.17 Service

### Service

This tab can only be used for authorized servicing.

## 4.18 View

### View



### Results (Section 4.30)

Full screen X-Ray This function will show you the print preview of the X-Ray in a "Fit to Page" size (full screen).

### Patient Info (Section 4.33)

One-For-One: One "pixel" for one "pixel".

The X-ray will be shown in a way that each pixel on screen will represent exactly one captured pixel.

### Templates

Landmarks: This function will monitor all the landmarks with their D.F.O name.

### Analysis (Section 4.28)

### X-Ray (Section 4.27)

### Tutor (Section 4.29)

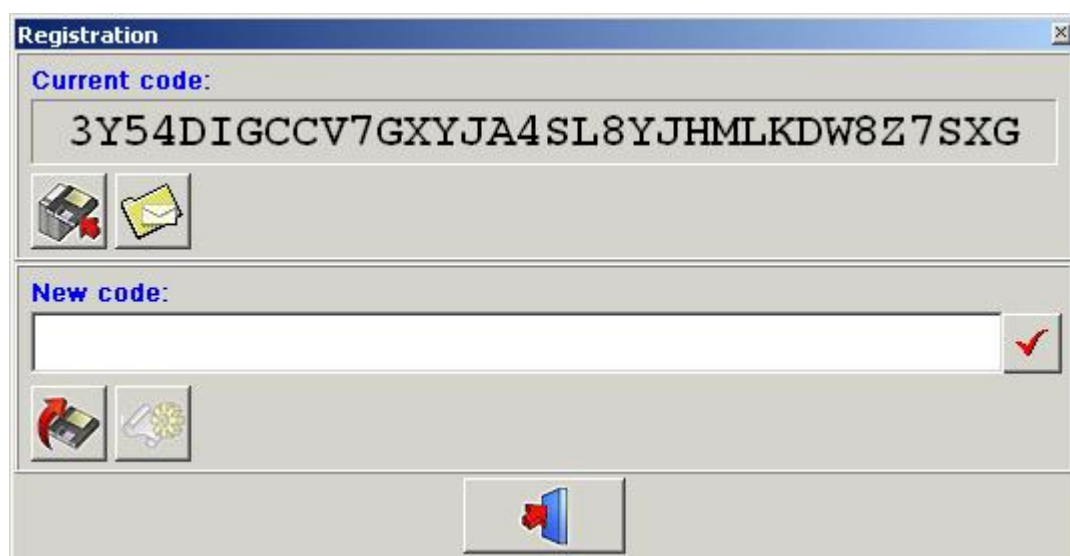
**Zoom (Section 4.36)** This function will activate the "zoom window"

## 4.19 Help

[Help](#)


[About](#)

[Registration](#)




Current code: the current generated code.



Press  to copy this code onto a floppy disk.



Press  to send this code through email.

This function allows you to re-program the hardware key.

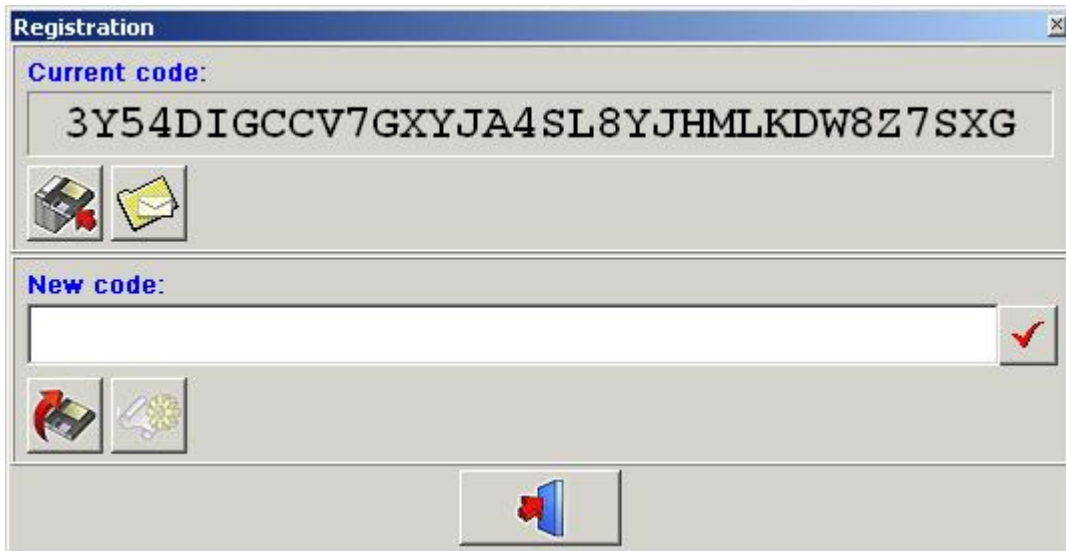
This step can be mandatory if you need additional modules like the analyse editor.

The "**Current code**" can be e-mailed to ImageLevel directly.

After verification, the "**New code**" will be sent to you. Paste the code into the "New code" window. Press the "**V**" icon to check the key and to re-program your hardware key.

## 4.20 Registration

### Registration (Section 4.19)



This function allows you to re-program the hardware key.

This step can be mandatory if you need additional modules like the analyse editor.

The "**Current code**" can be e-mailed to ImageLevel directly.

After verification, the "**New code**" will be sent to you. Paste the code into the "New code" window. Press the "**V**" icon to check the key and to re-program your hardware key.

## 4.21 Control Window

### Control window

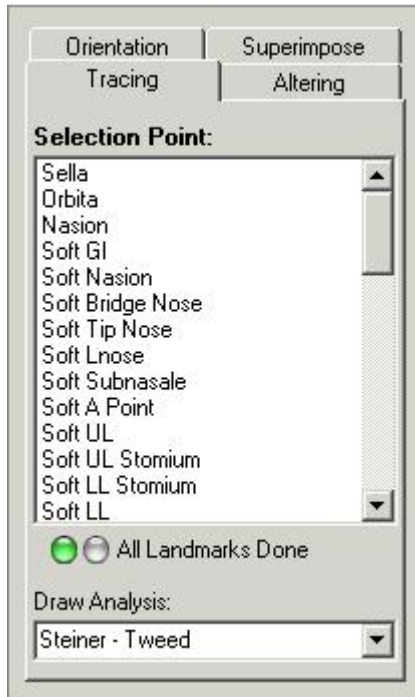
The control window has 4 tabs:

- **Tracing** (Section 4.22)
- **Altering** (Section 4.24)
- **Orientation** (Section 4.23)
- **Superimpose** (Section 4.25)

## 4.22 Tracing

### Tracing





On top of the tracing tab you will see a *Selection Point window*.

In this window all points needed for the selected analyses (analyses menu) are given.

D.F.O asks you to set the missing landmarks by marking them, one by one, in blue.

When you want to set a different point from the marked point, you can select that point by clicking on its name.

Every selected point is shown in the Tutor window. (later)

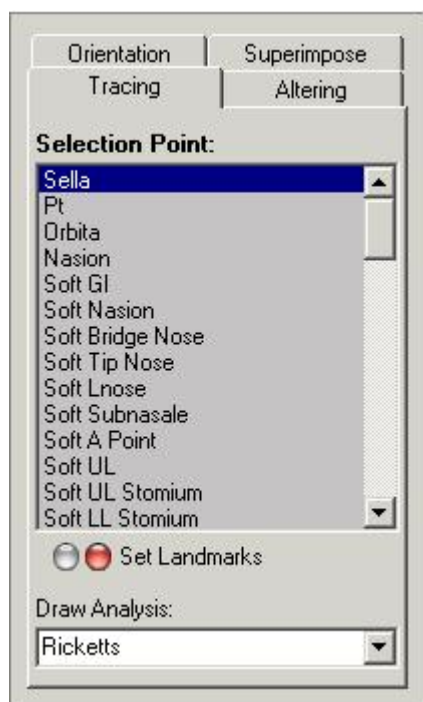
Points can be set by clicking with the left mouse button on the corresponding spot on the X-ray.

When a point is set, D.F.O will immediately draw the templates.

When all the points needed for the selected analyses are set, D.F.O will draw the chosen analysis. ( see *menu: options: setup*)

When you want to draw another analysis from your selection, you can choose the analysis in the "draw analysis for:" window.

By clicking on the little arrow on the right hand side of the window, your selection is shown in a small pop-up window.

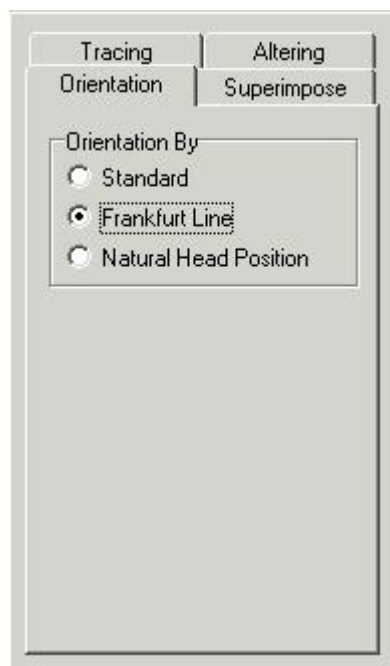


In this pop-up window you can choose the analysis you want to draw.  
When you click on your chosen analysis, D.F.O will immediately draw the analysis.

## 4.23 Orientation

### Orientation

Clicking on the Orientation tab shows the following tab.



This function allows you to alter the orientation of the image.

**Standard:**

The standard orientation shows the image the way it is captured. (If the patient is properly positioned, the image will be orientated on the Frankfurter Horizontal .)

(Default)

**Frankfurter Horizontal:**

By selecting the "Frankfurter Horizontal" the image will be orientated in such way that the frankfurter line will appear horizontally on screen.

**Natural Head Position:**

If the "Natural Head Position" is selected the image will be orientated in such way that the frankfurter line will appear with a deviation of 8° to the horizontal.

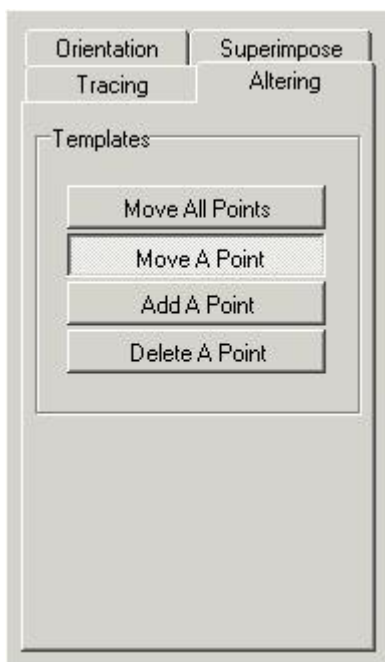
Remark:

The orientation can only be altered if the points (Porion, Orbita) needed for the Frankfurter Line are set.

## 4.24 Altering

### Altering

Clicking on the altering tab gives you the following tab.

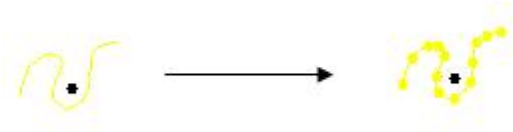


This tab has 4 different functions to alter the drawn templates.

- Move All Points
- Move A Point
- Add A Point
- Delete A Point

When the tab is activated all templates are marked by some points.

ex. sella



These points can be altered.

#### Move All Points:

This function allows you to move the template completely.

Click with the left mouse button on one of the points, hold the button, and move the template with the mouse. When the template is in the right place, loosen the button. (drag and drop)

#### Move A Point:

This function allows you to move one point of the template.

Click with the left mouse button on the point, hold the button, and move the point with the mouse. When the point is at the right place, loosen the button. (Drag and drop)

#### Add A Point:

When the template can't be properly optimized with the marking points of D.F.O, new points can be added on the template.

When you move the cursor on the template, a marking circle will appear.

You can add a point at that place by simply clicking with the left mouse button.

This point can then be moved to the right spot.

#### Delete A Point:

When this function is selected you can delete each point, one by one.

When you move the cursor on the template, a marking circle will appear.

You can delete a selected point by simply clicking with the left mouse button.

The template will automatically be adjusted.

## 4.25 Superimpose

### **Superimpose**

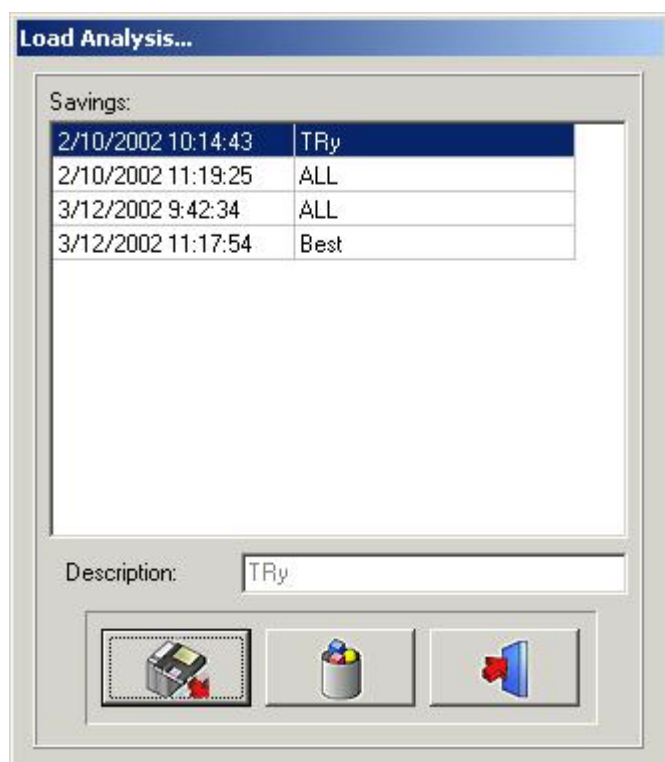


This function allows you to display several tracings over each other. These tracings have to be made on the same patient, but can be made on different cephalic X-rays (Cephs). With this function, it becomes easy to compare tracings before, after and during treatment.

Tracings can be loaded by clicking on the load button.



The following window will appear:



Clicking on the selected name and then clicking on the Load icon, or by double-clicking on the selected name, will load the chosen analysis.

The number of tracings that can be superimposed is unlimited.

Each tracing will appear in a different color, up to a maximum of six(6) colors. each referring to the colored title bar on top of the screen.

The tracings can be superimposed along these predefined references.

Porion-Orbita

Sella-Nasion

ANS-PNS at ANS

Basion-Nasion

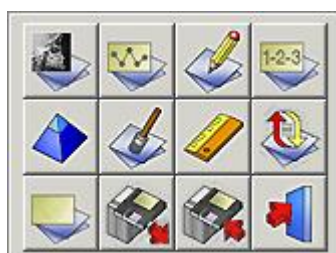
Gonion-Menthon at Menthon

Nasion-Basion at Nasion

The superimposed tracings can be printed, simply by clicking on the Print icon.

## 4.26 Icons

### Icons



**Show R-Ray (Section 4.27)**  
**Show Analysis (Section 4.28)**  
**Show Tutor (Section 4.29)**  
**Show Results (Section 4.30)**

**Sharpen (Section 4.31)**  
**Average (Section 4.32)**  
**Calibrate (Section 4.9)**  
**Reload R-Ray (Section 4.34)**

**Clear Analysis (Section 4.3)**  
**Load Analysis (Section 4.4)**  
**Save Analysis (Section 4.5)**  
**Exit program (Section 4.35)**

## 4.27 Show X-Ray

### Show X-ray



By clicking on this icon the loaded X-ray will be removed from the desktop.  
The zoom window will become white.  
This function does not remove the landmarks, templates, or analysis from the desktop.  
The Remove X-ray icon can be used in combination with other functions ("Show Analysis", "Show Results",...).  
When you click a second time on the icon, the X-ray will reappear on screen.

## 4.28 Show Analysis

### Show Analysis



This function allows you to see the selected analysis on your desktop.  
The analysis can only be shown, when all points needed for the activated analyses are set.  
This function can be used in combination with other functions ("Remove X-ray", "Show results",...).  
When you click a second time on the icon, the analysis will reappear on screen.

## 4.29 Show Tutor

### Show Tutor



Clicking on this icon will activate the Tutor function.  
When you click a second time on the icon, the "Tutor" will reappear on screen.

## 4.30 Show Results

### Show Results



By clicking on this icon, D.F.O. will show you the results on an Analysis Report.  
This report allows you to compare the values with the tracing. (later)

## 4.31 Sharpen

### Sharpen

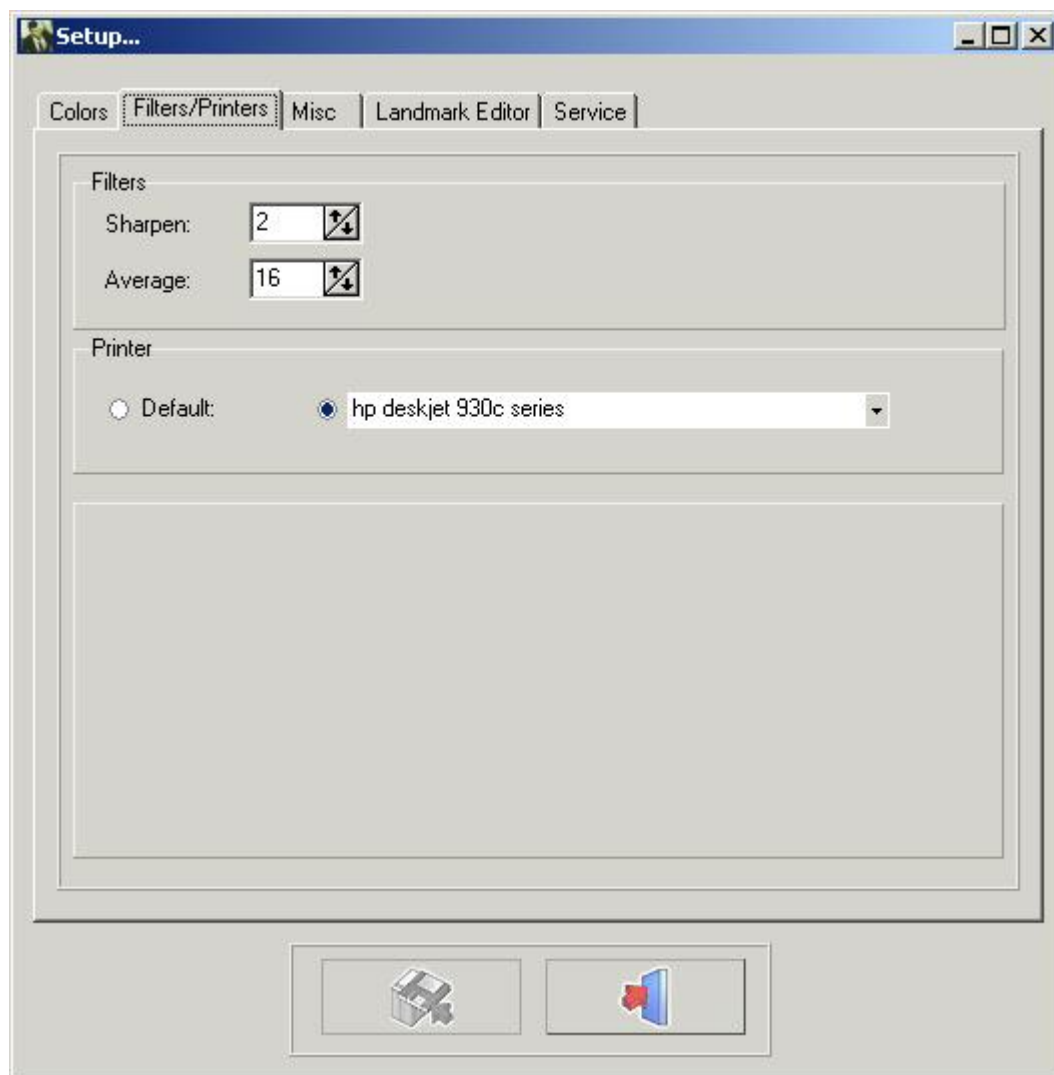


By clicking on this icon you will sharpen the active image.  
Sharpen will enhance the edges of the objects in the image.  
The Sharpen Weight can be adjusted in the Set Up screen (functional parameters tab).  
Sharpening can be repeated successively on the same image.  
Sharpening will introduce noise in the image, if incorrectly (too extensively) used.  
In this case a Noise Reduction should be applied.

Settings for **SHARPEN** : **OPTIONS** (Section 4.8) - **SETUP** (Section 4.12) - **FILTERS/PRINTERS** (Section 4.14)

Change the value in Filters - Sharpen.





Click the SAVE CHANGES button to save the settings before exit.

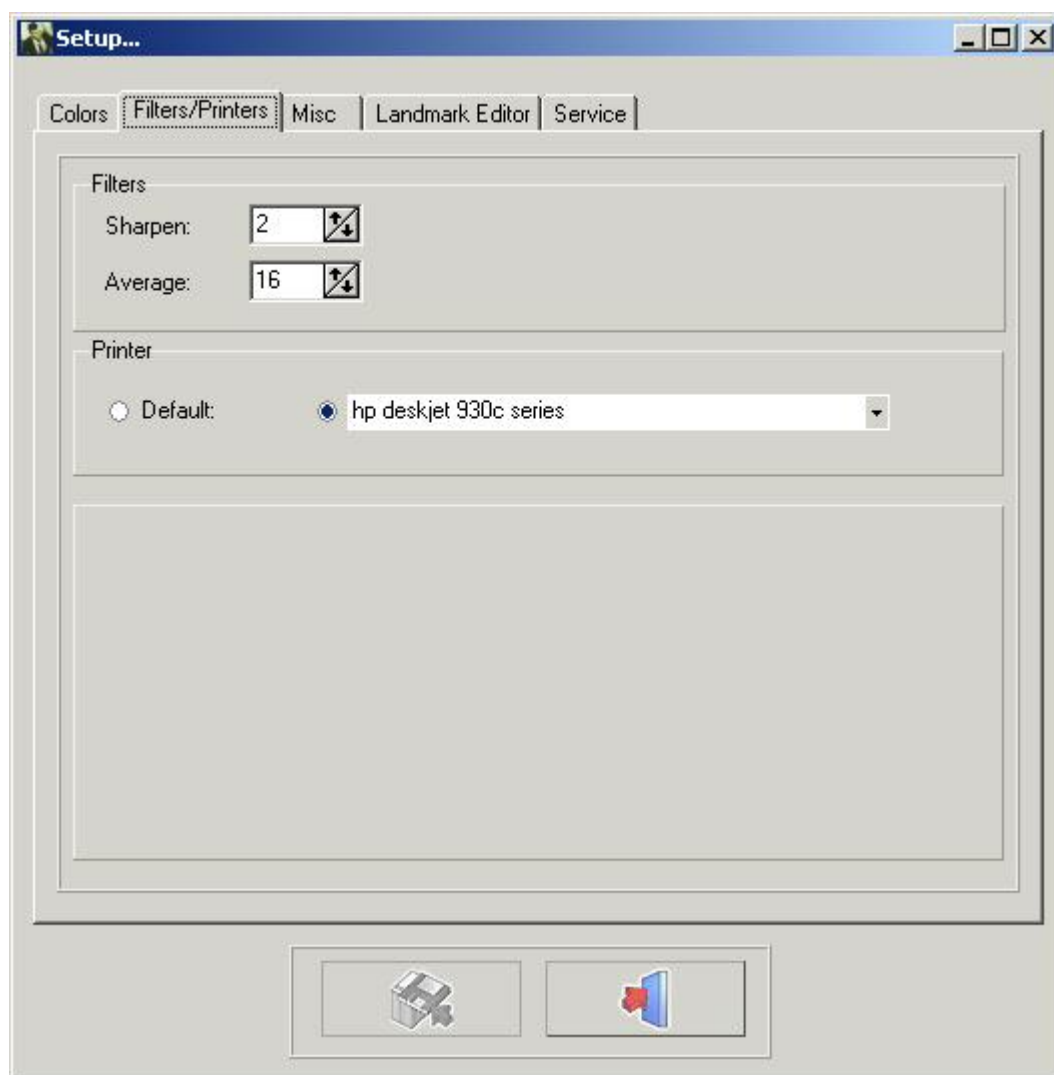
## 4.32 Noise Reduction

### Noise Reduction



By clicking on this icon you will reduce the noise from the selected image.  
The noise reduction function can be repeated on the same image.

Settings for noise reduction: Options menu - Setup - Filters/Printers: AVERAGE



Click the SAVE CHANGES button to save the settings before exit.

## 4.33 Patient Information

### Patient Information

Each item of the Patient Information, which isn't supported by the front end is colored in white. This missing patient information can be filled in.

For special cases it's possible to overwrite the front end information.

Clicking on the small lock will enable all the fields.

These fields can then be adjusted.

**Warning:** When the patient is reloaded the enabled fields can be overwritten by the front end.

## 4.34 Reload X-Ray

### Reload X-ray



By clicking on this icon you will reload the original image from the image library.

All former post processing on the active image will be reset. (Brightness, contrast, pseudo-colors...).

## 4.35 Exit Program

### Exit Program



Exit the program

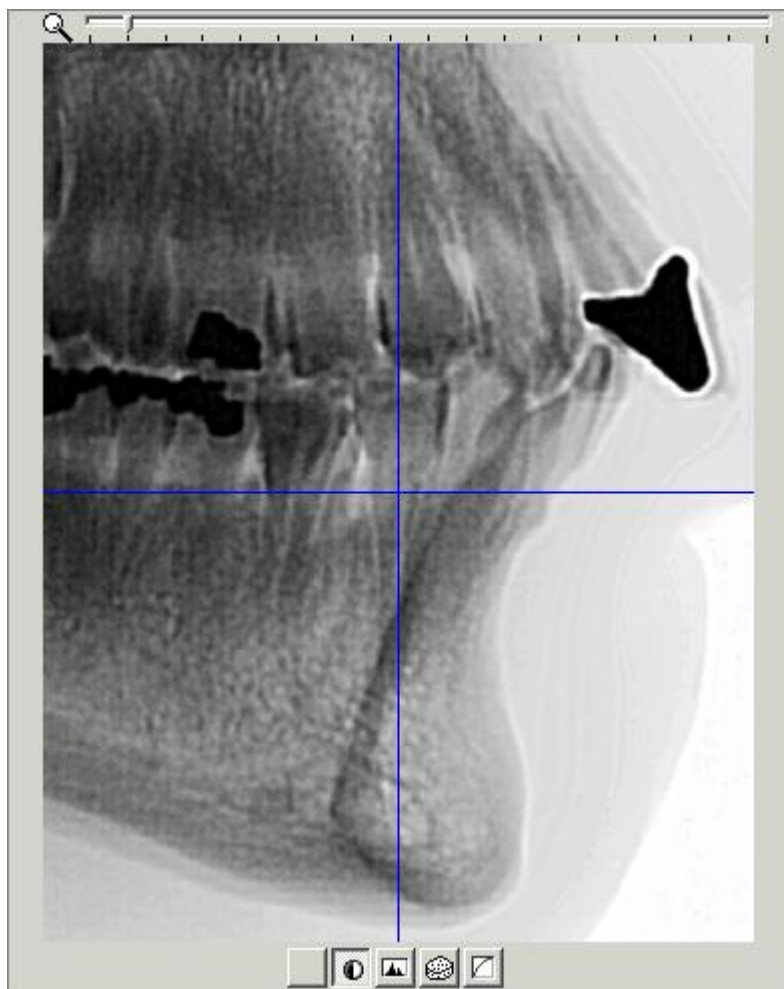
The program will exit back to Mediadent, or back to your Practice Management Software.

You can't close D.F.O separately!!

D.F.O will close automatically when Mediadent is closed.

## 4.36 Zoom Window

### Zoom Window



The *zoom window* allows you to set the landmarks precisely.  
This is possible, thanks to the superb zoom ability and the 5 special filters.

Each movement of the cursor on the loaded image will be displayed in "Real Time" in the *zoom window*.

You can zoom in and out, simply by using the mouse wheel.

In the *zoom window* the cursor is represented by a cross.  
As long as the pixels in the zoom window represent more than one pixel of the captured image the cross is colored in blue.

The cross changes into a very thin inverted line from the moment the image is displayed in a "One-For-One" format.

At the bottom of the *zoom window* 5 different buttons (filters) are displayed.

1. None
2. Invert
3. Spotlight
4. Emboss

## 5. Gamma

You can switch from one filter to another at any time with the mouse pointer or with the Left or Right arrow keys. The *Emboss* and *Gamma* filters can be adjusted with the Up and Down arrow keys on the keyboard.

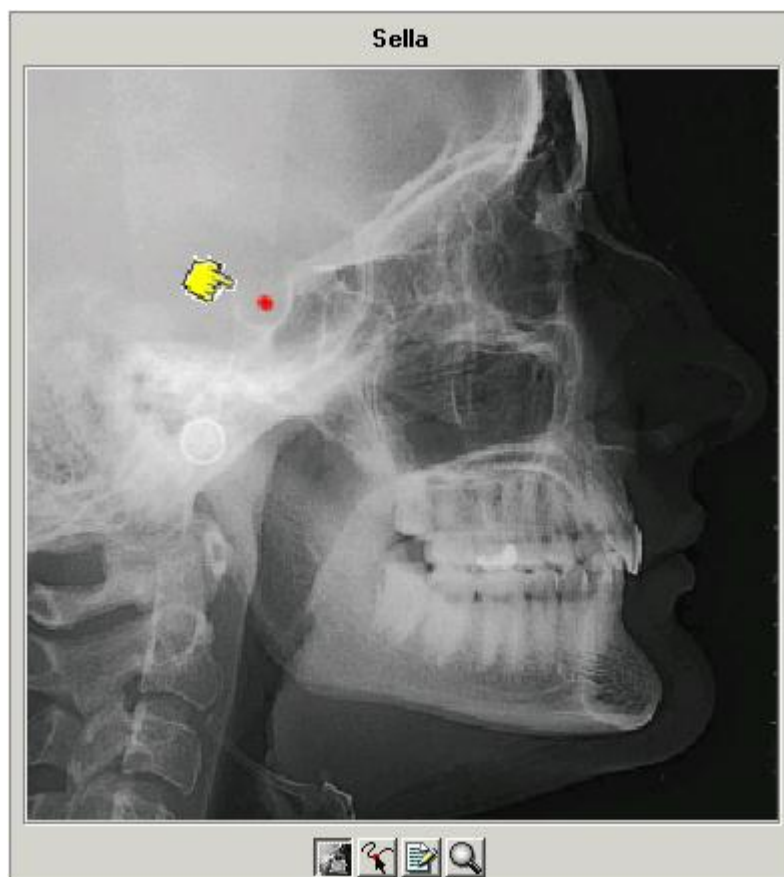
## 4.37 Tutor Window

### Tutor Window

The Tutor is a function specially made in D.F.O to help you set the landmarks.

The *Tutor Window* can be activated by clicking on the "Show Tutor" icon or in the view menu.

For each selected point in the "Tracing" tab the tutor will show you a Tutor image on which the selected landmark is pointed out.

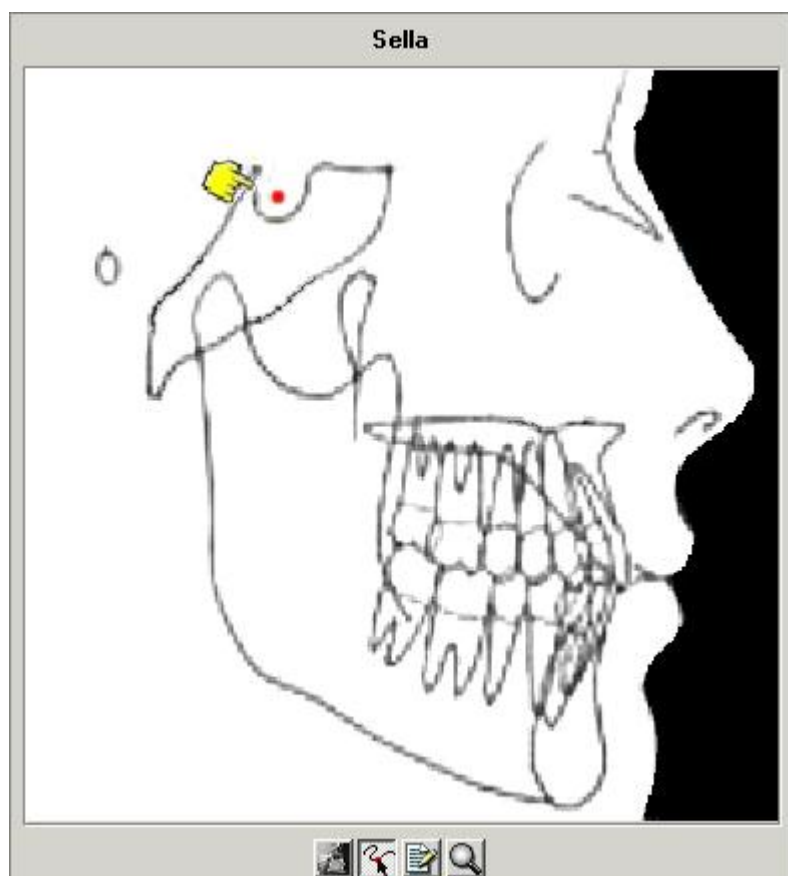


4 buttons are located at the bottom of the window.

1. *X-Ray*
2. *Drawing*
3. *Explanation*
4. *Zoom*

If the *X-Ray* button is selected, the tutor image will be an X-ray.

If the second button "*drawing*" is selected the tutor image will be a drawing.



If you require a more detailed image, you can combine the *X-Ray* or *Drawing* button with the *Zoom* button (4).



The *explanation* button (3) gives you a definition of each landmark.

See [LANDMARKS.doc](#)

## 4.38 Tool Bar

### Tool bar



**Brightness (Section 4.39)**

**Contrast (Section 4.40)**

**Pseudo-colors (Section 4.41)**

**Windowing (Section 4.42)**

## 4.39 Brightness

### Brightness



To modify the brightness of the activated image, click on the cursor with the left mouse button, hold it and move it, until you obtain the desired setting.

By clicking on the icon, the brightness will be reset automatically.

## 4.40 Contrast

### Contrast



To modify the contrast of the activated image, click on the cursor with the left mouse button, hold it and move it, until you obtain the desired setting.

By clicking on the icon, the contrast will be reset automatically.

## 4.41 Pseudo-colors

### Pseudo Colors



This function allows you to represent all of the grayscales of the active image, with a true color from the color pallet. *This function is often used to trace the soft tissue.*

To modify the pseudo colors of the activated image, click on the cursor with the left mouse button, hold it and move it, until you obtain the desired setting.

By clicking on the icon, the pseudo colors will be reset automatically.

## 4.42 Windowing

### Windowing



This function is one of the most powerful and widely used of the Mediadent package. It allows you to shrink (limit) the number of grayscales on your active display.



Perform following steps:



Point your mouse tip to the end of the window-bar.

- A double-pointing arrow will appear
- Press left mouse button
- Keep it pressed for two seconds, without moving it
- An hourglass will immediately appear, then it will turn into a pointer .
- You are now ready to move the boundary of the window-bar (Keep the left mouse button pressed down )
- The image will be adjusted in real time
- You can stop, when the desired result is reached, by simply releasing the left mouse button.

You can also move the selected grayscale-range along the window.

- Point your mouse tip to the gray part of the window
- A "hand" will appear
- By pressing your left mouse button, this part can be moved over the total length of the window.
- The image is reacting in real time.
- Stop, by releasing the mouse button.






You can combine windowing, with the contrast and brightness tools.

In all cases, the contrast and brightness tools will only be active within the gray portion of the window.

## 5 Identification

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