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SIDEXIS XG

Digital Radiography

Operator's Manual

English



The Dental Company

sirona.



This product bears the CE marking in accordance with the provisions of the Council Directive 93/42/EEC of June 14, 1993 concerning medical devices.

Contents

1	Introduction	9
1.1	Components of the overall SIDEXIS XG system ...	10
1.2	General notes on the use of SIDEXIS XG	12
1.3	SIDEXIS XG / What's new?	13
1.4	Conventions used in this manual	15
2	General notes on exposures	17
2.1	The digital radiography system	18
2.2	Intraoral exposures	19
2.3	Panoramic and Ceph X-rays	21
2.4	Exposure instructions for digital radiography	22
2.5	Video exposures	24
3	General hints for operation	27
3.1	Checking the system time before starting	28
3.2	Installing other SIDEXIS software components	29
3.3	Operation from the treatment center	30
3.4	Completing work on the system	31
3.5	Making backup copies	32
4	Operation	33
4.1	Starting SIDEXIS XG	34
4.2	Logging on (option)	35
4.3	The program window	36
4.4	Functional description and workflows	38
4.5	Working with exams	39
4.6	Workflow assistance	40
	One step forward	40
	One step back	40
	Continuing an interrupted workflow with the next step	41
	Repeating a step	41
4.7	Multi-workstation support for exams	42
4.8	Generating an order in a multi-workstation environment	43
4.9	Accepting an order in a multi-workstation environment	45
4.10	Change program	47

4.11	Information regarding SIDEXIS, Internet connection	48
4.12	Quitting SIDEXIS XG	49
5	Exam concept	51
5.1	Creating a new "Exam"	52
5.2	Opening a saved "Exam"	54
5.3	Saving an "Exam"	55
5.4	Printing an "Exam"	56
5.5	Exporting an "Exam"	57
	NGE format	57
	SVG format.....	57
	Working with an exported "Exam" in the Adobe® SVG Viewer	59
5.6	Importing an "Exam"	60
5.7	Deleting an "Exam"	62
5.8	Closing an "Exam"	63
5.9	Changing the form and the size of objects	64
5.10	Displaying and changing object properties	66
	Changing object properties	66
5.11	Removing objects from the workspace	67
5.12	Copying the active image to the Windows clipboard.....	68
5.13	Pasting images from the Windows clipboard.....	69
6	Patient management	71
6.1	Which dialog box is used to register a patient?	72
6.2	How do I use the patient selection dialog box?	73
	"Patient" selection list box	73
	"Exam" list box.....	74
	Templates.....	75
	Buttons	77
6.3	How can I create new patient data?	78
6.4	How can I modify patient data?	80
6.5	How can I delete patient data?	81
6.6	How can I check out a patient?.....	83
7	Image management	85
7.1	Storing	86
	Saving original images	86
	Saving image views.....	86
7.2	Opening images from the SIDEXIS database	88
	Elements of the dialog box	89
	Single selection	93
	Multiple selection.....	94

	Patient data discrepancies	94
	Procedure for relocated images	95
7.3	Image description and findings	96
7.4	Removing objects from an exam	100
7.5	Close image	101
7.6	Deleting images from the image database	102
7.7	Image code	103
7.8	Exporting image views	107
7.9	Importing an image	110
7.10	Printing images and diagnostic findings	112
7.11	Print preview	113
	Page setup for printing	114
7.12	Scanning images	116
7.13	Sending images via Internet as e-mail.....	117
7.14	Sending an image.....	119
8	Image acquisition	121
8.1	Safety information.....	122
8.2	Intraoral X-rays	123
8.3	Panoramic, Ceph and TSA X-ray exposures.....	128
8.4	Video exposure	131
	Starting a live video image (SIROCAM)	131
	Starting a live video image (extraoral full-face camera)	132
	Video stop (live video image ⇒ still image)	132
	Video start (still image ⇒ live video image)	132
	Taking the exposure (video still image ⇒ save)	132
	Canceling the exposure and closing the video image	133
	Overview	134
9	Analysis tools	137
9.1	Selecting objects in the workspace.....	138
9.2	Restoring the original image	139
10	Measurement tools	141
10.1	Measuring lengths	142
10.2	Correcting the results of a length measurement..	144
10.3	Measuring an angle	146
10.4	Measuring the bone density.....	148
10.5	Displaying the density profile	149
11	Display tools	151
11.1	Zooming the image	152
11.2	Panning.....	154

11.3	Viewport.....	155
11.4	Tile.....	157
11.5	Overview.....	158
11.6	Status arrangement	159
11.7	Cascade	160
11.8	Full Frame mode.....	161
11.9	Magnifier	162
11.10	Rotate	163
11.11	Jump to next image via hotkey	165
12	Image filters	167
12.1	Brightness and contrast adjustment	169
12.2	Mouse adjuster for setting brightness and contrast	171
12.3	Determining the region of interest for image filters	172
12.4	Brightness/contrast adjustment in the region of interest	174
12.5	Applying the brightness/contrast settings	175
12.6	Invert.....	176
12.7	Color	177
12.8	Contrast optimization	178
12.9	Smoothing	179
12.10	Sharpen Plus	180
12.11	Sharpen Plus variable.....	181
12.12	Filtering black dots.....	182
12.13	Noise reduction (Median).....	183
12.14	Relief display	184
12.15	Undoing the last filter operation	185
12.16	Torch functions	186
12.17	Transfer function.....	188
	Operational example	189
13	Drawing tools	193
13.1	Connecting arrows.....	194
13.2	Freehand lines	195
13.3	Lines	196
13.4	Text fields	197
13.5	Special drawing tool for orthodontics.....	198
13.6	Rectangle	199
13.7	Ellipse	200
14	Special functions	201

14.1	Special function – Always on top	202
14.2	Relocation of the image stock.....	203
14.3	Procedure for relocating the image stock	205
14.4	Opening relocated images.....	208
14.5	Constancy test.....	209
15	System setup	211
15.1	Exposure.....	213
15.2	Editing an exposure template	217
	The configuration workspace	218
	Creating a new exposure template.....	218
	Editing an existing exposure template.....	219
	Changing the exposure position in the exposure template window	220
	Changing the tooth registration	221
	Defining the sequence of exposure positions.....	221
15.3	Standard findings.....	222
15.4	Printout... ..	224
15.5	E-mail.....	225
15.6	Export... ..	227
15.7	Reminders... ..	228
15.8	Constancy test... ..	229
15.9	Relocate.....	230
15.10	Permanent dentist.....	231
15.11	Error message file.....	233
15.12	Service.....	234
16	Buttons and hotkeys	235
16.1	"Exam" toolbar	236
16.2	"Image" toolbar	239
16.3	"Edit" toolbar	241
16.4	"Analysis" toolbar	242
16.5	"View" toolbar	245
16.6	"Extras" toolbar	247
16.7	"Help" toolbar	248
17	Appendix – Backup copies	249
18	Appendix - Customizing the user interface and plugin administration	253
18.1	Commands	254
18.2	Toolbars.....	255
	Showing and hiding toolbars	256
18.3	Plugin Manager.....	257

18.4	Options	259
18.5	Access rights	262
	“User” configuration group box	263
	“Assigned roles” configuration group box	264
	“User” dialog box	265
	“Roles” dialog box	266
	“Properties role” dialog box	267
18.6	Personalization	268
19	Appendix – Troubleshooting	269
19.1	Error messages	270
	Messages and instructions	270
	Questions and warnings	270
	Error messages	270
19.2	List of error messages	272
19.3	Rescue program (SiRescue.exe)	277
20	Index	279

1 Introduction

Explanation

This manual provides instructions and information on the use of the SIDEXIS digital radiography and video system. It contains comprehensive instructions on how to use the software, as well as an introduction to the exposure technique and the possibilities of visualization and analysis of digital X-ray and video exposures.

Important note



Make sure that all national requirements are complied with when using SIDEXIS XG.

For example the German X-Ray Ordinance (RöV) (see section “Constancy test” on page 209).

Overview

This chapter provides the following information:	Page
Components of the overall SIDEXIS XG system	10
General notes on the use of SIDEXIS XG	12
SIDEXIS XG / What's new?	13
Conventions used in this manual	15

1.1 Components of the overall SIDEXIS XG system



Please refer to the pertinent manuals for a detailed description of the individual hardware components as well as of the entire system.

General components

- PC with built-in magneto-optical (**MO**) drive, monitor, mouse, keyboard, connection cables, pre-installed operating system software and manuals (such a PC is a prerequisite for the kit solution).
- SIDEXIS XG software (already pre-installed on the PC or supplied on CD-ROM) with manual
- Formatted and tested MO disks
See "Handling instructions for MO disks" on page 10 for handling.
- Unit passport

Intraoral X-ray components

- Wall-mounted X-ray box for image acquisition
- PC slide-in module for image acquisition
- USB X-ray box
- Two X-ray sensors:
Full Size and Universal, each with disk and hygiene protection sleeves
- Holder set from RINN

Panoramic and Ceph X-ray components

- The following panoramic X-ray units:
 - ORTHOPHOS Plus DS
 - ORTHOPHOS Plus DS Ceph
 - ORTHOPHOS 3 DS
 - ORTHOPHOS XG ^{Plus} DS
 - ORTHOPHOS XG ^{Plus} DS Ceph

Video components

- SIROCAM video camera with foot switch and hygienic protective covers
- Optional video camera for extraoral exposures (full-face camera)
- Video acquisition/frame grabber card including software (installed in PC)

Existing systems

You can also continue using the following components with existing systems:

- X-ray sensor with holders, disk and hygiene protection sleeves
- XIO intraoral X-ray image acquisition card (installed in the PC)
- Optional front-end sensor connection
- Optional adapter box with cable for multiroom X-ray operation
- XOP panoramic X-ray image acquisition card (installed in the PC)

Handling instructions for MO disks

Because of the sensitivity of the MO drive to dust, regular cleaning is recommended. The cleaning cycles depend on the environment. Cleaning disks for cleaning the optical lens are available in the computer trade. No further maintenance work is required on the PC.

Further MO disks can be obtained from your dental dealer. Using such MO disks is recommended since these are already formatted and tested and guarantee a high degree of data security. Furthermore, the user does not have to spend time preparing the disks and errors are avoided.

Alternatively MO disks can be obtained from the computer trade and formatted locally by the user. For details on formatting, please refer to the corresponding manuals of the hardware components used (MO drive and matching controller). Proper functioning and data security of such MO disks cannot be guaranteed by Sirona Dental Systems GmbH.

1.2 General notes on the use of SIDEXIS XG

Intended use

SIDEXIS XG is a software package for the personal computer (PC) which provides the working environment for generating, managing, archiving and analyzing digital X-ray and video exposures and enables the transmission of images via LAN/WAN and by e-mail.



SIDEXIS XG must not be used for implant planning!

The workspace displayed on the monitor makes use of the user-friendly MS Windows graphical interface. The dialog boxes have been designed according to ergonomic findings.

Some special ergonomic features of SIDEXIS XG

- Information
SIDEXIS XG keeps the user informed about the processes just running at any moment.
- Warning
Prior to important decisions, the user is advised about the consequences. This applies particularly in case of possible data loss.
- Error stability
Incorrect user input can be easily corrected or undone.
- Appropriateness
SIDEXIS has been designed especially for the management, visualization and analysis of digital X-ray and video exposures in the dental field.
- Operation
The program has been designed so that all commands and actions can be initiated both with the keyboard and the mouse. Thus it is possible to develop an individual method of working corresponding to the personal inclinations of the user and practical requirements.

These features enable even inexperienced users to gain easy access to this innovative method of working in the field of dental X-ray and video techniques.

1.3 SIDEXIS XG / What's new?

Previous history

Users of conventional, film-based X-ray systems mostly use self-adhesive labels or felt tip pens to highlight certain areas on X-ray images or to take down notes.

The images are manually positioned on the X-ray viewing box. Then, they are compared with other images, measured, superimposed with photos (orthodontics!) or put in an envelope and sent to a specialist.

New exam concept

SIDEXIS XG was provided with a new operating concept to transfer the working procedures used with conventional film exposures to the SIDEXIS XG user interface:

- The working and diagnosing processes of all exams are displayed together in the exam workspace.
It is called "Exam" and is opened, saved and managed in SIDEXIS XG.
- The user interface of the SIDEXIS XG software complies with the new SIRONA design.



Generally speaking, users who have already worked with older SIDEXIS versions may continue to work the way they are used to.

New functionality of the user interface

The following features allow users to configure the user interface according to their individual needs and requirements:

- The toolbars are no longer rigidly fixed. The toolbars are now thematically grouped (e.g. Filter, View,.....) and can be freely rearranged or moved within the exam workspace.
- The tools included in the toolbars can be freely selected in a configuration dialog box.
The user may also generate new toolbars and add the desired tools.
- The menu bars can be configured in the configuration dialog box.

New diagnostic capabilities

- With the following functions, it is possible to perform several measurements on each image, which may then be freely moved and scaled:
 - Length measurement
 - Angle measurement
 - Density measurement
- Exposures and diagnostic findings are displayed as overlay objects within the exam workspace.
These overlay objects are freely movable and scalable.
- Connecting arrows can be used to refer from a diagnostic finding to a position in an exposure.
Even if the diagnostic finding or exposure is moved, the connection is preserved.

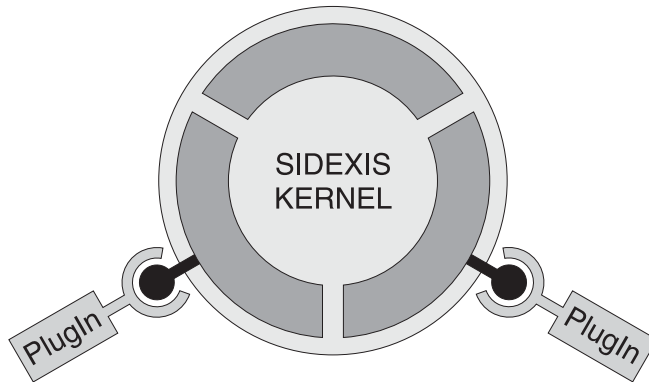
1 Introduction

What is an overlay object?

An overlay object is a visible object within the workspace.

“Direct Dental” – the future plug-in concept



A documented plug-in interface allows for easy integration of additional functionalities (e.g. image filters) into existing SIDEXIS installations.



1.4 Conventions used in this manual

Conventions

Table 1: The following typographic conventions are used throughout this manual:

Format	Use
<i>italics</i>	Commands of the menu bar and the context menu referred to
“Quotation marks”	The designations for icons, windows, dialog boxes, buttons and options are written in inverted commas.
[Key]	Keys are identified by square brackets []
[Key1]+[Key2]	A plus sign (+) between two keys means that both keys must be pressed simultaneously.
[Key1], [Key2]	A comma (,) between two keys means that you must press these keys one after another. Example: “Press [Alt], [F] key” means that you first press and release the [Alt] key and then press and release the [F] key.
	Precedes an instruction which must be strictly observed.
	The following hint can simplify working with the system.

2 General notes on exposures

Explanation

This chapter contains a few notes on handling the SIDEXIS digital radiography and video system.

The changes compared with the conventional, film-based X-ray exposure technique and the basics of using the SIROCAM intraoral video camera as well as the video camera for extraoral exposures are discussed in particular detail.



You should read this chapter carefully before performing any exposures on a patient.



Detailed instructions on the operation of the devices used can be found in the corresponding manuals. An exact description of the exposure procedure is provided in the chapter "Image acquisition" on page 121.

Important note!



Do not switch off the PC during an exposure! Do not use the key combination [Ctrl]+[Alt]+[Del] (restart of Windows!) during readiness for exposure.

Overview

This chapter provides the following information:	Page
The digital radiography system	18
Intraoral exposures	19
Panoramic and Ceph X-rays	21
Exposure instructions for digital radiography	22
Video exposures	24

2.1 The digital radiography system

Handling

Handling of the digital radiography system differs from conventional X-ray systems only by the use of a PC and the X-ray sensor. X-rays are produced in the same way as with conventional methods.

Difference

Instead of the previously used X-ray film, an electronic, radiosensitive sensor element which converts the incident radiation into electrical signals is placed against the patient's tooth or in the panoramic X-ray unit. A PC connected with the sensor immediately generates the desired X-ray image from these signals.

Advantages

The entire developing process necessary after the exposure of conventional X-ray films is no longer required when using this method.

This rules out possible negative influences on image quality such as:

- Type and age of the developing chemicals
- Temperature of the developer bath
- Duration of the dwell times in the developing process, etc.

2.2 Intraoral exposures

Important note!



Please avoid simultaneous contact with the monitor, PC or printer and the patient while the X-ray sensor is in the patient's mouth!

Design of the intraoral X-ray sensor

The intraoral X-ray sensor is hermetically sealed in a plastic housing and also electronically isolated from the system connected to the power supply. Thus any hazards for the patient and the operating staff are excluded.

Handling of the intraoral sensor

The intraoral sensor is basically positioned in the same way as the X-ray film used previously. Depending on the size of the tooth or position of the area to be exposed, place the sensor vertically or horizontally in the patient's mouth. As before, the patient can immobilize the sensor by holding it himself or herself. Since the dimensions and thus also the active X-ray exposure area have become smaller in comparison with the X-ray film, it is recommended to focus the X-ray beam onto the relevant region of interest as accurately as possible.



Handling problems



Partial, incomplete illumination of the X-ray sensor due to insufficient focusing may lead to exposure errors.

The display quality can be further impaired by distortions of the image projection if the sensor is positioned at an oblique angle to the projection surface. Positioning the sensor parallel to the longitudinal axis of the tooth to be imaged as well as perpendicular incidence of the central X-ray beam onto the active area of the sensor leads to optimum exposure quality.

2 General notes on exposures

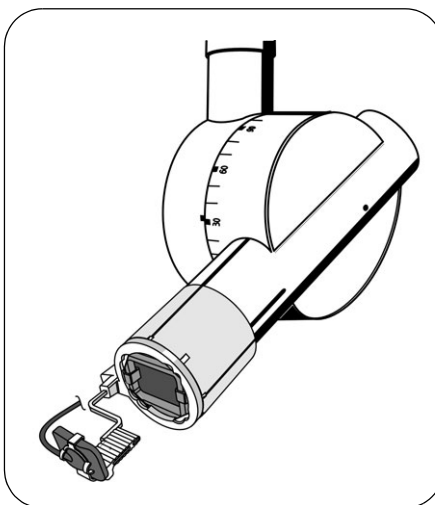
Handling recommendations



In order to create optimum exposure conditions, use of the supplied sensor holder systems for right-angle technique is recommended.

For the accurate perpendicular alignment of the sensor to the central X-ray beam and for safe immobilization during the exposure, the holder systems designed for this purpose should be used. This guarantees complete exposure of the active sensor area.

Special holders, the use of which is described in detail in the corresponding Operating Instructions, are used in the system.



Use of the diaphragm

In contrast to the standard circular, conically diverging ray beam, use of a diaphragm in the radiation cone leads to a rectangular radiation area adapted to the size of the sensor. Use of the diaphragm therefore reduces the exposed area and brings about a considerable reduction in patient dose.

2.3 Panoramic and Ceph X-rays

Function	With digital panoramic and Ceph X-rays, too, a sensor assumes the role of the film cassette used for conventional X-rays. A sensor is therefore installed in the ORTHOPHOS in place of a film cassette.
Differences	Unlike the ORTHOPHOS DS, the ORTHOPHOS Plus DS Ceph is equipped with an X-ray sensor which can be used for panoramic tomographic exposures as well as cephalometric X-rays. The sensor therefore has a plug-in design and can be attached either in the slot provided for it on the ring or in the Ceph arm on the ORTHOPHOS depending on the type of exposure required.
Exposure sequence	The exposure routine does not differ from that of conventional X-rays. The patient is positioned as usual. All unit settings are made on the multimer.
Safety	As ORTHOPHOS and PC are connected to each other, radiation cannot be released for safety reasons until the PC is ready for exposure. The exposure is then started as usual on the multimer. The resulting image is available for interpretation on the PC shortly after the exposure.

2.4 Exposure instructions for digital radiography

Advantages of digital radiography

With the digital radiography system integrated in SIDEXIS, overexposure or underexposure in the conventional sense is nearly impossible. In SIDEXIS XG, the image generating and processing system facilitates automatic optimization of the image display.

Effect of the radiation dose

The radiation dose nevertheless influences image quality in digital radiography. This influence is reflected in the fact that an exposure which is produced with a lower dose also shows a smaller difference between the usable signal (i.e., the radiation) and potential external interferences (designated as noise in the following) in the image information gained. This noise also exists with conventional X-rays, but is only a secondary problem because of the higher radiation dose. If the radiation dose is reduced to 1/5 in comparison to conventional X-rays, the relative interference (i.e., the ratio of noise to usable radiation) correspondingly increases by 5 times.

Basically, external interference is the more noticeable the lower the selected radiation dose. In the digital image, the influence of the radiation dose is recognized by the impression of sharpness that the image provides.



An image which is exposed with a very low dose makes a noisy impression.



If an X-ray exposure is made with too high radiation dose, a sudden overmodulation of the sensor can occur. This is reflected by dark areas in the image which 'run' in the image like a black ink blot.

Overmodulation can occur only on those areas of the sensor which were subject to too low absorption and significantly excessive radiation dose.



In contrast to noisy images, it is not possible to compensate for overmodulation during subsequent image processing.



In practice this means that: The radiation dose should be selected according to the desired image quality. At the same time, the principle of the lowest possible radiation exposure of the patient should be observed when the radiation dose is selected. The digital system supports the use of low radiation doses by optimizing and post-processing the images acquired.



Exposure times of more than 320 ms in intraoral exposures are not supported by the system. With longer exposure times, only the first 320 ms are used for image generation. The radiation received after this is ignored by the system and can lead to poor image quality.

The image is represented in a digital radiography system as a series of grayscale values. These grayscale values are compensated by SIDEXIS with optimum brightness and contrast display. With varying X-ray dose, the image impression therefore hardly changes at all with regard to brightness and contrast. The automatic display optimization affects only the grayscale information of the produced image; the resolution of the intraoral X-ray sensor remains unaffected by this.

Recommendations for intraoral X-ray units

When intraoral X-ray units equipped with multitimer control are used, the film density setting should be reduced by approx. five steps compared with the conventional exposure technique. Nevertheless, the exact presetting must be in accordance with the planned objectives and should therefore be determined individually.

2.5 Video exposures

Differences to X-rays

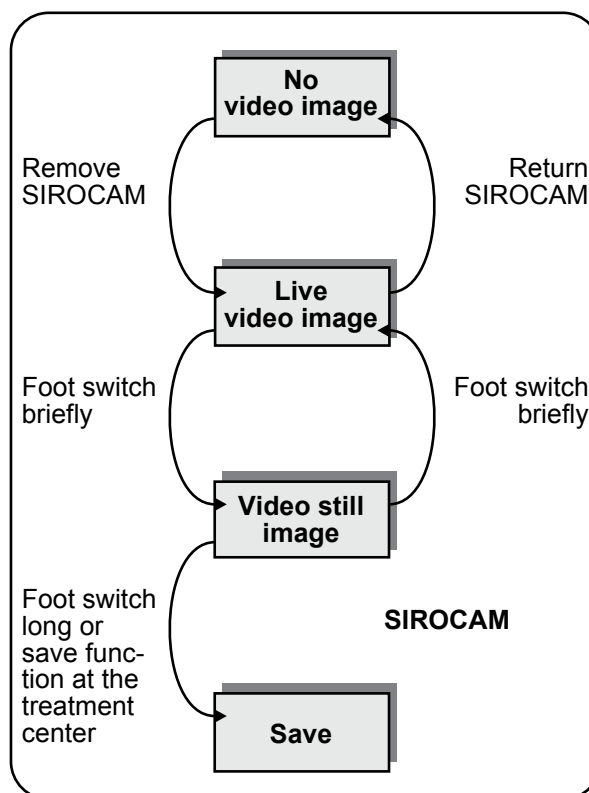
In contrast to digital radiography where only one momentary image can be displayed, a variety of different image states exist for video exposures:

- Live video image
This type of image always shows the area currently being covered by the camera.
- Video still image
A video still image is a live video image halted for a short period of time. This type of still image cannot be processed or saved. Unlike the video exposure described below, it can, however, offer a somewhat higher image quality.
- Video exposure
This is an X-ray exposure in video form. Such a video exposure is obtained by digitization of the live image or the still image. It can be modified using different image processing functions and permanently saved in the system.

Operation

Taking a SIROCAM video exposure is very easy.

1. After removing the camera from its holder, you can already see the live video image.
2. You can freeze this moving image to a still image by means of the foot switch.
At this stage, you can return to live image mode by briefly actuating the foot switch once again. The still image is then discarded.
3. By actuating the foot switch for some time, the still image is digitized and saved to produce a video exposure.
4. The video exposure mode is terminated by returning the camera to its holder.



For a detailed description of how to work with the SIROCAM and the extraoral video camera, refer to the chapter “Image acquisition” and the section “Video exposure” on page 131.

3

General hints for operation

Overview

This chapter provides the following information:	Page
Checking the system time before starting	28
Installing other SIDEXIS software components	29
Operation from the treatment center	30
Completing work on the system	31
Making backup copies	32

3 General hints for operation

3.1 Checking the system time before starting

Why is it necessary to check the system time?

SIDEXIS saves the creation time for each image. For this reason, the date and time setting of the system clock integrated in the PC must occasionally be checked and, if necessary, corrected.



If the system clock is improperly set, the time of creation saved for new images will also be incorrect. This would then result in incorrect documentation and make it difficult to retrieve these images.

Where do I find the system time?

On the Windows desktop, the system time is displayed in the systray, which is usually located at the bottom right corner of the screen. The date is displayed when pointing with the mouse cursor to the time.

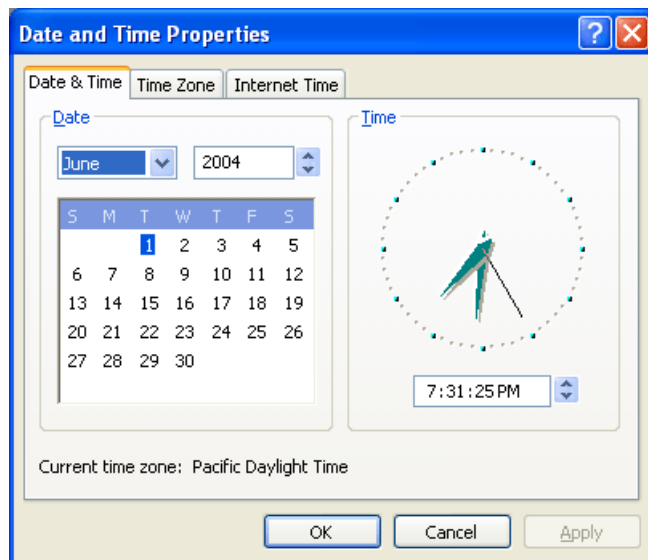
How can I change the system time?

The current time setting can be changed in a dialog box which opens when you double-click the time display. The date is set on the left half of the "Date & Time" tab.

- The month and year settings are selected using drop-down lists, which unfold when you click the arrows next to them.
- The day of the month can be selected by clicking the corresponding day on the calendar sheet.
- The time setting is changed by clicking the value to be set (hours, minutes or seconds) and then using the corresponding spin buttons.

Alternatively, the desired value can also be entered directly using the keyboard.

- Finally, the dialog box is closed by clicking "OK".



3.2 Installing other SIDEXIS software components

Explanation

It sometimes becomes necessary to install additional or extended software components on the PC.



*Later installation of the X-ray control book or SIMO-CON etc. from the **CD-ROM**.*

Example

For instance, this is the case when installing a new X-ray sensor or a service disk. In such cases, you must insert the **disk** included in delivery in the floppy disk drive. Then start the installation of the software by clicking the “start” button on the task bar.

3.3 Operation from the treatment center

Explanation

Many SIDEXIS functions may be activated directly from the SIRONA treatment center using SIVISION 3.

The controls available on the treatment center are used for this purpose.

Please refer to the operating instructions of the respective treatment center. Controls can be freely assigned to SIDEXIS functions. More details can be found in the "PC Software for SIVISION 1/2/3" Operator's Manual (REF 59 11 719).

3.4 Completing work on the system

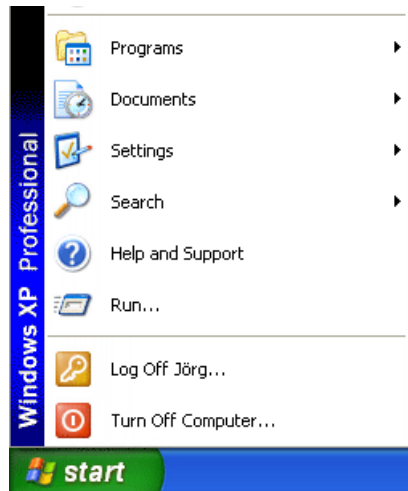
Explanation



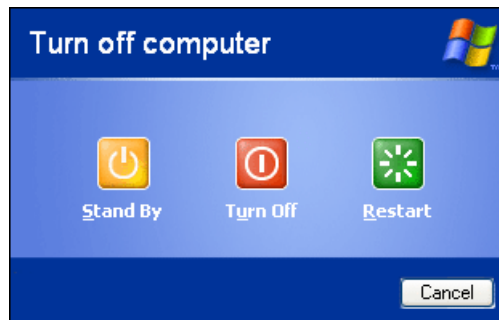
The operating system must always be shut down properly to prevent data loss.

Example – Windows XP

1. Open the start menu using the “start” button.



2. Select the item “Turn Off Computer...”.
3. Select the option “Turn Off” in the dialog box which opens.



Unsaved data is automatically saved.

Depending on the type of computer, either a message is displayed after some time prompting you to turn off your PC (i.e., you can turn off the PC then) or the computer shuts down automatically.

3.5 Making backup copies

Why make backup copies?

To prevent a possible loss of data following a system failure, image and patient data should occasionally be backed up from the integrated PC hard disk to removable storage media (e.g. MO disks). This procedure thus provides users with a backup copy that they can recur to in case the original data is lost.

What is a backup?

Such a copy is generally referred to as backup copy.

Please refer to chapter “Appendix – Backup copies” on page 249 for further information on making backups.

Which types of backup are available?

The backup strategy used in SIDEXIS XG offers two different types of backup, which can be started by clicking the corresponding icon:

- A total backup copies all of the backup-relevant data found on the hard disk (i.e., the complete patient and image databases and all SIDEXIS XG program files).
- A differential backup copies only relevant data which has been changed since the last total backup (e.g. new exposures and patient data changes).

This means that only a total and a differential backup together truly reflect the entire current data stock. This fact should always be taken into consideration when managing the storage media used for backup.

When can I delete a backup?

As a rule, it is sufficient to save only the last or the last two backup cycles. Hence, older backups on removable storage media can be deleted to make room for new backups.



4 Operation

Overview

This chapter provides the following information:	Page
Starting SIDEXIS XG	34
Logging on (option)	35
The program window	36
Working with exams	39
Workflow assistance	40
Multi-workstation support for exams	42
Generating an order in a multi-workstation environment	43
Accepting an order in a multi-workstation environment	45
Change program	47
Information regarding SIDEXIS, Internet connection	48
Quitting SIDEXIS XG	49

4.1 Starting SIDEXIS XG

Activating the function

Activation options	
Activation by double-clicking the program icon	 SIDEXIS
Activation via the “start” button, by clicking the program icon. This button is usually located at the bottom left corner of the screen. Depending on the operating system and setting, the display may vary.	 SIDEXIS

After the start

A splash screen appears after program start. This screen disappears automatically after a couple of seconds.

4.2 Logging on (option)

Explanation

If the access rights have been restricted, the “Login” dialog box appears after the splash screen. The user must enter his or her user name and password here.

Configuration

The configuration is described in section “Access rights” on page 262.

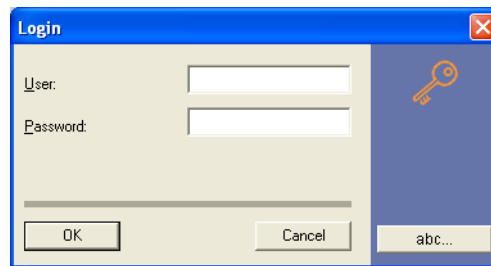
Password input

1. Enter your user name in the “User” text box.
2. Enter your password in the “Password” text box.
3. Confirm your input with the “OK” button.



When you create a new user and activate the password request function for him or her, this user does not have a password yet. When the new user logs on the next time and enters his or her user name and confirms with “OK”, another dialog box for assigning a new password appears once.

Example dialog box



User switching

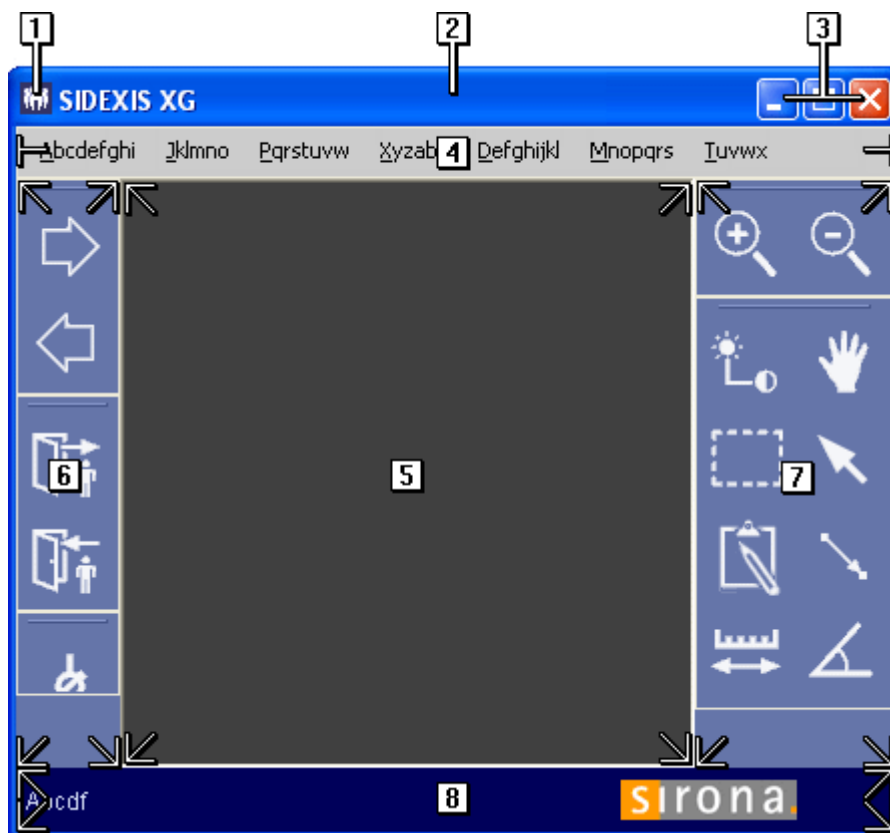
While SIDEXIS XG is running, you can switch between users by pressing the [Ctrl]+[Shift]+U key combination.

The “Login” dialog box opens.

Simultaneously all images and exams are closed and the registered patient is deregistered.

4.3 The program window

After SIDEXIS XG is started, the program window with the specific program components appears:



1. System menu of the program window (see documentation of the operating system)
2. Title bar with selected patient data (See section "Options" on page 259.)
3. Buttons for controlling the window size (see documentation of the operating system)
4. Menu bar
5. Workspace
6. Area for management toolbars
7. Area for image processing toolbars
8. Status bar

Workspace

The working and diagnosing processes of all exams are displayed together in the exam workspace.

It is called "Exam" and is opened, saved and managed in SIDEXIS XG.

Area for management toolbars	The area on the left margin of the program window shows various sorted toolbars with management tools
Area for image processing toolbars	The area on the right margin of the program window shows various sorted toolbars with image processing tools
Toolbars	<p>The toolbars consist of buttons which contain graphical symbols (icons).</p> <p>The buttons can be compared to the keys on the multitimer of the X-ray unit. A system function can be launched by clicking one of these buttons.</p> <p>Logically related functions are always grouped in one toolbar.</p>
Status bar	<p>The status bar displays information about the currently active function.</p> <p>For example, the angle during an angle measurement.</p>

4.4 Functional description and workflows

Explanation

The functions and workflows of “SIDEXIS XG” are described in several chapters of the manual.

Subdivision

The functional description is divided into the following sections:	Page
Patient management	71
Image management	85
Analysis tools	137
- Measurement tools	141
- Display tools	151
- Image filters	167
Special functions	201
- System setup	211

Workflows

The following workflows are briefly explained here:

- Taking a new exposure
- Opening a saved exposure
- Opening a saved exam

Taking a new exposure

1. Register the desired patient.
2. Select the desired type of exposure.
3. Release an exposure.
4. Interpret the exposure.

Opening a saved exposure

1. Register the desired patient.
2. In the “Exam” window, select the option “Existing”.

There are two ways to open exposures.

- New

All images assigned to the patient can be opened via the image selection dialog box.

Opening a saved exam

3. Register the desired patient.
4. In the “Exam” window, select the option “Existing”.

All saved exams are displayed.

5. Select the desired exam.

4.5 Working with exams

Explanation

Users of conventional, film-based X-ray systems mostly use self-adhesive labels or felt tip pens to highlight certain areas on X-ray images or to take down notes.

The images are manually positioned on the X-ray viewing box. Then, they are compared with other images, measured, superimposed with photos (orthodontics!) or put in an envelope and sent to a specialist.

The working procedures applying to conventional film exposures were transferred to the SIDEXIS XG user interface.

The working and diagnosing processes of all exams are displayed together in the exam workspace.

It is called “Exam” and is opened, saved and managed in SIDEXIS XG.

The SIDEXIS XG software is used in the context of an “Exam”.

Each image processing operation **can** be saved as an “Exam”.

“Processing” also describes the act of merely opening exposures which are saved in the image database.

Newly generated exposures are automatically included in the image database.

Diagnostic findings are linked to the exposures in the image database and are also saved there.

When an “Exam” is saved, only the objects and/or their references (exposures), which are displayed on the exam workspace, are saved in a database of their own.

Such an “Exam” can also be printed out and exported.

The first step when starting an “Exam” is to register a patient.

The lower half of the patient selection dialog box already provides a number of selection options for opening an “Exam”.

If a patient is already registered, a specific dialog box for selecting an “Exam” is displayed.

Function

See chapter “Exam concept” on page 51.

4.6 Workflow assistance

Explanation

Predefined linear workflows are provided as exam templates in SIDEXIS XG.

These workflows are divided into logical steps.


SIDEXIS XG provides Navigation functions within those workflows.

Navigation functions

- One step forward
- One step back
- Continuing an interrupted workflow with the next step
- Repeating a step

4.6.1 One step forward

Activating the function


Activation options	
Activation by clicking the button	
Activation via hotkey	1. [Enter]
Activation via the menu bar	1. [E]xam 2. W[o]rksteps 3. [N]ext

Example

When SIDEXIS XG has been started, the *Register patient* function can be activated immediately by pressing the [Enter] key. After the patient has been selected and the [Enter] key has been pressed again, the *Select image* function is started.

4.6.2 One step back

Activating the function


Activation options	
Activation by clicking the button	
Activation via hotkey	4. [Esc]
Activation via the menu bar	1. [E]xam 2. W[o]rksteps 3. [B]ack

Example

Pressing the [Esc] key repeatedly first closes any images available one after the other and then finally checks out the registered patient. Pressing the key once again terminates SIDEXIS XG.


4.6.3 Continuing an interrupted workflow with the next step

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. W[o]rksteps 3. [C]ontinue

4.6.4 Repeating a step

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. W[o]rksteps 3. [R]epeat

4.7 Multi-workstation support for exams

Explanation

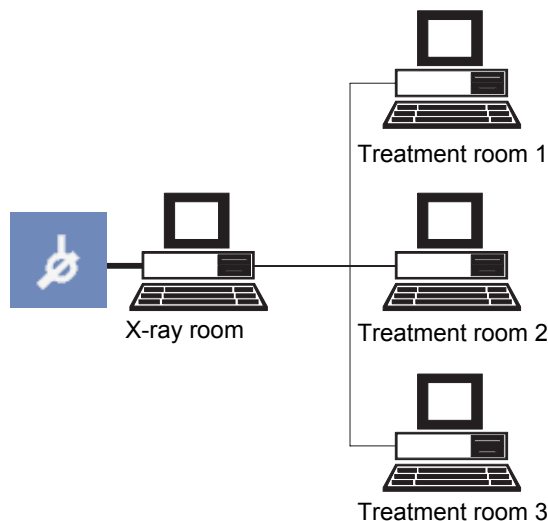
The following services are intended especially for use in a multi-workstation installation. The SIDEXIS system can be operated in a multi-workstation environment, but can also be used without restriction in a single-workstation installation.

In a multi-workstation installation, several units are connected with one another by a cable. Such an interconnection of several workstations is called a network. All connected units can then access the same database (i.e., patient and image data).

Multistation functions

Multi-workstation functions:	Page
Generating an order in a multi-workstation environment	43
Accepting an order in a multi-workstation environment	45

Example



An example of a SIDEXIS multi-workstation installation is a network of several dental treatment rooms, each with a SIDEXIS workstation, and a central X-ray room with an X-ray PC.

Each workstation can issue X-ray orders, which are accepted and executed by the SIDEXIS station in the X-ray room. The exposures are then available at the X-ray PC as well as at every workstation for subsequent diagnostics. The SIDEXIS workstations in the treatment rooms do not support X-ray image acquisition and are therefore also referred to as viewing stations.

4.8 Generating an order in a multi-workstation environment

Explanation

In a SIDEXIS multi-workstation installation, each workstation may produce X-ray orders, which are then accepted and executed by the stations having the required equipment (X-ray unit or SIROCAM).



To enable processing of the new order at another station, the respective patient must be checked out at the station that has produced the order.

Validity


This function can be used for X-ray and video images.

The relevant patient must be registered.

If several orders are to be generated for a single patient, this function can be used repeatedly until all orders are generated.

After the orders have been accepted and the X-rays have been taken in the X-ray room, these are then available at every SIDEXIS workstation.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. W[o]rksteps 3. Produce [o]rder

Order specifications

After activating the function, you can enter the information required for the order in a dialog box:

Specifying the patient's sex

The patient's sex is specified in the "Sex:" dialog box area.

Click the desired option button to do so.

- For male persons, click the "Male" option button.
- For female persons, click the "Female" option button.

If the patient is pregnant, select the "Existing pregnancy" check box (only relevant for X-rays).

Reason for image acquisition and/or notes

The reasons for image acquisition and/or further remarks are specified in the "Reason/notes" text box.



When entering the reason for the exposure or additional remarks, you may select prefabricated phrases via a context menu which opens after right-clicking or pressing the [ALT]+[T] key combination, similar to the procedure used in image description / findings. You can combine several of these texts by repeating this step.

The [Esc] key closes the context menu without further actions. Chapter "System setup", section "Standard findings..." on page 222 describes how the texts can be configured individually.

Specifying the image type

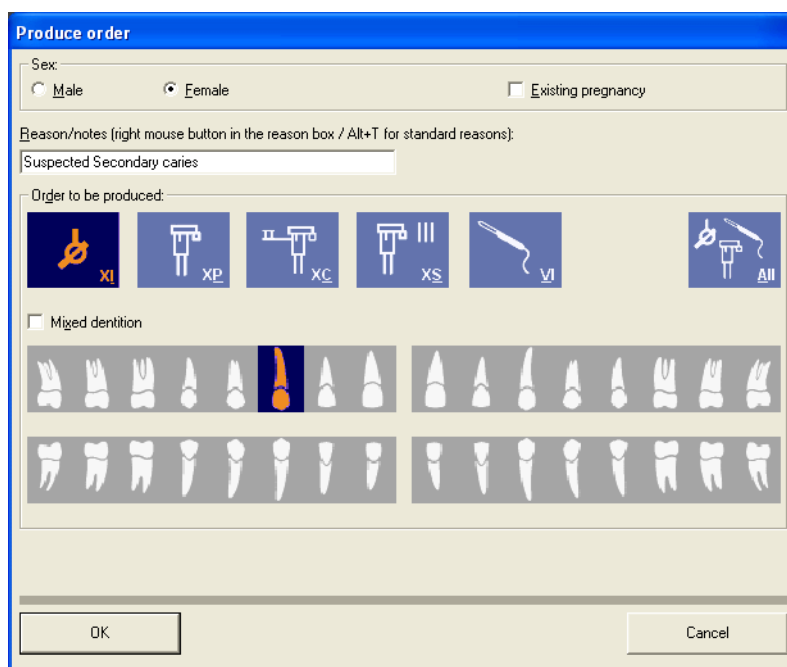
The image type is specified in the "Order to be produced" dialog box area.

The following image types are available:

- Intraoral X-ray exposures
- Panoramic X-ray exposures
- Cephalometric X-ray exposures
- Transversal slices
- Video exposures

You specify the desired image type as usual by clicking the corresponding buttons in the lower half of the dialog box.

Example screenshot



4.9 Accepting an order in a multi-workstation environment

Explanation

The program jumps automatically to the “Register patient” dialog box if this has not yet occurred during activation. If possible, the patient for whom orders are pending is already pre-selected in the patient registration dialog box.


Validity

This function can be used for X-ray and video images.



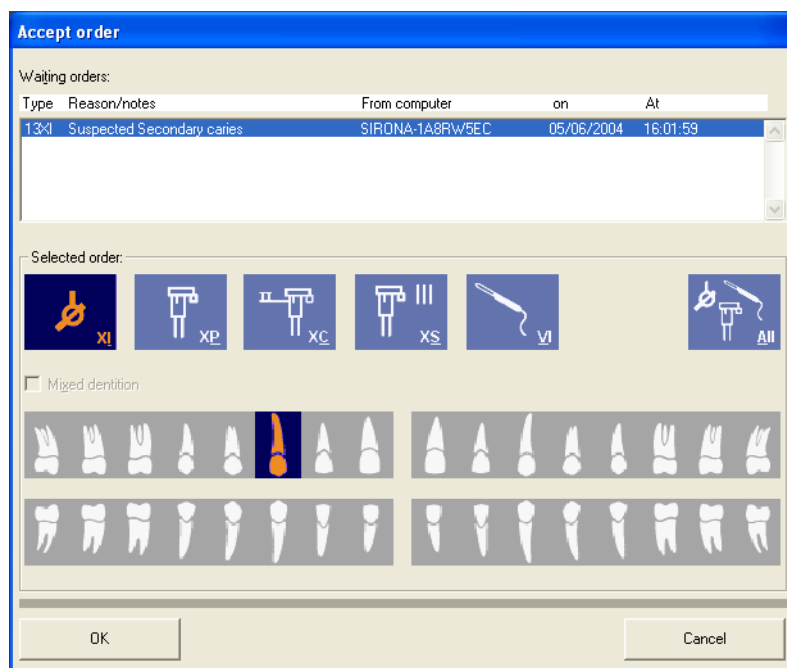
The SIDEXIS station with the required equipment cannot accept and execute existing X-ray and video orders for a certain patient until the patient concerned has been registered there, as usual.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. W[o]rksteps 3. [A]ccept order

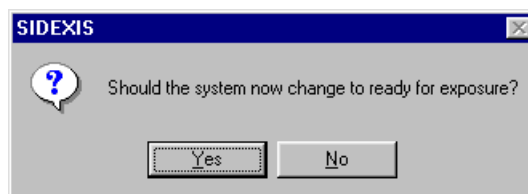
Operation

A list of pending orders for the registered patient then appears in the following dialog box:



In addition to the type of image, reason or indication, date and time of generation, the name of the workstation that has produced the order is also displayed. This simplifies possible queries. The buttons for selecting the image type and tooth are unavailable here – they only indicate the desired image type.

After the dialog box is confirmed, the marked order is removed from the list of orders. With intraoral X-rays, it is then possible to automatically change to readiness for exposure and to take the exposure.



Video exposures are started in the usual way by removing the camera from its holder. To make the system ready for panoramic and Ceph X-rays, proceed as usual.



An order is also removed from the list of orders if no exposure is taken after the dialog box has been confirmed.

Orders which are not processed are considered obsolete after some time and automatically removed from the list.


The data entered on producing the order are taken over as far as possible in its execution and used as a basis for the image description of new exposures.

4.10 Change program

Explanation

If desired, the service engineer who installs and configures the system can configure an automatic program switchover. This can be used e.g. for quickly switching from SIDEXIS to a practice management program or any other software installed on the same PC.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. Change [p]rogram

Function

- If only a single program change is configured, then the desired program appears on the screen immediately after you launch the command.
- If several programs are interfaced to SIDEXIS in this way, then you make the required choice in a dialog box.




If an error occurs when you try to start the selected program, a message appears. You must then check that the target program is correctly installed and access to it has been correctly configured.

4.11 Information regarding SIDEXIS, Internet connection

Explanation

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [H]elp2. [A]bout

Function

The dialog box which opens displays information about the version number and the disk space available for images.



You should check the available disk space occasionally and relocate older images in due course. Detailed information on relocation is provided in the section "Relocation of the image stock" on page 203.

You can send an e-mail to the SIRONA hotline using the "Mail to:..." button on the left side.

The button on the right side starts the Internet browser installed on your system and connects you to the Homepage of Sirona.

The "Info" button in the center creates a text file with system data for service purposes. This text file can be saved, printed and further processed.

"Info" button

The text file contains the following information:



- Operating system used
- Name of the computer
- User who is currently logged on
- Name of the database
- Database path with information on the available disk space
- Information about the SLIDA interface
- Information about the connected digital X-ray components

4.12 Quitting SİDEXIS XG

Explanation

When you quit SİDEXIS, all open image windows as well as the patient file are automatically closed.

Activating the function

Activation options	
Activation by clicking the button	
Activation by clicking the button in the title bar	
Activation via hotkey	[Alt]+[F4]
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. [E]xit



A confirmation prompt appears before the program is terminated.

5 Exam concept

Explanation

This chapter explains how to work with the exam concept of SIDEXIS XG and with objects in the workspace.

Overview

Explanations on the exam concept	Page
Creating a new “Exam”	52
Opening a saved “Exam”	54
Saving an “Exam”	55
Printing an “Exam”	56
Exporting an “Exam”	57
Importing an “Exam”	60
Deleting an “Exam”	62
Closing an “Exam”	63
Changing the form and the size of objects	64
Displaying and changing object properties	66
Changing object properties	66
Removing objects from the workspace	67
Copying the active image to the Windows clipboard	68
Pasting images from the Windows clipboard	69


5.1 Creating a new “Exam”

Explanation

This function is used to generate a new “Exam”.

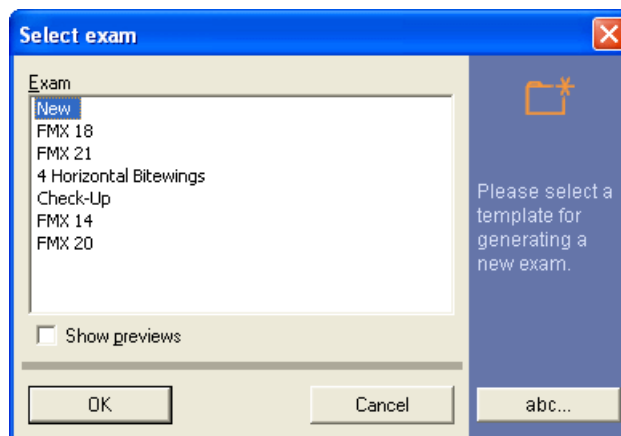
If no patient is registered yet, the patient selection dialog box opens. See section “How do I use the patient selection dialog box?” on page 73.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+N
Activation via the menu bar	1. [E]xam 2. [N]ew...

A selection dialog box appears.

Selection dialog box



All templates saved for an “exam” are displayed in the selection dialog box.

Function

The “New” template appears in the first line.

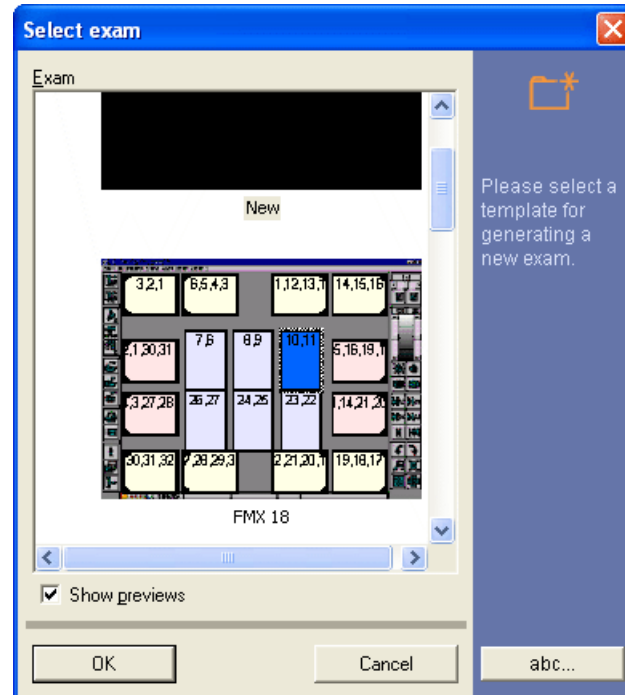
This template consists of an empty workspace.



It is recommended to select this template for daily routine operation if you do not want to use a saved template.

The “Show previews” check box can be used to display the templates graphically.

“Show previews” check box




5.2 Opening a saved “Exam”

Explanation

This function is used to open a saved “Exam”.

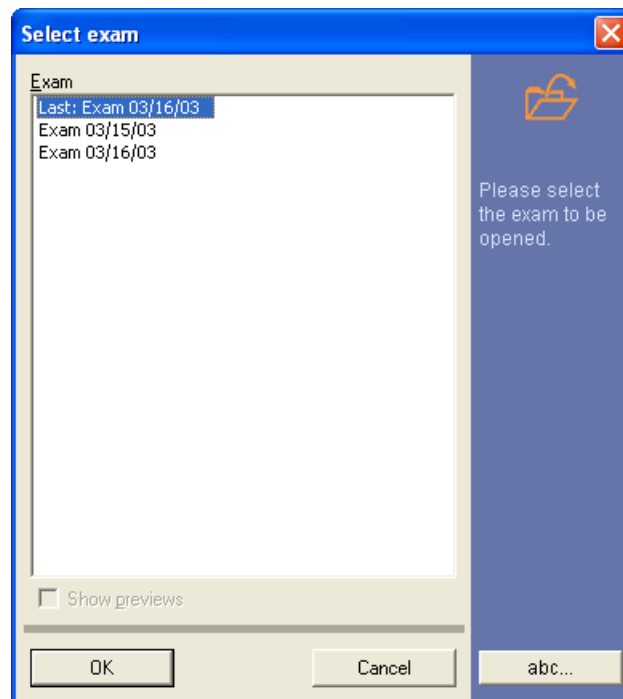
If no patient is registered yet, the patient selection dialog box opens. See section “How do I use the patient selection dialog box?” on page 73.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+O
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. C[h]oose

A selection dialog box appears.

Selection dialog box



Function

The selection dialog box contains all saved exams of the corresponding patient.

The exams are sorted chronologically in the order in which they were created.

In addition, the last saved exam is displayed in the first line.

5.3 Saving an “Exam”


Explanation

All objects of the workspace can be saved as an “Exam”.



Use the “Save as” function if you want to save a current “Exam” loaded before from the exam database without overwriting the original data.

Activating the function


Activation options	
Activation by clicking the button	
Activation via hotkey	[Shift]+[F12]
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. [S]ave

The Save as dialog box appears.

“Save as” function

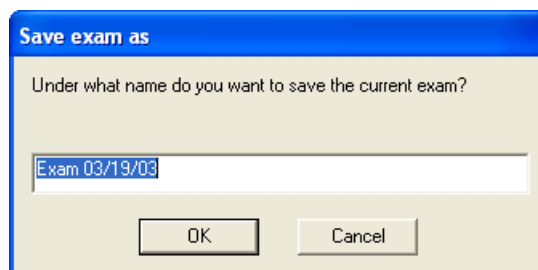
Use the “Save as” function if you want to save a current “Exam” loaded before from the exam database without overwriting the original data.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[F12]
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. Save [a]s...

The Save as dialog box appears.

Save as dialog box



SIDEXIS XG suggests a name for the “Exam”. This suggestion can be modified.

Use the “OK” button to save the “Exam”.

5.4 Printing an “Exam”

Explanation

When the “Exam” is printed, all of the objects in the workspace are printed on one page.


There are two ways to print an exam.

- Printout via the function described below.
- Printout via the print preview (see section "Print preview" on page 113).



Select the printer and the page view prior to the printout. (See "Setting up the printer".).

Activating the function


Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. [P]rint...

The print dialog box of the operating system appears.

Function

The print dialog box of the operating system is used to print out the “Exam”.

Setting up the printer

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. P[r]int Set[u]p...

The print setup dialog box of the operating system appears.



It is advisable to set the page orientation to the landscape format when printing an exam.

This ensures that the paper size will be optimally utilized.

5.5 Exporting an “Exam”

Explanation

You can export the current exam using the “Exam export” function.

Exporting an “Exam” means that all objects in the exam workspace are exported.

The patient's first name, last name and date of birth are also exported.

Exports can be performed in two different formats:


■ NGE format

The NGE format can be exported from and imported to SIDEXIS XG in version 1.5 and higher. See section “NGE format” on page 57.

■ SVG format

The current format can be displayed with an SVG viewer. See section “SVG format” on page 57.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. E[x]port...

5.5.1 NGE format

Explanation

The NGE format is used only in versions 1.5 and higher of SIDEXIS XG.

Export in NGE format

Exporting an “Exam” in NGE format means that all objects in the exam workspace are saved to a file.

5.5.2 SVG format

Explanation

SVG (Scalable Vector Graphics) is a file format which enables the use of vector graphics on the Internet. SVG is a language used for describing graphics in XML (Extensible Markup Language).

Export in SVG format

During an “Exam” export in the SVG format, all objects in the workspace are exported to the specified folder.

In addition to the SVG file as such, the images from the “Exam” are saved as JPG files to the folder.



An “Exam” should always be exported to an empty folder.

Reason: Any existing JPG files are overwritten without reconfirmation prompt.



For viewing, you should use the newest version of the Adobe® SVG Viewer.

This viewer is integrated as plug-in into the installed Internet browser.

Opening an SVG file starts the default Internet browser.

See section “Working with an exported “Exam” in the Adobe® SVG Viewer” on page 59.

5.5.3 Working with an exported “Exam” in the Adobe® SVG Viewer

Operation

More information on how to use the Adobe® SVG Viewer can be obtained in the related context menu under the “Help” item.

Hints for use

The Viewer is controlled by a context menu. (Activation by right-clicking).



The setting “Higher Quality” in the context menu results in better representation of geometric forms (smoothing of jagged edges, anti-aliasing). On texts and images, however, it may produce a somewhat blurred impression. In this case you should deactivate the setting.



The browser’s print function should not be used because of distortions!

- The window title contains configurable patient data (See appendix “Options” on page 259).
- When you click an image, it opens directly in the Internet browser window.
To return to the “Exam” view, press the “Back” button of the Internet browser.
- The file name of an image is displayed on the status bar when the mouse pointer is above the corresponding image.

5.6 Importing an “Exam”

Explanation

Using versions 1.5 and higher of SIDEXIS XG, it is possible to import an exam with the "Exam import" function.



The import function can be used only if the exam to be imported was exported from version 1.5 or higher of SIDEXIS XG!

There are two different file formats which can be imported:


- **NGE format**

For more information, see section "NGE format" on page 57.

- **SVG format**

For more information, see section "SVG format" on page 57.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. Import...
Via drag & drop	
NGE format only: Via a double-click in the Explorer	

Import

- For registered patients, SIDEXIS XG compares the patient data of the registered patient with that of the imported exam.
If the patient data is not identical, a confirmation query then asks whether the exam to be imported should be imported to the registered patient.
- If no patient is registered, the patient with the matching patient data (first name, last name, date of birth) is automatically opened.
If the patient is not known to the database, a new patient will automatically be generated when the exam is saved. In this case, it may be necessary to enter additional new patient data. See section "How can I modify patient data?" on page 80.

The exam is then displayed in SIDEXIS XG after the function is executed. The exam is stored in the database along with all of the images it contains only after the "Save exam" function is executed (See section Saving an "Exam" on page 55).



The exam is then displayed in SIDEXIS XG after the function is executed. The exam is stored in the database along with all of the images it contains only after the "Save exam" function is executed (See section Saving an "Exam" on page 55).

5.7 Deleting an “Exam”

Explanation

SIDEXIS XG offers you the possibility of deleting saved exams from the exam database.




*The images contained in the deleted exam will **not** be deleted from the SIDEXIS database!*

Validity

The function refers to the exam which is currently open.

Activating the function


Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [E]xam2. [D]elete...

5.8 Closing an “Exam”

Explanation

The close “Exam Close” function is used to close the current exam.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. [C]lose

The “Exam” is closed.

Configuration possibility

The following option can be configured:

- If there are any objects in the workspace, the software asks whether the current view should be saved as “Exam” (See section Saving an “Exam” on page 55.).
This option can also be configured so that this query appears only if at least two images are located in the workspace.

Configuration

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem... 3. Reminders...

The “Reminders” window appears.

See section “Reminders...” on page 228.

5.9 Changing the form and the size of objects

Explanation

Depending on the object type used, the form and also the size of the object can be modified.

Objects can be classified according to their modifyability:

- Closed-area objects
- Line-shaped objects
- Objects with invariable size

Closed-area objects

This includes:

- Image objects
 - X-ray images
 - Video exposures
- Vector objects
 - Rectangle (see section "Rectangle" on page 199)
 - Ellipse (see section "Ellipse" on page 200)

Explanation

Vector objects can be resized and reshaped like a window object in Windows.

However, image objects can only be reduced in size. This means that they are not really reduced in size, but only clipped.

You should use the "Viewport" function (See page 155).

With image objects, you can only zoom in or out the image as a whole using the zoom function.

Line-shaped objects

This includes:

- Vector objects
 - Connecting arrows (see section "Connecting arrows" on page 194)
 - Lines (see section "Lines" on page 196)
- Measurement tools
 - Length measurement (see section "Measuring lengths" on page 142)
 - Angle measurement (see section "Measuring an angle" on page 146)
 - Bone density measurement (see section "Measuring the bone density" on page 148)

Explanation

These objects consist of individual node points that are connected by lines.

In most cases these objects are located completely within an image object and are adjusted when the zoom function is applied to an image object.

The node points can be moved when the object is selected.

First place the mouse pointer above a node point. A small navigation crosshair appears.

With the left mouse button pressed, you can drag the selected node point to a new position.

Objects with invariable size

The nature of these objects does not allow resizing.

This includes:

- Vector objects
 - Drawing tool “Cross” for orthodontics (see section “Special drawing tool for orthodontics” on page 198)
 - Text fields (see section “Text fields” on page 197)
- Findings (see section “Image description and findings” on page 96)

5.10 Displaying and changing object properties


Explanation

The properties or attributes of specific objects can be displayed and changed via the "Attributes" dialog box in the workspace.

Validity

- The individually selected object.
- This function is only applicable to vector and measurement objects.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Alt]+Enter
Activation via the context menu	1. Properties
Activation via the menu bar	1. [A]nalysis 2. [P]roperties...

5.10.1 Changing object properties

Explanation

The possibilities for change depend on the type of object involved.
Not all types are always possible!

Change possibilities

- Stroke width
- Stroke color
- Fill color
- Stroke width

Function

1. Select the desired object.
2. Activate the "Properties" function.
3. Change the properties as required.
4. Confirm the message with "OK".

Applying settings as default values

If the selected settings are to be used afterwards, they first must be applied by clicking the "OK" button in the "Attributes" dialog box and activating the "Apply as default values" check box.

5.11 Removing objects from the workspace

Explanation

All selectable objects can be removed from the workspace with the help of the *Remove* function.




This function should not be confused with the deletion of images. The images are not deleted, but only removed from the workspace.

If images are removed from the workspace, all objects linked to the image are removed as well.

Validity

All selected objects in the workspace.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Del]
Activation via the context menu	1. Remove
Activation via the menu bar	1. [E]dit 2. [R]emove

5.12 Copying the active image to the Windows clipboard

Explanation

SIDEXIS XG offers the possibility to copy the active image to the Windows clipboard.




If the copied image is edited with another software (e.g. PaintBrush), it is no longer suitable for diagnostics.

Validity

The currently active image in the workspace.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[C]
Activation via the context menu	1. Copy
Activation via the menu bar	1. [E]dit 2. [C]opy

5.13 Pasting images from the Windows clipboard

Explanation

SIDEXIS XG offers the possibility of copying images from the Windows clipboard to the workspace.




The representation and resolution of images which have been imported into the program via the Windows clipboard depends on the imported images.

Validity

All pixel images.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[V]
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]dit 2. [P]aste

6 Patient management

Patients for whom a digital exposure is to be saved are managed in a powerful database in SIDEXIS. To avoid any confusion, all saved images are always clearly assigned to the respective patient.

Overview

This chapter provides the following information:	Page
Which dialog box is used to register a patient?	72
How do I use the patient selection dialog box?	73
How can I create new patient data?	78
How can I modify patient data?	80
How can I delete patient data?	81
How can I check out a patient?	83

Getting started

Patient registration must always be the first step taken to be able to assign the image to the patient and then display a saved image on the screen.

Data security

Since a newly taken X-ray is saved automatically to the patient database immediately after the exposure for reasons of data security, the patient must be registered before the exposure is taken in this case, too.



Whenever an X-ray is to be taken with SIDEXIS, a patient must be registered previously.

Data security / exception “video images”

When working with the video camera, it is not always necessary or desirable to save the video images. For this reason, you can make video exposures in SIDEXIS without having to register the patient first. If you later wish to save your video exposure and the patient has not yet been registered, you can register him or her afterwards.



A patient does not need to be registered prior to taking video exposures. The patient can be registered later if you wish to save the video exposures.

If you attempt to take an X-ray without registering the patient first, the “Register patient” dialog box opens.


The commands for patient management can be found in the *Patient* submenu of the Exam menu.

6.1 Which dialog box is used to register a patient?

Answer

Patients are registered in the “Patient selection” dialog box.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [E]xam2. [P]atient3. [R]egister...

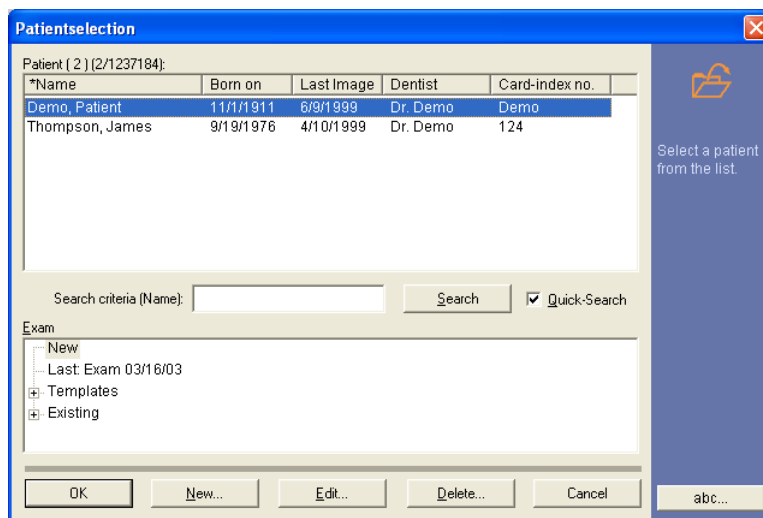
6.2 How do I use the patient selection dialog box?

Layout

The "Patient selection" dialog box is divided into the following areas:

- "Patient" selection list box (See page 73)
- "Exam" list box (See page 74)
- Buttons (See page 77)

Example screen



6.2.1 "Patient" selection list box

Explanation

The "Patient" selection list box is used to select the desired patient.

Structure

The patient list is displayed here.

The data of the individual patients is displayed line-by-line.

The patient data is displayed in columns corresponding to the column headings.

Sorting

The patient list can be sorted by the column headings.

- Click the desired column heading.
If the patient list should be sorted in reverse order, click the desired column heading again.

Patient search

There are two ways to search for patients.

- Search via the scrollbar.
- Search via the "Search criteria" search box.
- Scroll the section using the scrollbar in the "Patient" selection list box until you can see the required patient.

Search via the "Search criteria" search box.



This searching method is possible only with the patient data "Name", "Dentist" and "Card-index no".

The search is performed according to the selected sorting method in the search box.

It is displayed in brackets behind the term "Search criteria".

There are two different search methods here.

- Patient search without "Quick-Search"
- Patient search with "Quick-Search"

Patient search without "Quick-Search"

1. Deactivate the "Quick-Search" check box.
2. Select the desired search criterion.
3. Type the personal data into the search box according to the search criteria.
4. Actuate the "Search" button.

The desired patient selection then appears.



When you press the "Search" button without having entered any letter(s) or number(s) in the search box, all patients included in the database are displayed.

Patient search with "Quick-Search"

1. Deactivate the "Quick-Search" check box.
2. Select the desired search criterion.
3. Type the personal data into the search box according to the search criteria.

Following each entry, the program searches the database for the data entered and displays the appropriate section in the "Patient" selection list box.

Selecting a patient

Demo, Patient	01.11.1911	Dr. Demo	11.12.2002	1032
Musterfrau, Eleonore	12.02.1984	Dr. Demo	11.12.2002	1425
Mustermann, Klaus	13.12.1980	Dr. Demo	12.12.2002	1152

- Click the desired patient in the "Patient" selection list box.

Selected items appear highlighted on the screen.

The patient is now selected.



6.2.2 "Exam" list box

Explanation

In the "Exam" list box, a new exam can be saved or saved exams can be called up.

The "Exam" box includes a tree structure representing a selection.

Navigation

	Navigating in the tree structure
	The tree structure expands when you click the plus icon.
	The tree structure collapses when you click the minus icon.

Structure

The "Exam" window has the following structure (from top to bottom):

- Firstly, the "**New**" box is displayed.
If it is activated, an empty workspace for a new exam is opened for the selected patient.
The "**New**" box is preselected by default.
- Secondly, the name of the last exam saved is displayed.
If it is called up, the last exam saved for the selected patient will be opened.
- Thirdly, the "Templates" folder is displayed.
It contains ready-to-use templates of special exam types and self-created templates.
See section "Templates" on page 75.
- Fourthly, the "Existing" folder is displayed.
All previously saved exams are displayed.
They can be opened for viewing or diagnosis and as a supplement to X-ray and video exposures.

Selection

Exam types can be selected by mouse-click.



Selected items appear highlighted on the screen.

The selected exam type is activated by pressing the "OK" button.

6.2.3 Templates**Explanation**

SIDEXIS XG offers the possibility of using templates to create exams. There are ready-to-use and self-created templates.

Ready-to-use templates

The following ready-to-use templates are available:

- **FMX xx** Exams (Intraoral)
xx = number of exposures
- **4 Horizontal Bitewings** (Intraoral)
- **Check-Up** (Intraoral)
- **Ortho-Template**

This sample image shows an exposure sequence comprising one panoramic, one Ceph and one exposure. This combination is intended exclusively for the ORTHOPHOS XG^{Plus} DS Ceph. The ex-

posures are taken in a predetermined sequence (P1-C3-C4) with shorter cooling periods in between.

A description of the individual exposures is provided in the Operating Instructions of the ORTHOPHOS XG^{Plus} DS Ceph.

A prolonged cooling period must be observed following this exposure sequence.

Example screen




Self-created templates

There are two types of self-created templates.

- Templates for intraoral radiography which can be edited with a special editor (See section "Editing an exposure template" on page 217.).
- Templates which use the screen layout of the workspace and the order of exposure as a template.

All image types (Intraoral, Panorama, Ceph, TSA and Video) can thus be saved in the available templates.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. Save template...

6.2.4 Buttons

Description of the button functions:


Command button	Meaning
"OK"	This button activates the selected patient and the selected exam.
"New..."	This button opens the "New patient" dialog box, which is used to include a new patient in the SIDEXIS database. See section "How can I create new patient data?" on page 78
"Edit..."	This button opens the "Edit patient data" dialog box, which is used to modify the data of the currently active patient. See section "How can I modify patient data?" on page 80
"Delete..."	This button opens the "Delete patient" dialog box, in which an existing patient can be deleted from the SIDEXIS database. See section "How can I delete patient data?" on page 81
"Cancel"	This button closes the "Register patient" dialog box. See section "How can I check out a patient?" on page 83

6.3 How can I create new patient data?

Background information

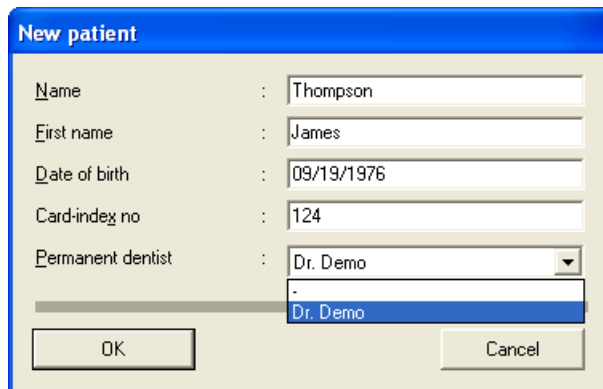
If the patient is not known to the system (i.e., he or she does not appear in the list on the patient registration dialog box), then a new registration must be made. For this purpose, the patient data are entered in the text boxes of the relevant dialog box.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [E]xam2. [P]atient3. [N]ew...

The “New patient” dialog box opens.

“New patient” dialog box



Entering patient data

- Enter the patient data in the individual text boxes of the relevant dialog box.



The system recognizes if last name, first name and date of birth are identical to those of another patient and issues a corresponding warning. On the other hand, card index numbers can be used several times. A date of birth in the future is not accepted.

Text boxes

- The last name must be entered in the first box, “Name”.
- The first name must be entered in the second box, “First Name”.
- The date of birth must be entered in the “Date of birth” box.
When entering the date of birth, you do not need to separate day, month and year as this is done automatically. For example, the numbers “030395” are sufficient for March 3, 1995.

Optional text boxes

- It is recommended to enter the patient's card index number in the "Card-index no" box.
- The name or the abbreviation of the responsible dentist should be entered in the "Permanent dentist" box.

Navigation

- To jump to the next text box, press the [Enter] or [Tab] key.
- To return to the previous box, press [Shift]+[Tab].
- To directly select a box, position the mouse pointer in it and click.

Completion

Once all boxes are filled in completely, confirmation with "OK" creates the patient in the database and registers him or her in the system. An already registered patient will be replaced by the new patient. The new patient is known to the system from now on.

6.4 How can I modify patient data?


Explanation

The data of the currently registered patient can be modified at any time. For this purpose, enter the new data in the desired text boxes of the dialog box. When you confirm the dialog box, the new patient data are automatically saved to the database.



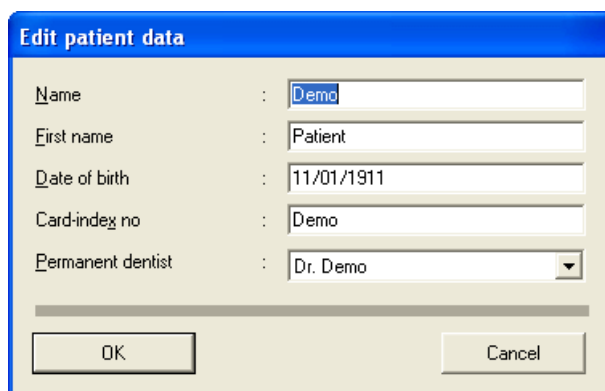
When the function for editing patient data is launched from the patient selection dialog box, the changes refer to the patient selected in the list. In this case the program returns to the activating dialog box after the data have been changed. This enables users to conveniently change the data of several patients without having to go via the menu and previous registration of the patients.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [E]xam2. [P]atient3. [E]dit data...

The “Edit patient data” dialog box opens.

Example screen



Edit patient data

Name : Demo

First name : Patient

Date of birth : 11/01/1911

Card-index no : Demo

Permanent dentist : Dr. Demo

OK Cancel

6.5 How can I delete patient data?

Explanation

This function deletes the currently registered patient from the patient database. As is logical, the patient is first checked out by the system during this operation.



To prevent inadvertent deletion, a message prompting you to reconfirm the command is displayed.




When the function for deleting a patient is launched from the patient selection dialog box, then the delete operation refers to the patient selected in the list.

In this case the system returns to the activating dialog box after the delete operation.

This enables users to conveniently delete several patients from the database without having to go via the menu and previous registration of the patients.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [E]xam2. [P]atient3. Dele[t]e

The “Delete patient” dialog box opens.

Example screen

Delete patient

Name

:

Thompson

First name

:

James

Date of birth

:

09/19/1976

Card-index no

:

124

Permanent dentist

:

Dr. Demo

OK

Cancel

6 Patient management

Legal retention periods


To guarantee the legal retention periods for X-rays, it is not possible to delete patients for whom X-rays have already been stored in the image database.

In this case the following message appears:



6.6 How can I check out a patient?

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. [P]atient 3. [C]heck out

The patient is checked out.

Control

- If you have processed existing images or taken new video exposures of the patient you are about to check out, a message asking you whether you want to save the changes is displayed.
- New X-ray exposures have already been saved automatically by the system.

Further information

The chapter on “Patient management” on page 71 provides further information about saving and closing images.

After the patient has been checked out successfully, the title bar of the program window informs you that no patient is currently registered.

7 Image management

Subdivision

Functions referring to image management	Page
Storing	86
Opening images from the SIDEXIS database	88
Image description and findings	96
Removing objects from an exam	100
Deleting images from the image database	102
Image code	103
Exporting image views	107
Importing an image	110
Printing images and diagnostic findings	112
Print preview	113
Scanning images	116
Sending images via Internet as e-mail	117
Sending an image	119

7.1 Storing

7.1.1 Saving original images

Explanation

It is not necessary for the user to save the exposures as they are saved automatically in the patient database immediately after their acquisition.

These automatically saved images are referred to as original images or original views.

The new video exposures saved for the first time by the user are also initially saved in the database in the form of original images.

7.1.2 Saving image views

Explanation

In addition, the user may wish to store individual views after image processing and optimization. These views can then be saved as well.

The original image will never be overwritten by a new view.



Views can therefore only be saved in addition to original images and originate from the same.

In this way it is possible to generate different views from one image which then can also be displayed simultaneously. The name of such a new view is assigned in a dialog box.

What does a view contain?

The following image processing and image optimizing procedures are saved as a view:


- Measurements
See chapter “Measurement tools” on page 141.
- Filter
See chapter “Image filters” on page 167.
- Screen position
- Zoom
See section “Zooming the image” on page 152.
- Image detail
See section “Panning” on page 154.
- Rotation
See section “Rotate” on page 163.

Validity

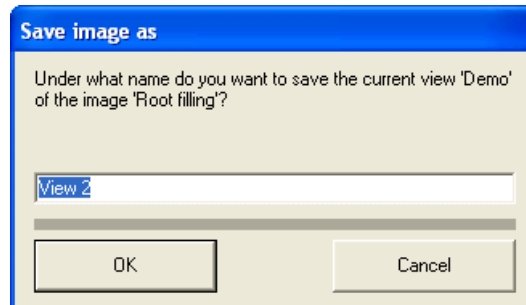
This function can be used for X-ray and video images (but not for live and still images).

This function applies only to the active image.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[S]
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. Save [a]s...

Save dialog box



The system automatically generates unique view names which, however, may be overwritten by the user with other meaningful names. This makes it easy to retrieve the views later.

Additional information



Loading saved views that have been subjected to complex image processing procedures takes somewhat longer than loading original images.

If you have opened several images and want to save all views, it is recommended to save them as exam.

You can also save all the exposures in compressed form. This greatly reduces the amount of storage space needed in the database. More information can be found in chapter "System setup" on page 211.

7.2 Opening images from the SIDEXIS database

Explanation

Images from the SIDEXIS database can be opened via the "Select image" dialog box.


All available images of registered patients are displayed here.

Validity

This function can be used for X-ray and video images (but not for live and still images).

This function applies only to the active image.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Enter]
Activation via the menu bar	<ol style="list-style-type: none">1. [I]mage2. Se[l]ect...

Function

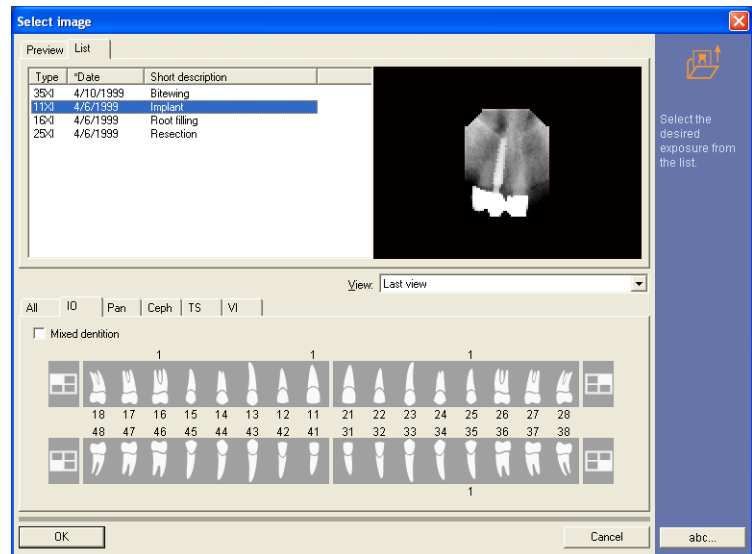
After the list of available X-rays has been sufficiently preselected, the desired images can be selected with the mouse or the cursor keys. You can make either a single or a multiple selection.

Overview

More details can be found in the following sections:	Page
Elements of the dialog box	89
Single selection	93
Multiple selection	94
Patient data discrepancies	94
Procedure for relocated images	95

7.2.1 Elements of the dialog box

Dialog box



View tabs

You can switch between two different views by means of two tabs.

They show all existing images of the registered patient, by default sorted by date and time.

- “Preview” tab

The images are displayed as preview images, with the related image type.

- “List” tab

The images are displayed as a list.

The list includes the image type, date and a short description of each image.



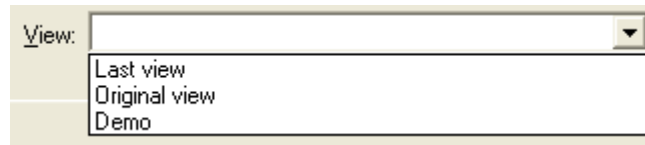
Images which have been marked in the image description as not diagnosable are identified by “~~” in the list of acquired images.

They are displayed only when all image types are selected by clicking the “All” button.

“View” list box

The “View” list box allows you to choose between several available (i.e., previously created) image views. The individual views are listed by name.

“Last view” means here the last active view among the previously listed views.



The selected view is loaded and displayed as it was last saved in a window in the workspace.

Saving image views is described in more detail in section “Storing” on page 86.



The “View” list box is configured via the “Options” tab (see page 259).

Image type selection tabs

The images appearing in the list can be preselected according to their image type with the tabs in the lower half of the dialog box. For X-rays taken with SIDEXIS, the image type is assigned automatically by the system in the findings.

This enables images to be retrieved more easily if there is a large number of images. However, this preselection works only if the user has assigned the image accordingly at an earlier point in time (usually immediately after the exposure or during the findings). This assignment is described in section “Image description and findings” on page 96.

Tab	Image type selected
All	Shows all types jointly Note: Image filters are not displayed in the preview
IO	Shows only type XI intraoral X-rays (see “Odontogram”)
PAN	Shows only type XP panoramic X-rays (see “Panoramic image type (XP)”)
CEPH	Shows only type XC Ceph X-rays (see “Ceph image type (XC)”)
TS	Shows only type XS transversal slice images (see “Odontogram”)
VI	Shows only video exposures (see “Odontogram”)

For each tab, the number of available images is indicated, provided that there are any images of this type. The code of the selected image type is then displayed above the list box (XI, XP, XC, VI, XS, or ?? for exposures of an unknown or arbitrary type).

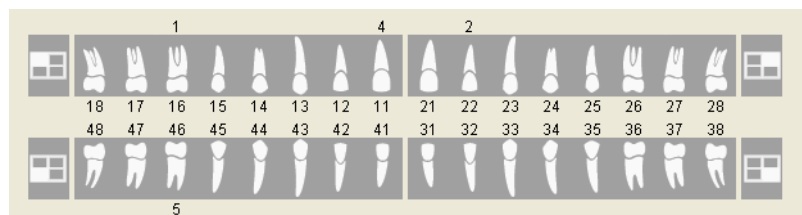
Odontogram

For the intraoral X-ray (XI), transversal slice (XS) and intraoral video (VI) image types, an odontogram is displayed in addition to the tab. This odontogram allows you to specify further search criteria for retrieving acquired images.

When you click a tooth symbol, only images that correspond to the selected tooth are shown in the list of available X-ray images.

The image type code above the list box is then detailed further according to the international odontogram (e.g. 16XI).

The number of available images is shown below each tooth button.



Each of the symbols located next to the tooth symbols displays can be clicked to display one fourth of the teeth in the odontogram.



The odontogram can be changed to mixed dentition by means of a check box.

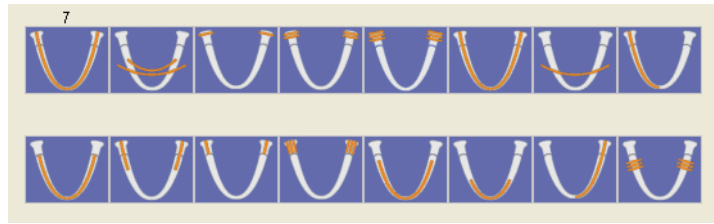
Panoramic image type (XP)

For the panoramic image type (XP), an overview of the OP programs appears instead of the odontogram. The procedure is identical to that for intraoral images. The image type code above the list box is then detailed further according to the selected program number (e.g. 03XP).

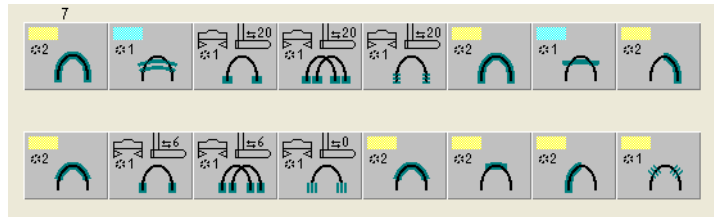
In the course of the appearance of ORTHOPHOS XG, the overview layout was adapted to match the design of ORTHOPHOS XG. This new layout can be replaced by the SDEXIS Classic layout (See section "Options" on page 259).

7 Image management

ORTHOPHOS XG layout



SIDEXIS Classic layout

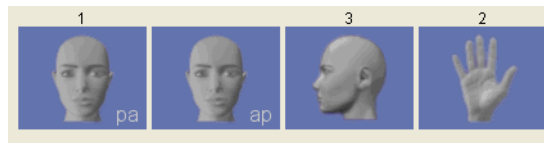


Ceph image type (XC)

For the Ceph image type (XC), a breakdown into PA, AP, lateral and carpus exposures is offered. The procedure is identical to that for intraoral images. The image type code above the list box is then detailed further according to the selected type (e.g. 01XC).

In the course of the appearance of ORTHOPHOS XG, the overview layout was adapted to match the design of ORTHOPHOS XG. This new layout can be replaced by the SIDEXIS Classic layout (See section "Options" on page 259).

ORTHOPHOS XG layout



SIDEXIS Classic layout



7.2.2 Single selection

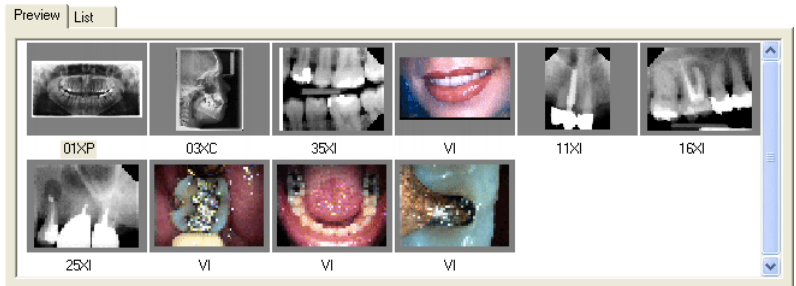
Explanation

Single selection means that only one image is selected. The selected list item is highlighted by a bar.

Example screen with “List” tab active



Example screen with “Preview” tab active



Selection

You always open the last active view of the image as follows:

1. Select the desired image by left-clicking it with the mouse.

Only “List” tab: A preview of the selected image is displayed in a window at the right.

Loading the image

2. There are 3 ways to load the image:
 - By double-clicking the selected image with the left mouse button
 - By actuating the “OK” button
 - **Only “List” tab:** By double-clicking with the left mouse button into the preview window

The image is loaded into the workspace.

7.2.3 Multiple selection

Explanation

With multiple selection, several images are highlighted in color in the list.

This method also allows you to make and retrieve image comparisons using images generated over an extended period of time.

With multiple selection, either only the "Last view" or the "Original view" can be selected.

Selected items appear highlighted in the list box. "View".

For configuration, see section "Options" on page 259.



The "View" list box is not available during multiple selection (dimmed).

Selection

1. Select the first desired image by left-clicking it with the mouse.
2. Depending on the desired type of selection, press the following keys:
 - [Shift] key / All images between the first and the last selected image are selected.
 - [Ctrl] key / Only the explicitly selected images are selected.
3. Select each further image desired by left-clicking it.



To deselect images that you have selected inadvertently, press the [Ctrl] key and then click the unwanted image.

Once you have deselected the last selection, you return to the single selection mode, thus enabling you to select views again.

Loading the image

4. There are 3 ways to load the selected images:
 - By double-clicking the selected image with the left mouse button
 - By pressing the "OK" button
 - **Only "List" tab:** By double-clicking with the left mouse button into the preview window

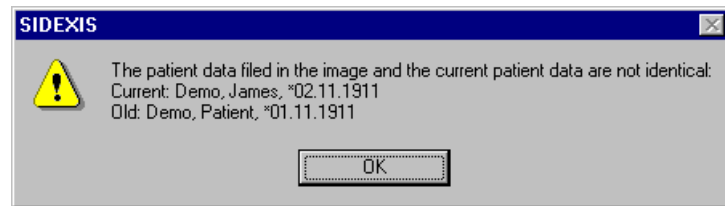
The images are loaded into the workspace.

7.2.4 Patient data discrepancies

Explanation

If the patient data saved for the image you have selected are not identical to the current patient data, a warning appears to prevent incorrect assignment of data. You should always check the reason for this discrepancy (e.g. name change due to marriage etc.).

Example screen



7.2.5 Procedure for relocated images

Explanation

If the images you require have already been relocated, you may be prompted to insert a storage medium when you try to select them.

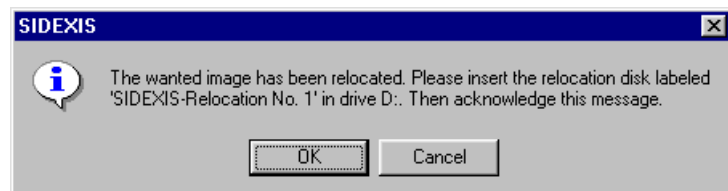
Function

Once you have inserted the storage medium and acknowledged the message, the image can be displayed in the usual way.

Relocated images are identified by "»" in the list for enhanced clarity.

For further information on this topic, please refer to the section "Concurrence test" on page 209 .

Example screen



7.3 Image description and findings

Explanation

When an image is open and active, its description can be displayed or edited at any time.


This image description helps you to easily retrieve a specific image of a patient. Furthermore, diagnostic findings can be entered in the image description.

Validity


This function can be used for X-ray and video images (but not for live and still images).

This function applies only to the active image.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. [F]indings

Alternative activation of function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Alt]+Enter
Activation via the context menu	<ol style="list-style-type: none"> 1. Properties
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. [P]roperties...

Display in the workspace



A symbol for an existing diagnostic finding is displayed in the image.

This symbol can be freely moved within the image or in the workspace.

If the exam symbol is placed outside the image, it is always linked to the relevant image by a dotted line.

The dialog box opens after a double-click.

Example screen



Dialog box

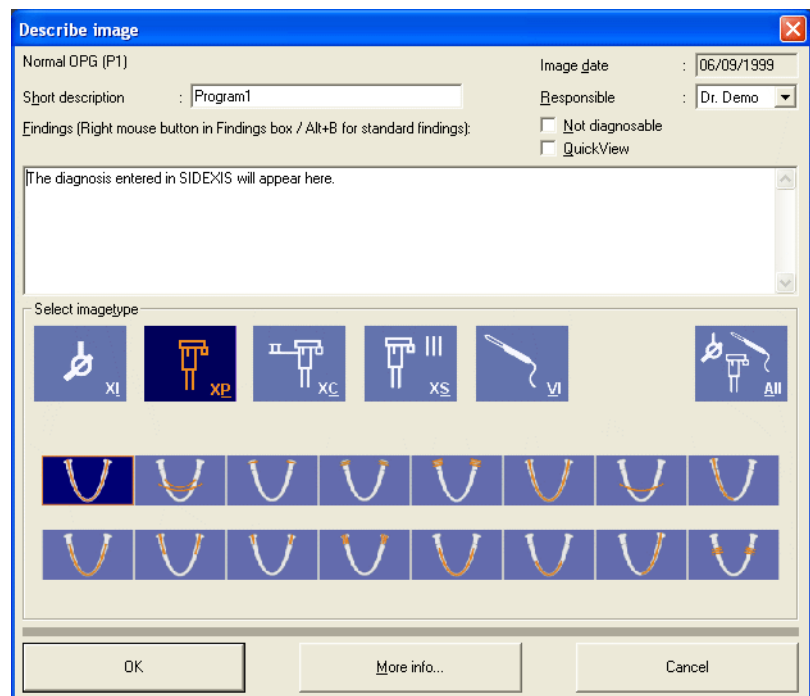


Image information

The displayed dialog box shows the available image information for the currently active X-ray.

■ Image type

The image type is displayed here.

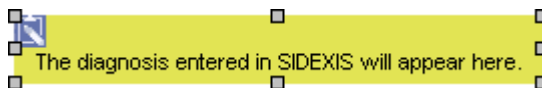
For intraoral, TSA and video exposures, the image type is determined by the tooth selected in the displayed odontogram.

For panoramic and ceph exposures, the image type is determined by the program selected in the OR program survey. The program number of the ORTHOPHOS is also displayed in the image type.

This image information appears later on in the list box of the dialog box for selecting available images.

- **Image date**
This image information appears later on in the list box of the dialog box for selecting available images.
The image creation date is read-only and cannot be edited.
- **Short description**
This image information appears later on in the list box of the dialog box for selecting available images.
You can enter any text in this box.
- **Responsible.**
The permanent dentist of the patient is entered here automatically by the system. If another dentist was responsible for the exposure, the data can be edited.
- **Findings**
You can enter any text in this box.
- **Not diagnosable**
If an X-ray cannot be diagnosed, then this can be noted by activating the associated check box. Images marked as not diagnosable are identified by “~~” in the image type.
They are displayed only when all image types are selected by clicking the “All” button.
- **Quickview**
If this check box is activated, the findings text is displayed in a text window in the workspace.

Example screen:



The accurate specification of image type and short description is helpful for later retrieval of the X-ray and should therefore always be made.



When entering the findings text, you can open a context menu with precompiled standard findings by pressing the right mouse button or the [ALT] + [B] key combination. Several of these findings can be combined by repeating this action. The [Esc] key closes the context menu without further actions. Chapter “System setup”, section “Standard findings...” on page 222 describes how these standard findings can be configured individually.

All entries are saved automatically when you confirm the dialog box.
When you cancel the dialog box, all changes made are discarded.

Automatic activation

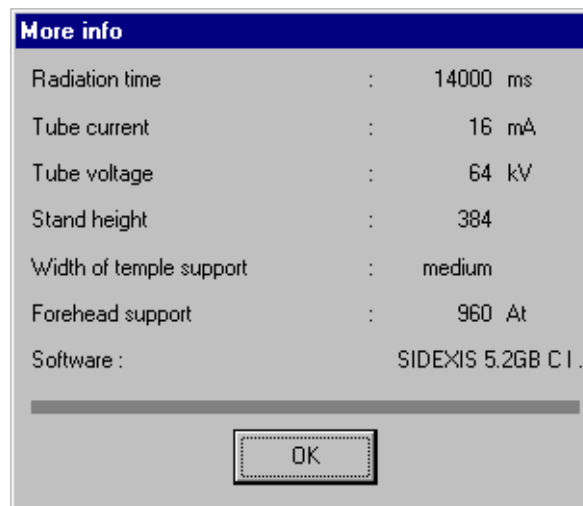


SIDEXIS can be configured in such a way that determination of the image type to be acquired or diagnostics is launched automatically before or after taking the X-ray. More information can be found in chapter "System setup", section "Exposure..." on page 213.

It is not possible to determine whether an X-ray image is an original or a copy. Nor is it possible to recognize whether an image is compressed (for further details, see chapter "System setup" on page 211) or to determine its compression level. This information, however, is required for expert appraisals. It may also be important in a service and complaint case to have accurate information about the exposure.

Additional information

For this reason, for all exposures taken with SIDEXIS, an information dialog box with further information on the displayed image is available after pressing the "More info..." button. The origin of an exposure and further information are displayed in the "Software" box. An explanation of the abbreviations can be found in the section "Image code" on page 103.



For **panoramic**, **Ceph** and **transversal slice images** generated with SIDEXIS XG, further information on radiation time, tube current, tube voltage, stand height, temple support width and forehead support is displayed. For all other exposures this information appears dimmed.


7.4 Removing objects from an exam

Validity

This function can be used for X-ray and video images (but not for live and still images).

This function applies to selected objects.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Del]
Activation via the context menu	1. Remove
Activation via the menu bar	1. [E]dit 2. [R]emove

Function

If any properties (image processing, window position, etc.) of one or several images have been changed, then several messages prompting you to save are issued before the images are removed from the workspace.



Configuration of the behavior for positioning the window is described in the section "Reminders..." on page 228.

With live video images, or if no changes have been made to an image that was already saved in the past, the associated image window is closed without this message dialog box.



When a patient is checked out or SIDEXIS is terminated, all views are closed automatically.


7.5 Close image

Validity

This function can be used for X-ray and video images (but not for live and still images).

This function applies only to the active image.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Esc]
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. [C]lose

Function

If any property (image processing, window position, etc.) of an image has been changed, then several messages prompting you to save are issued before the image is removed from the workspace.

With live video images, or if no changes have been made to an image that was already saved in the past, the associated image window is closed without this message dialog box.



When a patient is checked out or SIDEXIS is terminated, all views are closed automatically.

7.6 Deleting images from the image database

Explanation

This function can be used to delete previously stored images from the image database.

A distinction is made regarding the image type:

■ X-ray images

For X-ray images, only the stored image views can be deleted.

It is not possible to delete the original views.



To guarantee the legal retention period for X-rays, it is not possible to delete original images of this type.

■ Video images

For video images, both the stored image views and the original views can be deleted.

The original views of video images can be deleted only after re-confirming the command.


Please note that in addition to the original view, all associated views of the image are deleted as well.

Validity

This function can be used for X-ray and video images (but not for live and still images).

This function applies only to the active image view.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [I]mage2. [D]elete

Function

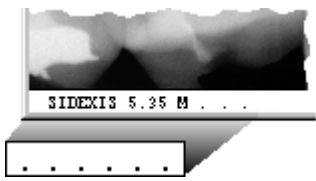
After activating the function, you must close the associated image window first for this purpose.

For safety reasons, a message prompting you to reconfirm the command is displayed before permanent deletion.

7.7 Image code

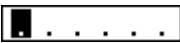

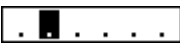











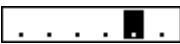


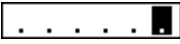



Explanation	<p>X-ray images are provided with a code to enable clear identification of copies and originals.</p> <p>The images used in SIDEXIS are assigned different codes when being printed, exported, copied to the clipboard (Ctrl+[C]) and when being sent by image mail or e-mail. This code (black lettering on a white background) appears in the bottom left corner of the image when it is exported, e-mailed or copied to the clipboard.</p> <p>If an image previously exported by SIDEXIS XG is re-imported, the code becomes visible.</p>
Re-importing images	<p>Upon re-import of an image, all filter, contrast and brightness adjustments become visible again. An image compressed on export is not compressed again on importing.</p>

Coding

	<p>The individual elements are separated by blanks. They always have the maximum length. For this reason, blanks are added at the end.</p> <p>Empty fields are marked by a period.</p>
---	--

7 Image management

The code is composed of the following elements

Position	Display	Meaning
		SIDEXIS image
		Version number with which the image has been acquired or imported. SIDEXIS XG version numbers are displayed as 6.x.
	  	Original image Copy Modified image
	    	Image created with the present SIDEXIS system Imported file Scanner (TWAIN) Imported from clipboard Imported via SLIDA
	 	No compression Compression type - JPEG
	 ⋮  	JPEG compression parameter: Quality factor Files with multiple compression (compressed export of an already compressed image) are preceded by '<'. The smallest compression factor used is displayed. No compression



The codes described above also appear in the "More info" dialog box. See section "Image description and findings" on page 96.

Example 1



- A new image, saved without compression and modified (brightness, contrast), then exported:

Coding: "SIDEXIS 5.35 M . . ."

Example 2

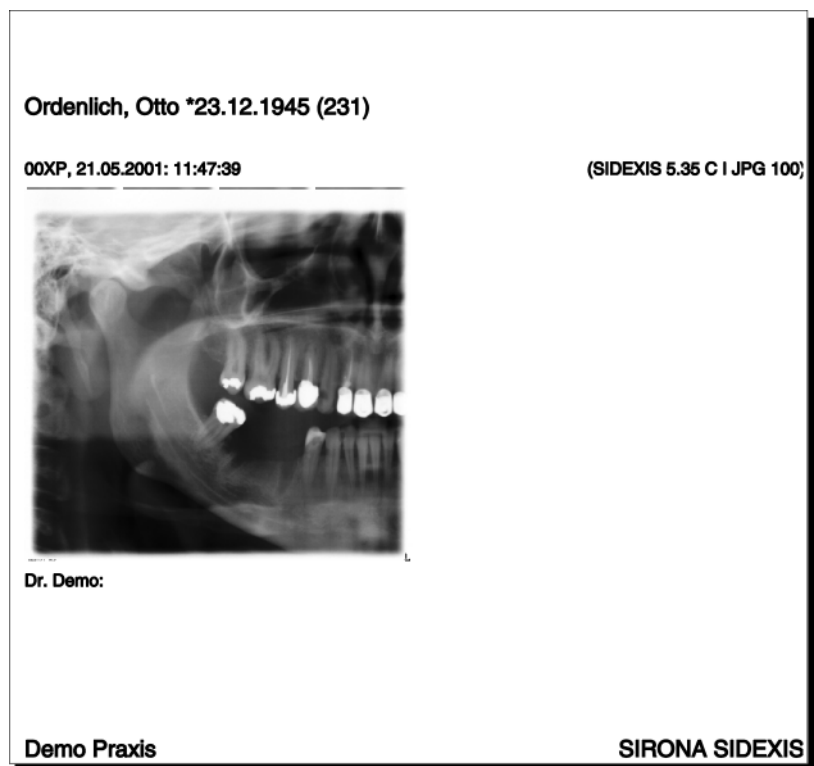


- A new image was saved with compression in dental practice A and a modified version of it was exported as a compressed file. This exported image was then imported in dental practice B (and saved without compression):

Coding: "SIDEXIS 5.45 M I JPG 100"

Example 3 (printing)

Printout of a re-imported copy, compression level JPEG 100.



The code is printed as text outside the image, but only for single image printouts.

Position: Right-aligned in brackets in the same line as the image title

7.8 Exporting image views

Explanation

Exchanging image data produced with SIDEXIS XG with other systems (for example, in case of a referral) is enabled by the *Export* function.

An image is copied onto another storage medium (MO, ZIP, JAZ, floppy disk or network drive) and can then be loaded with the import function at another location.




If the exported image is edited with another software (e.g. PaintBrush), it is no longer suitable for diagnostics.

Validity

This function can be used for X-ray and video images (but not for live and still images).

This function applies only to the active image.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. E[x]port...

Function

The WYSIWYG principle applies here.

The images are always exported in the state in which they are at the time the command is selected. This means that all processing steps (rotating, filtering, brightness and contrast adjustment) are also exported.

Exceptions:

- Magnified image details are not exported. Only entire images are exported.
- The "Invert" and "Color" filters are not applied in an image designated for export.
- Changes in the region of interest must be applied prior to export (See section "Brightness/contrast adjustment in the region of interest" on page 174).

The target of the export, i.e. path and file name, is defined in the dialog box.

Long file names can be used.

When using TIFF compression, always make sure that the system which has to import the data is capable of reading this compression format. This is always the case if the same or a newer SIDEXIS version than the exporting SIDEXIS version is being used.

The version number is displayed in the "More info" dialog box (see section "Image description and findings" on page 96).



In the "Save as type:" box Compression, which significantly reduces the amount of storage space required on the disk, can also be selected for X-rays to be exported. For example, a panoramic X-ray compressed with parameter 100 can be exported to a normal 3.5" disk.

Further details on compression can be found in section "System setup" starting on page 211.

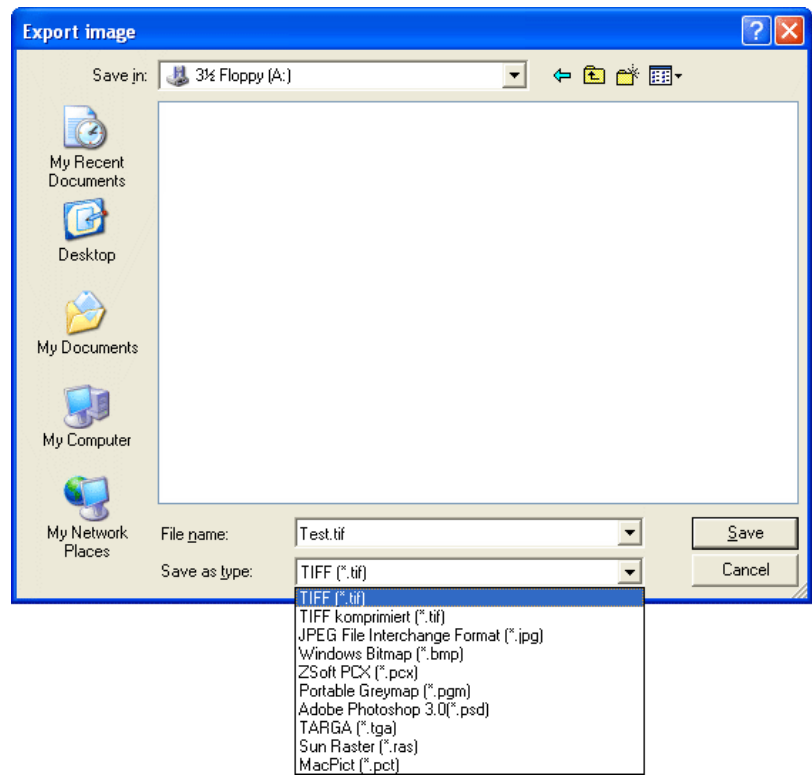
Example

Exporting the active image to a disk in drive A: under the file name "Test.tif"

1. Insert formatted floppy disk in drive A:
2. In the "File name:" text box, enter "Test.tif"
3. Select the file format if necessary
4. Confirm with "Save"

Remove disk from drive after the save operation is completed.

Example dialog box



7.9 Importing an image

Explanation

The *Import* function enables image data exchange between different systems, i.e., it is possible to load images that have been produced by a system other than SİDEXIS as well as images that have been produced and exported by another SİDEXIS system before.

For images that have already been exported using SİDEXIS, all available image information, such as exposure date and findings, are also exported in addition to the image as such.

The images integrated into the system in this way can be processed like normal exposures. In this case, too, unique assignment to one patient is required.



Before importing an image, the user should be absolutely sure that the correct patient is registered.



The representation and resolution of imported images depends on the imported images.

Validity


This function can be used for X-ray and video images.

The system automatically detects whether a compressed format was used for export.



Exports from non-SİDEXIS programs may possibly not be imported.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [I]mage2. I[m]port...

Function

The path and file name of the file to be loaded must be specified in the dialog box.

Long file names can be used.

Example

Importing the previously exported image named "Test" from a floppy disk in drive A:

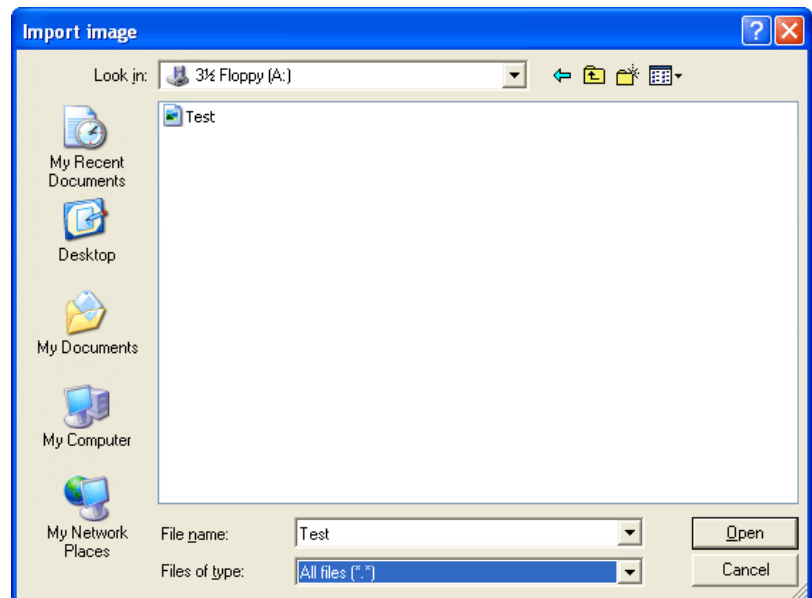
Insert floppy disk with image to be imported in drive A:

In the "File name:" text box, enter "Test"

Confirm with "Open"

Remove disk from drive once the image is displayed.

Example dialog box



7.10 Printing images and diagnostic findings

Validity




Printed images are **not** suitable for diagnostics.

Exception: Special printers that furnish outputs that are explicitly suitable for diagnostics, e.g. DICOM film imagers.

This function can be used for X-ray and video images (but not for live and still images).

This function applies only to the active image.

Activating the function

Activation options	
Activation by clicking the button ■ The image is printed immediately on the installed default printer	
Activation via hotkey ■ The image is printed immediately on the installed default printer	[Ctrl]+P
Activation via the menu bar ■ The "Print" system dialog box opens	1. [I]mage 2. P[r]int...

"Print" system dialog box

Here you can select and configure one of the Windows printers installed in the system.

In most cases, it offers sufficient space for the image and the associated description, so that, when the active image is printed, both are output together on one page.

The printout can be checked using the "Print preview" function (See page 113). A printout can also be triggered via this function.

The portrait or landscape format must be selected manually.



7.11 Print preview

Explanation

SIDEXIS XG features a print preview.




- This function can be used to obtain a preview of how the printout will look.
The position and size of the contents of the printout are displayed on the screen.
- The printout can be started and the printer setup can be invoked directly from the print preview.
- In the print preview of an image (but not with "Exam"!), it is also possible to adapt the position and the size on the printed page.




Activating the function

Activation options	"Exam" print preview	Print preview of an image
Activation by clicking the button		
Activation via the menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. Print preview... 	<ol style="list-style-type: none"> 1. [I]mage 2. Print preview...

Structure

With only one exception, the print preview uses the symbols from the SIDEXIS XG buttons.

Command button	Meaning
	The page is output to the currently selected printer.
	The print setup dialog box of the operating system appears.
	<p>The "Set up page" dialog box opens.</p> <p>The size and position of an image can be changed there.</p> <p>See section "Page setup for printing" on page 114.</p> <p>NOTE: Not active for the print preview of an "Exam"</p>

Command button	Meaning
	Zooms preview page in.
	Zooms preview page out.
	Closes print preview.

7.11.1 Page setup for printing

Explanation

The page to be printed can be configured in the "Set up page" dialog box.

Structure

■ "Size" group box

The size of the image to be printed is set in the "Size" group box.
The width-to-height ratio is not and cannot be edited.

■ "Position" group box

The position of the image to be printed is set in the "Position" group box.

■ "Apply as default values" checkbox

If the "Apply as default values" check box is activated, the size and position settings are saved for further printouts.

If the check box is deactivated, only the single printout in the print preview will be printed.

"Size" group box

■ "100%" option button

The image is printed out in the original size of the exposure.

- The size depends on the size information contained in the image.
- If the size information is missing in the image, the image will be printed with a width of 60 mm.
- X-ray images which have been obtained directly from a SİDEX-IS exposure or imported to the SİDEXIS database via "TIF" export are printed in the size of the sensor area.

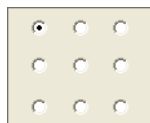
■ "Page-filling" option button

The size of the printout is adjusted so that the maximum printable area is fully utilized.

■ "Variable" option button

The size can be variably adjusted.

In the "Position" group box



■ "Limit to printable size" check box

If the "Limit to printable size" check box is activated, the size of the printout is limited so that the maximum printable area is not exceeded.

■ "Edge of hole" check box

If the "Edge of hole" check box is activated, a margin is left free for punching holes on the left edge of the sheet's printable area. The image size is reduced accordingly.

■ Positioning box

The image position can be determined via the option buttons in the positioning box.

7.12 Scanning images

Explanation

With SIDEXIS XG you can read image data from any TWAIN-compatible device (scanner, digital camera, etc.) into the database.

If several TWAIN devices are installed on the system, the appropriate device can be selected using the “Select scanner” function.




The representation and resolution of scanned images depends of the performance and the settings of the scanner as well as the quality of the original.

Validity

All TWAIN-compatible devices are permitted.

The main purpose of this function is to allow you to include conventional X-rays in the SIDEXIS database.

Activating the function


Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. S[c]an...

Tips for X-ray exposures

When scanning X-ray images, the following must be observed:

- In order to make full use of the SIDEXIS software functions, images must be scanned in grayscale mode (with 256 levels of gray).
- The scanner must be equipped with a transparency unit in order to ensure maximum contrast of the scanned images.
- We recommend scanning intraoral X-ray images at a resolution of 600 dpi.
- Panoramic, Ceph or TSA X-ray images should be scanned at a resolution of 300 dpi.
- If length measurements must be performed, the length must be calibrated by means of a reference measure on the X-ray image.

“Select scanner” function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. [S]elect scanner...

7.13 Sending images via Internet as e-mail

Explanation

If an Internet e-mail connection has been configured on your SIDEXIS workstation, you can send images via e-mail.

A description of the configuration can be found in chapter "System setup", page 211.



The procedure described here refers to cases where "SMTP" or "MAPI" have been activated in the SIDEXIS software.


If "MAPI + dialog" is activated, the preinstalled Windows e-mail program starts. Operation of the e-mail program that comes with Windows, however, is similar.

Validity

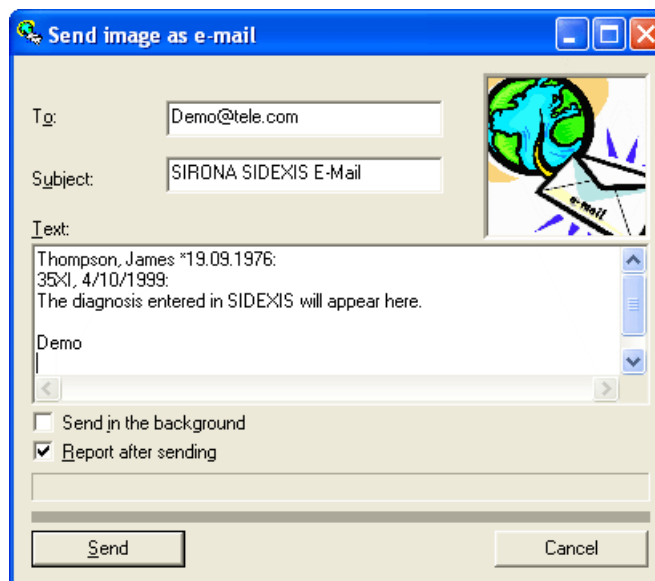
This function can be used for X-ray and video images (but not for live and still images).

This function applies only to the active image.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. [E]-Mail...

Dialog box



7 Image management

Elements of the dialog box

Field	Meaning
"To:"	In this box you must enter the e-mail address of the addressee.
"Subject:"	In this box you may optionally enter the subject of the e-mail.
"Text:"	<p>The header data of the active image and the name of the practice automatically appear in this text box.</p> <p>You may enter further explanations and information on the image to be sent.</p>
"Send in the background" button	You can continue to work with SIDEXIS XG while the image is transmitted.
"Report after sending" button	After the e-mail was successfully sent, a confirmation message appears on screen.
"Send" button	<p>Is used to send the e-mail to the addressee.</p> <p>While the e-mail is being sent, a progress indicator informs you about the status of the operation.</p>

7.14 Sending an image

Explanation

During installation and configuration of the system, the service engineer may interface further programs so that these can receive images from SIDEXIS. For example, you can use this option to forward images for further processing to measuring programs for implants or for remote X-ray analysis.

The desired image is transmitted with this command and is then available there when the target application is opened the next time.


Validity

This function can be used for X-ray and video images (but not for live and still images).

This function applies only to the active image.

The WYSIWYG principle applies here. The images are always exported in the condition at the time the command is selected. That is, all processing steps (rotating, filtering, brightness and contrast adjustment) are also exported. However, this applies only to entire images. Magnified image details are not exported.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. [S]end image

Function

If only a single addressee has been configured, then the image is sent without further queries immediately after giving the command, and the corresponding program opens simultaneously.

If several programs are interfaced to SIDEXIS in this way, then you select the desired target application in a dialog box.

8 Image acquisition

Explanation

When a digital X-ray image is acquired with SIDEXIS, the PC and the SIDEXIS software must be prepared for the exposure in addition to the usual operation of the X-ray tube assembly or panoramic unit. The PC must therefore be made ready for exposure.

As soon as the PC is ready for exposure and SIDEXIS is ready to take an X-ray, a dialog box appears on the monitor as control.

Subdivision

Image acquisition – topics:	Page
Safety information	122
Intraoral X-rays	123
Panoramic, Ceph and TSA X-ray exposures	128
Video exposure	131

8.1 Safety information



Before releasing radiation, the user should always ensure that the PC and software are ready for exposure and that the correct patient is registered in the system.



Since programs running simultaneously under Windows can interfere with each other, it is recommended not to switch to another program as long as exposures are being taken. Otherwise the consistency and reliability of such exposures cannot be fully guaranteed.



Immediately after the X-ray is taken, the acquired image is automatically saved to the patient database. This ensures a high level of data security.

Once the new X-ray has been saved, it is displayed in a window on the screen.

In contrast to X-rays, exposures with the video camera are possible even when the patient is not registered. The title bar displays the message "Unknown patient" in this case. If you later wish to save your video exposure and the patient has not yet been registered, you can register him or her afterwards. However, in order to avoid errors when saving video exposures and to ensure a uniform workflow, we recommend you to register the patient in advance even when working with the video camera.



Before saving the video exposures, the user should make sure that the correct patient is registered in the system!

SIDEXIS creates a description of every X-ray or video exposure taken. This description is automatically filled with certain information following an exposure. The data can be changed or updated (diagnostic findings) either immediately after the exposure has been taken or at a later moment. For details please refer to section "Image description and findings" on page 96.



Please note that the number of images which can be opened simultaneously is limited and a large number of open images reduces the overall system performance. Images which are no longer required should therefore always be closed.

8.2 Intraoral X-rays


Subdivision

Intraoral X-rays – topics:	Page
Single intraoral X-ray exposures	123
Multiple exposure	123
Templates for intraoral exposures	124
Operation with several intraoral X-ray units	125
Tooth selection	125
Image acquisition	126

Single intraoral X-ray exposures

The first alternative serves for producing a single intraoral image. In this case readiness for exposure for one single image is activated. After the ready dialog box is displayed and radiation is subsequently released, the new image appears on the screen. The process is completed. With this option, it is possible to jump to image description or diagnostics automatically before or after each exposure if the system has been configured correspondingly. More information can be found in chapter “System setup”, section “Exposure...” on page 213.

Activating the function


Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[Shift]+I
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. [I]ntraoral X-ray 3. S[i]ngle exposure

Multiple exposure

The *Multiple exposure* command can be used to take several intraoral X-ray exposures of the same patient, without having to again make the system ready and select the X-ray acquisition unit on the PC. After an intraoral X-ray is taken, readiness for exposure is restored automatically without any user interaction. This is of great advantage especially if the PC and X-ray sensor are located at different places. Once all X-rays are taken, the process is completed by canceling the ready dialog box.

8 Image acquisition

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[Shift]+M
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. [I]ntraoral X-ray 3. [M]ultiple exposure


Templates for intraoral exposures

You can select a template for intraoral exposure series from a template list.

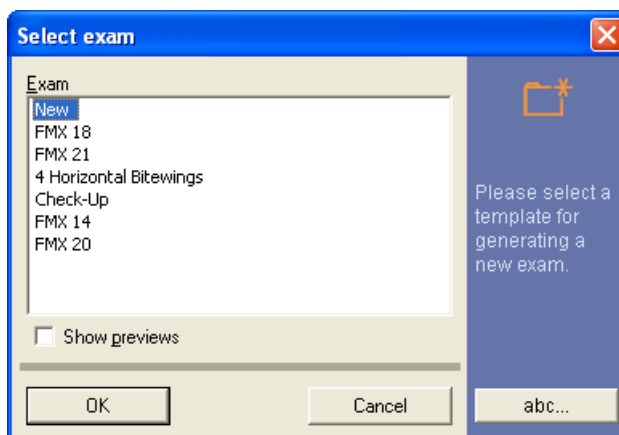
This feature is part of the exam concept of SIDEXIS XG.

You can create your own X-ray exposure series within the "Templates" function. More information can be found in chapter "System setup" on page 211.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+N
Activation via the "Exam" menu bar	<ol style="list-style-type: none"> 1. [E]xam 2. [N]ew...
Activation via the "Image" menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. [I]ntraoral X-ray 3. [N]ew...

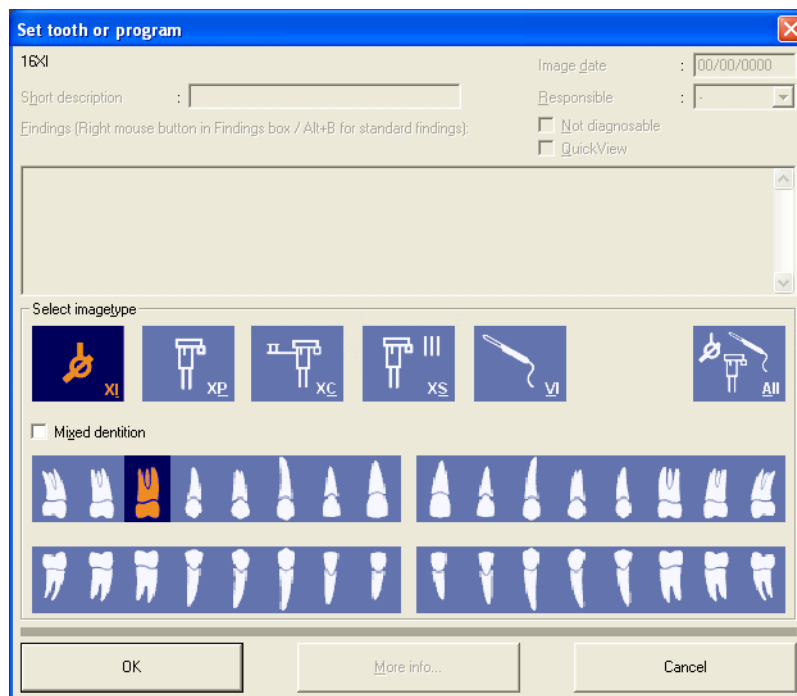
Selection dialog box



Tooth selection

To enable the user to enter the number of the tooth concerned, the findings dialog box explained in detail in the chapter on image description is displayed. Click the desired tooth in the lower part of the dialog box and confirm with “OK”. The rest of the findings dialog box is not yet relevant at this moment and is therefore unavailable for selection.

Selection dialog box



Here as well the procedure is completed by canceling the ready dialog box or specifying the tooth.

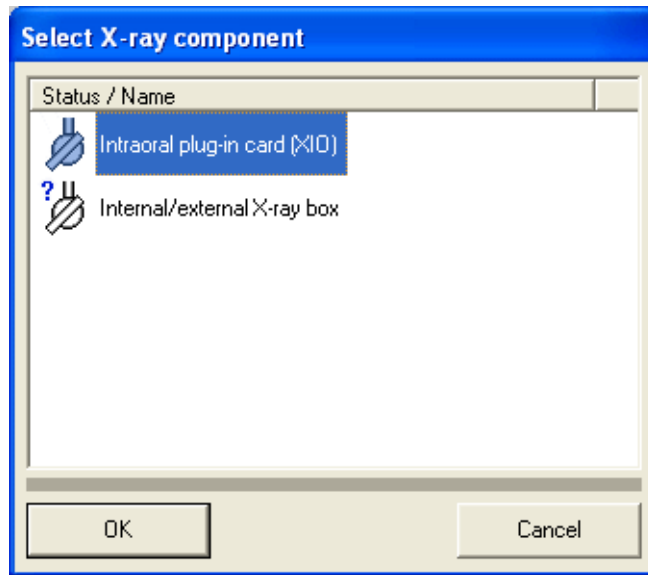
A corresponding message appears on the status bar during multiple exposures.

Operation with several intraoral X-ray units

If several X-ray units are installed and networked in a practice, then an X-ray acquisition unit must be selected before taking an intraoral X-ray exposure. This selection is made by clicking the desired unit in the “*Status / Name*” column; it will appear highlighted by a blue bar afterwards.

8 Image acquisition

Selection dialog box



Acquisition units marked with a question mark are possibly not switched on.

Acquisition units which are crossed out are possibly busy.

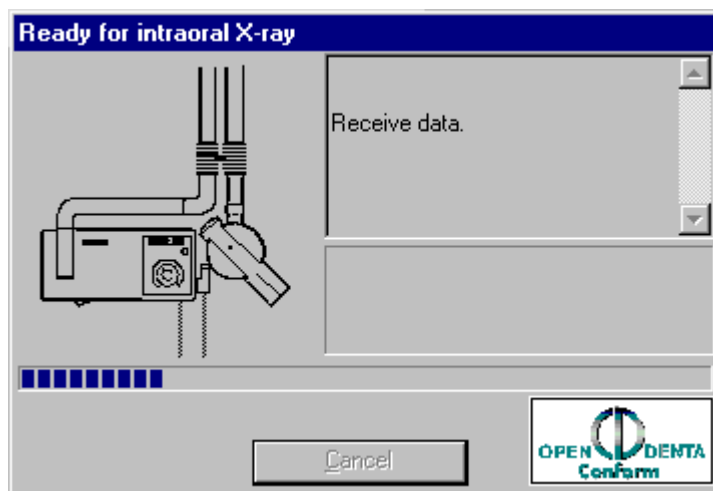
After the X-ray acquisition unit has been selected, further dialog boxes show how the connection between the acquisition unit and the calling computer is established. These dialog boxes can provide important information in case of connection errors.

Image acquisition

After the message "Waiting for X-ray radiation" appears, the X-ray unit is enabled by the computer. You can now release the exposure at the unit.

After further messages, the following dialog box which informs you about the progress of the data transfer operation finally appears. Note that the "Cancel" button is now unavailable for safety reasons.

Acquisition dialog box



Function

As long as SIDEXIS is busy with taking an intraoral X-ray exposure, a green indicator flashes as a warning below the intraoral acquisition unit symbol in the dialog box.

If the system is equipped with an X-ray box, readiness for exposure is also signaled by a permanently illuminated green LED on this X-ray box.

As long as this message is displayed on the screen and the indicator in the dialog box flashes or the green LED on the X-ray box lights up, the exposure can be taken as in conventional radiography. The X-ray sensor is then put into a ready status. Signal transmission starts as soon as the X-rays hit the sensor.



If no such ready dialog box appears, or the indicator in the dialog box does not flash, or the X-ray box LED does not light up, do not take any X-rays of the patient until the problem has been rectified.

Readiness for exposure ends when you press the “Cancel” button or the [Esc] key before any X-rays have been detected.




Information on the USB box

More information can be found in the documentation:

SIDEXIS - Intraoral Operating Instructions and Installation for USB - Box REF 59 15 702

8.3 Panoramic, Ceph and TSA X-ray exposures

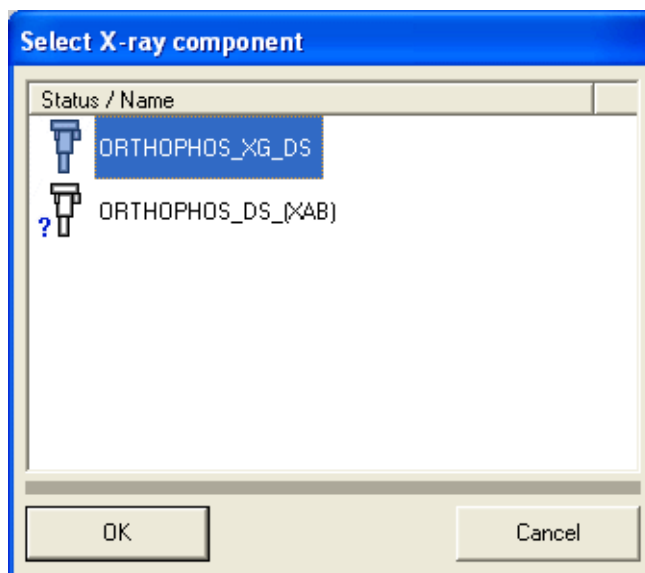
Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[Shift]+P
Activation via the menu bar	1. [I]mage 2. [P]anoramic X-Ray

Operation with several panoramic X-ray units

If several X-ray units are installed and networked in a practice, then an X-ray acquisition unit must be selected before taking a panoramic, Ceph or TSA X-ray exposure. This selection is made by clicking the desired unit in the *Status / Name* column; it will appear highlighted by a blue bar afterwards.

Selection dialog box



Acquisition units marked with a question mark are possibly not switched on.

Acquisition units which are crossed out are possibly busy.

After the X-ray acquisition unit has been selected, further dialog boxes show how the connection between the acquisition unit and the calling computer is established. These dialog boxes can provide important information in case of connection errors.

Image acquisition

After the message "Waiting for X-ray radiation" appears, the X-ray unit is enabled by the computer. You can now release the exposure at the unit.

After further messages the following dialog box which informs you about the progress of the data transfer operation finally appears. Note that the “Cancel” button is now unavailable for safety reasons.

Different X-ray exposures are automatically recognized and differentiated by the system.

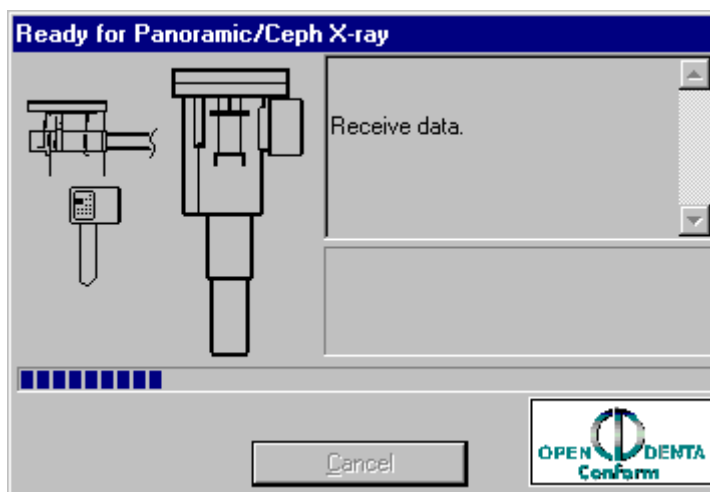
As long as SIDEXIS is busy with taking an X-ray exposure, a green indicator flashes as a warning in the acquisition dialog box.



If no such ready dialog box appears, or the indicator in the dialog box does not flash, it is not possible to release radiation on the ORTHOPHOS until the problem has been rectified.

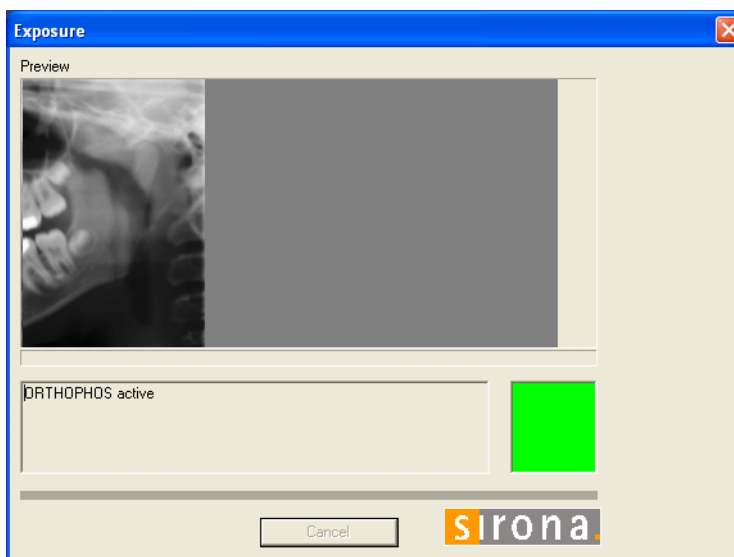
Readiness for exposure ends when you press the “Cancel” button or the [Esc] key. Once the exposure has been started, it can only be stopped via the ORTHOPHOS.

Acquisition dialog box for ORTHOPHOS DS units



8 Image acquisition

Acquisition dialog box for ORTHOPHOS XG DS units



While the X-ray data is being transferred for ORTHOPHOS XG DS units, a preview image of the X-ray exposure is formed in the acquisition dialog box.

8.4 Video exposure

Explanation

The integration of video exposures in a SIDEXIS XG "exam" is described in this section

Function

As a rule, the live video image of the SIROCAM is activated by removing the camera from its holder. Then you can freeze (still image) the displayed live image or take the actual video exposure with the help of the foot switch. If an extraoral full-face video camera is connected in addition, then actuating the foot switch while the SIROCAM is in its holder activates an extraoral live image.

In systems equipped with both a SIROCAM and an extraoral video camera, all relevant commands refer to the SIROCAM as long as it is removed from its holder. When the SIROCAM is in its holder, then the extraoral camera has priority. However, you can also switch between the two cameras in the context menu of an active video image.

In addition to this method of taking exposures by foot switch control, there is also a number of control options available in the software user interface which are described below:

8.4.1 Starting a live video image (SIROCAM)**Direct activation of the function**

Activation options	
Hardware activation	Remove the SIROCAM from its holder


The live video image starts



If necessary, switch to the SIROCAM in the context menu of the video image.

Indirect activation of the function

It is also possible to start open an empty video window first.

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[Shift]+V
Activation via the menu bar	<ol style="list-style-type: none"> 1. [I]mage 2. [V]ideo

An empty white window appears.

3. Now remove the SIROCAM from its holder

The live video image starts

8.4.2 Starting a live video image (extraoral full-face camera)

Activating the function

Activation options	
Activation via the menu bar while the SIROCAM is in its holder	<ol style="list-style-type: none"> 1. [I]mage 2. [V]ideo

The live video image starts



If necessary switch to the full-face camera in the context menu of the video image.

8.4.3 Video stop (live video image ⇌ still image)

Activating the function

Activation options	
Activation via the context menu of the image	1. Video start/stop
Activation via hotkey	[Enter]
Hardware activation	Briefly actuate the foot switch (freezing takes place when you release the switch)

8.4.4 Video start (still image ⇌ live video image)

Activating the function

Activation options	
Activation via the context menu of the image	1. Video start/stop
Activation via hotkey	[Enter]
Hardware activation	Briefly actuate the foot switch

8.4.5 Taking the exposure (video still image ⇌ save)

Explanation

There are several possibilities depending on the type of system or the treatment center in which the SIROCAM is integrated.

Activating the function

Activation options	
Activation via hotkey	<p>[Ctrl]+[S]</p> <p>The current still image is digitized and a new live image is produced.</p> <p>The digitized video image is not saved automatically.</p>
Only for: <ul style="list-style-type: none"> - SIROCAM 2 - SIVISION 1 - SIROCAM Box - SIVISION 3 Compact - SIVISION 3 on C6, C8 or ProFeel - SIVISION 3 with camera in the assistant element 	<p>■ Press foot switch for approx. 2 seconds.</p> <p>In this case the current still image is saved automatically after digitization.</p> <p>A new live image is produced after saving.</p>
Only for: <ul style="list-style-type: none"> - SIVISION 2 - SIVISION 3 with SIROCAM in the dentist element 	<p>Activate the corresponding function on the treatment center.</p> <p>Usually, this is the S key with the “C+” foot switch, or the “C” foot switch to the left.</p> <p>More details can be found in the operating instructions of your treatment center.</p>

8.4.6 Canceling the exposure and closing the video image

Activating the function

Activation options	
In the live image mode only with SIROCAM	Return SIROCAM to its holder.
Activation via hotkey (Live video image and Video still image).	[Del]



Unlike X-rays and video exposures, live video images cannot be scaled. Please note that on low resolution monitors (800x600 pixels and below) the live video image will be clipped at the screen margins.

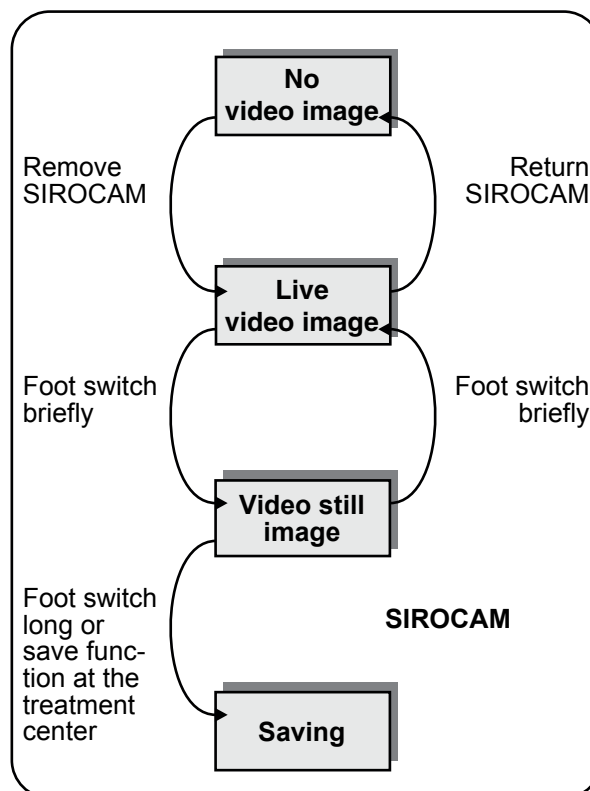
8.4.7 Overview

The following illustrations provide a further overview of the relationships:

SIROCAM

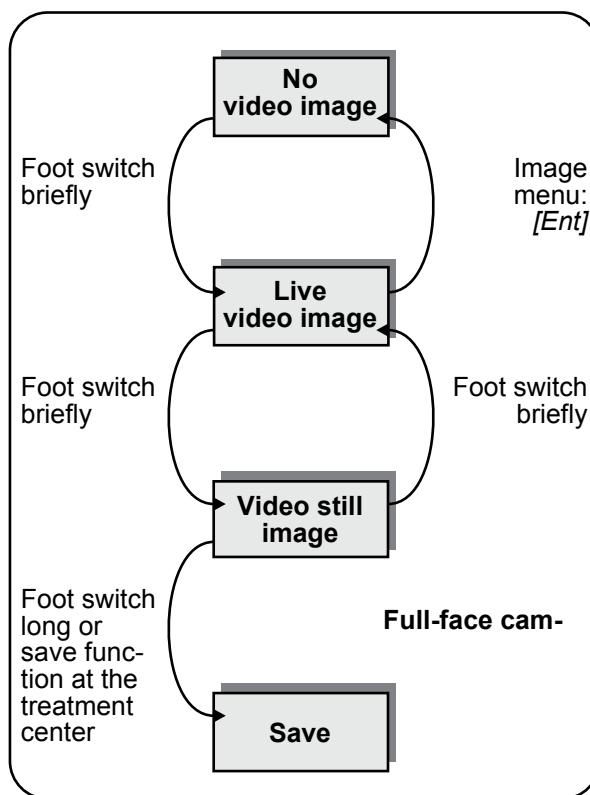
After the SIROCAM has been removed from its holder it has priority over an additionally connected extraoral full-face camera.

However, you can switch to the extraoral camera in the context menu of the active live video image (right-click to open context menu).



Full-face camera

After the SIROCAM has been removed from its holder it has priority over an additionally connected extraoral full-face camera. However, you can switch to the extraoral camera in the context menu of the active live video image (right-click to open context menu).



9 Analysis tools

Explanation

Analysis tools help to make the interpretation of X-ray and video exposures easier.

Tool types

The following groups of analysis tools are available:	Page
Measurement tools	141
Display tools	151
Image filters	167

Other

Other analysis tool functions:	Page
Selecting objects in the workspace	138
Restoring the original image	139

9.1 Selecting objects in the workspace

Explanation


The standard mouse pointer is used for selecting objects in the workspace.

It has the shape of an arrow.

Validity

All objects in the workspace

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [A]nalysis2. [S]elect

Function

There are several ways to select objects in the workspace.

Single selection:

1. Place the standard mouse pointer above the desired object.
2. Select the object by left-clicking it.

Multiple selection:

1. Press and hold the [Shift] and the [Ctrl] keys.
2. Place the standard mouse pointer above the desired objects and select them by left-clicking.
3. Release the [Shift] and the [Ctrl] key again.

Area selection:

1. While pressing and holding down the left mouse button, draw a selection frame around the desired objects.
2. Release the left mouse button again.

9.2 Restoring the original image

Explanation

The *Starting image* function allows you to discard all previously made changes and to return to the original view in any stage of processing. This command refers to all image manipulations including the image filters as well as to the position of the images within the workspace.




Any objects placed in the image will be discarded.

Validity

This function can be used for X-ray and video images (but not for live and still images).

As this function recurs to saved original images, it cannot be used for images that have not been saved yet.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[Y]
Activation via context menu	1. Starting image
Activation via the menu bar	1. [A]nalysis 2. [S]tarting image



For safety reasons, a message prompting you to re-confirm the command is displayed before the changes are undone.

10 Measurement tools

Subdivision

SIDEXIS XG has the following measurement tools:	Page
Measuring lengths	142
- Correcting the results of a length measurement	144
Measuring an angle	146
Measuring the bone density	148
Displaying the density profile	149

10.1 Measuring lengths

Explanation

The purpose of this function is to determine dimensions, distances or size ratios of the objects in the X-ray image. It is also possible to measure curved lines by setting interpolation points.



"Always use a reference object as a reference for length measurements, intraoral exposures and ORTHOPHOS exposures!" See section "Correcting the results of a length measurement" on page 144.



The indicated lengths are relative values.

They depend on the dimensions of the sensors used for acquiring the images.

This also applies to imported images.



Measurement results on imported images may, and on video exposures will, only appear as pixel values if the imported data does not contain the necessary information for the exact determination of the length.


This may be the case, for instance, with exposures which were not taken with SIDEXIS.

The display can, however, be switched to millimeters via the "Adapt measurement" function (See page 144) .

Validity

This function can be used for X-ray and video images (but not for live and still images).

Activating the measurement tool

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Measure [L]ength

Simple linear measurement

1. Determine the starting point with the mouse pointer.
2. Confirm the starting point by clicking the left mouse button.
3. Drag the mouse pointer to the desired end point.

Both points are connected by a line.

4. Confirm the measured length by double-clicking the left mouse button.

Measuring the length across several interpolation points

1. Determine the starting point with the mouse pointer.
2. Confirm the starting point by clicking the left mouse button.
3. Drag the mouse pointer to the desired first interpolation point.
4. Confirm this interpolation point by clicking the left mouse button.
5. Repeat steps 3. and 4. until you have reached the desired end point.
The length that has just been measured is then extended segment by segment.
6. Confirm the measured length by double-clicking the left mouse button.

Indication of the measured value

The length between starting point and end point is displayed next to the connection line as well as on the status bar at the bottom of the program window.

The total length is displayed on the status bar and next to the last line segment.

The display next to the line segment is highlighted with a colored bar and can be moved freely within the workspace.

At the same time, the measuring section remains connected to the measured value by a broken line.

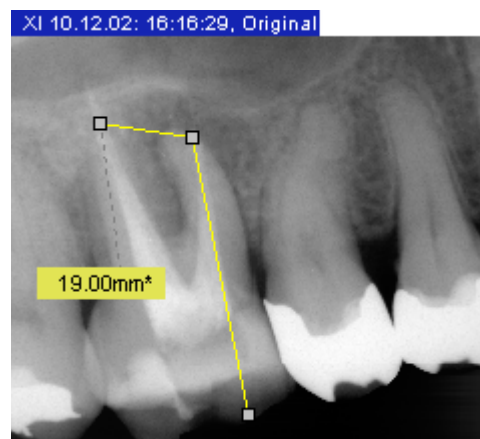


If several length measurements are displayed simultaneously, the status bar always shows the result of the individually selected length measurement. By switching between the active length measurements, you can compare the values.

Saving a measurement

Length measurements can be saved either within a view or within an exam.

Example screen



10.2 Correcting the results of a length measurement

Explanation

If the image sensor is not aligned exactly orthogonal to the tube assembly during an intraoral exposure, but is slightly inclined, then the measured distances are too large. A projection correction is provided for this case.



A correction entered by the user remains active as long as the respective image is open. Correction values are not saved; they are therefore lost as soon as the image is closed.



If several images are displayed, then the correction refers only to the active image in which the correction was made.


Validity

This function can only be selected if at least one length measurement is already available.



The correction values are sufficiently accurate only in the vicinity of the reference value, because the angle of the sensor in relation to the tooth may be different in other image areas.

Activating the measurement tool

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Adapt [m]easurement

Correcting the length measurement

1. First measure a known reference length (e.g. a root canal file with defined length) on the image.
2. Open the “Adapt measurement” dialog box.

The previously measured value appears as “Uncalibrated length” in the dialog box.

3. Enter the actual value as correction value in the “Calculated length” text box.

You can adjust this value in 0,1 mm steps using the two arrow keys.

SIDEXIS XG displays the calculated correction factor.

4. Close the dialog box by clicking the “OK” button.

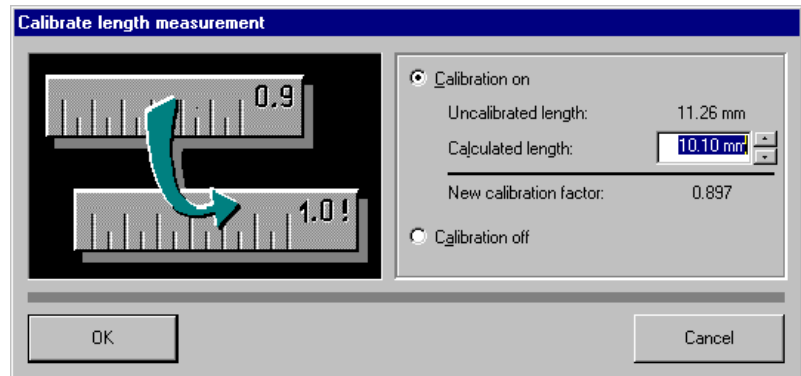
For all subsequent length measurements in this image the calculated correction factor is used.

To make the user aware of the activated correction factor, all measured values receive the label “ref.” on the status bar and in the image.

Deactivating the correction

If you want to make further measurements without length correction, then open the “Adapt measurement” dialog box once again and activate the “Calibration off” option button. Then close the dialog box by clicking the “OK” button.

Example



“Uncalibrated length” = 11.26 mm

“Calculated length” = 10.10 mm

“New calibration factor” = 0.897

All subsequent measurements in the same image are multiplied by 0.897.

10.3 Measuring an angle

Explanation

SIDEXIS XG also provides a function for the simple determination of angular relationships.



The indicated angles are relative values.

They depend on the dimensions of the sensors used for acquiring the images.


This also applies to imported images.

Validity

This function can be used for X-ray and video images (but not for live and still images).

For imported images square pixels are assumed for determining angles if the corresponding information could not be detected during import.

Activating the measurement tool

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Measure [a]ngle

Handling

Angle measurements are handled similarly to length measurements.

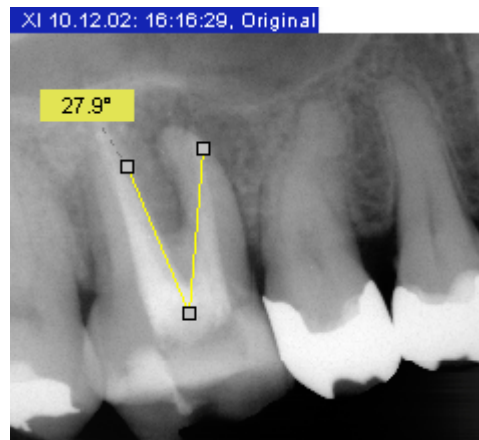
1. Position the mouse pointer on the spot where you want to place the apex of the angle.
2. Confirm this position by clicking the left mouse button.
3. Draw the first leg of the angle using the mouse pointer.
4. Confirm this position by clicking the left mouse button.
5. Draw the second leg of the angle by dragging the mouse pointer. Here it is possible to measure to the left or to the right.
6. Confirm this position by clicking the left mouse button.

Angles of up to 180° can be measured. The angle is displayed between the two legs as well as on the status bar at the bottom of the window.

The angle measurement in the image is highlighted with a colored bar and can be moved freely within the workspace.

At the same time, the angle measurement remains connected to the legs of the angle by a broken line.

Example screen



10.4 Measuring the bone density

Explanation

This function enables a relative measurement of the bone density. An absolute measurement is not possible because of the lack of calibration.

However, bone density measurements can be used to confirm or reject findings more easily by quantitative statements.



The indicated densities are relative values.

They depend on the dimensions of the sensors used for acquiring the images.

This also applies to imported images.


Application examples

- Decision on the existence of caries/periodontosis on the side of the teeth
- Decision on the progress of caries/periodontosis
- Apex detection in root treatment
- Localization of inflammations
- Decision whether the inflammation is clearing up or getting worse
- Decision on bone mass build-up/reduction on implants

Validity

This measurement tool works only with X-ray exposures.

Activating the measurement tool

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. [M]easure density profile

Operation

1. Determine the starting point with the mouse pointer.
2. Confirm the starting point by clicking the left mouse button.
3. Drag the mouse pointer to the desired end point.
The current density is displayed as a percentage value next to the cursor.
4. Confirm the end point by double-clicking the left mouse button.
The "Display density profile" dialog box opens.

10.5 Displaying the density profile

Explanation

After determining a measuring section with the help of the “Measure density profile” function in the active image, this function can be used to display the density along this measuring section.



No filters such as e.g. Relief may be used before performing the measurement.

Validity


This display works only for density profile measuring sections.

Opening the display dialog box

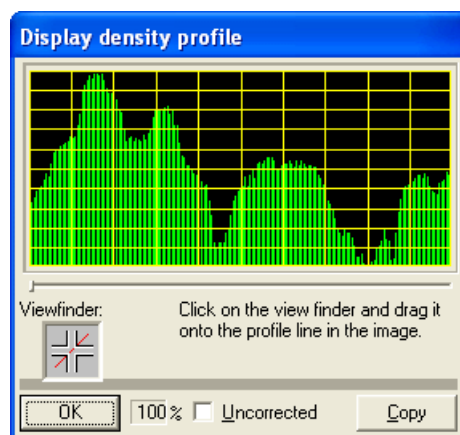
The dialog box opens when you select the “Properties” function.



The measuring section to be displayed must be selected. The smoothing filter may be used, provided that it acts on the entire measuring section.

Activation options	
Activation via hotkey	[Alt]+[Enter]
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. [P]roperties...

Elements of the display dialog box



The length of the green bars represents the relative density.

Bright image areas generate correspondingly long bars, whereas dark image areas generate short bars.

The chart is spread out when it is produced by assigning the value 0 to the lowest density and the maximum bar length to the highest density.

This spreading can be deactivated by clicking the “Uncorrected” check box.

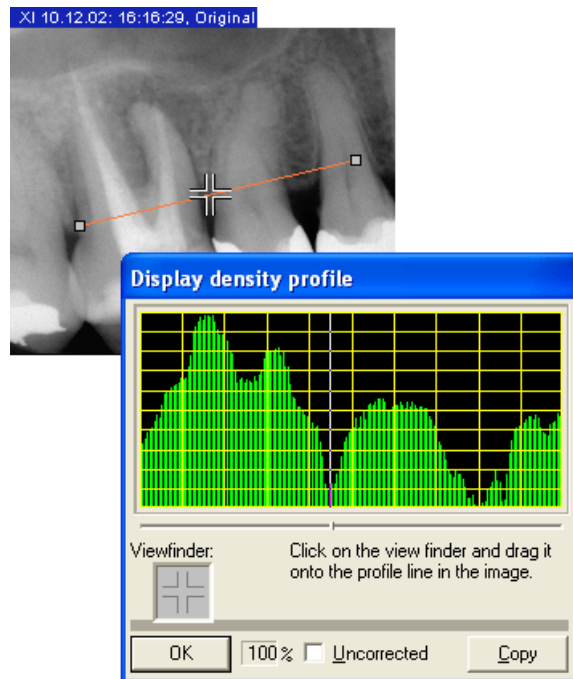
Function of the “Copy” button

The values displayed in the profile can be copied as uncorrected numerical values (0 to 255) to the Windows clipboard with this button.

This feature enables the user to perform an evaluation in other programs.

Function of the “Viewfinder:”

With the viewfinder in the “Display density profile” dialog box, you can establish a clear relationship between the measuring positions and the chart.



1. Place the mouse pointer over the viewfinder.
2. Drag the viewfinder icon – while pressing and holding down the mouse button – from the profile display to the measuring section.

The current position within the measuring section is indicated by a white line in the profile chart and a small slider below the profile chart.

The relative bone density value at this position appears in the box next to the “OK” button.

11 Display tools

Overview

SIDEXIS XG has the following display tools:	Page
Zooming the image	152
Panning	154
Viewport	155
Tile	157
Overview	158
Status arrangement	159
Cascade	160
Full Frame mode	161
Magnifier	162
Rotate	163
Jump to next image via hotkey	165

11.1 Zooming the image

Explanation

The zoom function can be used to change the display scale of the active image.



A distinction must be made here between two different types of zoom.



- Basic zooming where the entire image is magnified or reduced in size.
In this case, the display size of the image changes.
- Zooming in which only the detail view changes.
The display size of the image remains intact here.

Validity

This function can be used for X-ray and video images (but not for live and still images).

Activating the function

Activation options	Enlarge	Reducing
Activation by clicking the button		
Activation via hotkey	[+]	[-]
Activation via context menu	1. Enlarging	1. Reducing
Activation via the menu bar	1. [V]iew 2. [I]mage 3. [Z]oom 4. [E]nlarging	1. [V]iew 2. [I]mage 3. [Z]oom 4. [R]educing

Activation options	More details	Less details
Activation by clicking the button		
Activation via hotkey	[Ctrl][+]	[Ctrl][-]
Activation via the available mouse scroll wheel	Roll the scroll wheel forward.	Roll the scroll wheel back.
Activation via the menu bar	1. [V]iew 2. [I]mage 3. [Z]oom 4. More details	1. [V]iew 2. [I]mage 3. [Z]oom 4. Less details

Function

Each time you activate a zoom function, the display scale is increased or decreased by one step.

When combined with the “Viewport” function, the selected zoom factor is indicated (see section “Viewport” on page 161).

11.2 Panning

Explanation

If the image to be displayed is larger than the available window (e.g. at a zoom factor larger than 1:1), then you can pan around the image (thus displaying another image detail) either in horizontal or vertical direction using the scroll bars.

The so-called Hand mode is a simple and intuitive method for panning around the image simultaneously in horizontal and vertical direction.




If the image to be displayed is larger than the available window in the Full Frame mode, the Hand mode is automatically activated.

Validity

This function can be used for X-ray and video images (but not for live and still images) if only a partial image is visible.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+double-click with left mouse button
Activation via the menu bar	1. [A]nalysis 2. [H]and

Indication of the active status

As long as this function is active, the mouse pointer has another shape.



Operation

After left-clicking into the image window, you can pan around the image by dragging the mouse in the desired direction.

11.3 Viewport

Explanation

A further tool is available for viewing images which cannot be displayed on the workspace in their entirety due to their size or the selected zoom factor.


- This tool is referred to as “Viewport”.
- With the help of the “Viewport” tool, different image details can be positioned and displayed easily and quickly.
- The “Viewport” tool shows clearly which image detail is currently on display and furthermore allows intuitive movement of this image detail in two dimensions.
- The zoom factor of the image detail is indicated.

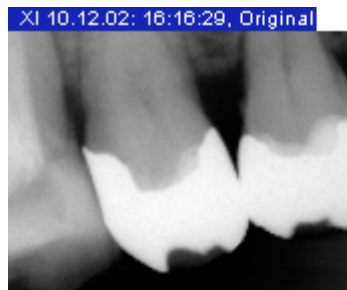
It thus represents an alternative to positioning with the help of the scroll bars, the keyboard and the “Panning” function.

Validity

This function can be used for X-ray and video images (but not for live and still images).

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [V]iewport

Display

An additional window is displayed in the workspace for this function. This so-called “Viewport” shows a small copy of the complete active image.

If you switch to another image or change the image dimensions (e.g. by rotation), the “Viewport” also changes accordingly.

A red frame within the “Viewport” window shows which image area is displayed in the image window.

The zoom factor of the image detail is indicated in the lower right corner of the “Viewport” window.

Operation via the Viewport window

1. Place the mouse pointer within the red frame.
2. Press the left mouse button.
3. Move the mouse.

The red frame follows the mouse pointer movement.

4. Release the left mouse button when you have reached the desired area.

The new image detail is now displayed in the related image window.

Operation via the Hand mode

The image detail can be moved in the Hand mode (See section "Panning" on page 154).

Additional context menu

A context menu is available as an additional aid in the “Viewport” mode. It can be used to position the displayed image detail in the four image quadrants or in the center of the image.

Depending on the zoom factor and size of the image window, this creates partial images which overlap to varying degrees. Furthermore, you can use the context menu to jump back and forth between the current and last position (e.g. to compare sides).

11.4 Tile

Explanation


If several image windows are open simultaneously in the SIDEXIS workspace, some image information may be hidden due to mutual overlapping.

The *Tile* function arranges all open windows in the available workspace so that there is no overlap. Under certain circumstances this may lead to a reduction of the window sizes.

Validity

This function can be used for X-ray and video images (but not for live and still images).

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [I]mage 3. [A]rrange 4. [T]ile

11.5 Overview

Explanation


Functions like *Tile* .

Additionally, the zoom is adapted in such a way that no scroll bars are displayed, if possible. The scroll bars are displayed only if the minimum zoom factor has been reached. This will fully show all loaded images in the form of an overview.

Validity

This function can be used for X-ray and video images (but not for live and still images).

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [V]iew2. [I]mage3. [A]rrange4. [O]verview

11.6 Status arrangement

Explanation


In contrast to the *Tile* function, the open image windows are arranged by this command corresponding to their anatomical position. In the arrangement, account is taken both of intraoral X-rays and of video exposures in which the number of the displayed tooth has been stated. Intraoral exposures without a clear assignment and all other image types are displayed in the center of the workspace. The zoom of all windows is adapted so that the complete exposure is visible.

If several windows appear at the same position when arranging the intraoral X-rays, then these are cascaded with an offset of one frame width. You can bring an image window hidden in the background to the foreground by clicking its frame.

Validity

This function can be used for X-ray and video images (but not for live and still images).

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [I]mage 3. [A]rrange 4. [S]tatus arrange-ment

Example screen



11.7 Cascade

Explanation

This window function is the opposite of the *Tile* function.


The open windows are arranged so that they overlap in the form of a cascade.

- All window titles are visible in this case.
- Here, too, the window size can be adjusted accordingly.
- Simply click into a window to activate it and bring it into the foreground.

Validity

This function can be used for X-ray and video images (but not for live and still images).

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [V]iew2. [I]mage3. [A]rrange4. [C]ascade

11.8 Full Frame mode


Explanation

The active image window is enlarged so as to fill the entire available workspace.


Validity

This function can be used for X-ray and video images (but not for live and still images).

Activating the function

Activation options	
Activation by double-clicking the image	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [I]mage 3. [M]aximize

Terminating the function

Activation options	
Activation by double-clicking the image	
Activation via hotkey	[Esc]
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [I]mage 3. [R]estore

Additional information

- The image cannot be moved in the Full Frame mode.
- If only one image detail is displayed, the Hand mode is automatically activated (See section "Panning" on page 154).
- If the image is rotated in the Full Frame mode, this will be accepted following switch-over to the Normal mode.

11.9 Magnifier


Explanation

Individual image details can be magnified with this function.

Validity

This function can be used for X-ray and video images (but not for live and still images).

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [V]iew2. [M]agnifier

After activating this function, the magnifier window appears in the top right corner of the exam workspace.

Operation

1. Place the mouse pointer within the magnifier window.
2. Drag the mouse pointer outside the magnifier window while pressing and holding down the left mouse button.

A selection frame appears. The corresponding image detail is displayed in the magnifier window with the selected zoom factor.

3. Once you have found the desired image detail, release the left mouse button.

The selection frame disappears.

The last contents of the selection frame are now displayed in the magnifier window.

As long as the magnifier window is active, you can repeat the magnifier function from step 1 onwards as often as desired.

Moving the magnifier window

The magnifier window can be moved to any position within the image by clicking into the title bar and dragging it while holding down the left mouse button.

Changing the zoom factor

The zoom factor can be set between 1:1 and 8:1 by means of the slider at the bottom. The zoom factor is displayed in the title bar of the magnifier window, e.g. "Magnifier 3:1".

Deactivating the magnifier

The magnifier is automatically deactivated as soon as another function is activated.


The magnifier function can be deactivated manually by left-clicking outside the magnifier window or by pressing any key on the keyboard.

11.10 Rotate


Explanation

With this function, the image is turned in the selected direction. The image can be turned step by step or restored to its original position by selecting the function several times.


Turn by 90 degrees to the right

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl+[R]
Activation via context menu	1. Turn to right
Activation via the menu bar	1. [V]iew 2. [I]mage 3. R[o]tate 4. Turn to [r]ight

Turn by 90 degrees to the left

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl+[L]
Activation via context menu	1. Turn to left
Activation via the menu bar	1. [V]iew 2. [I]mage 3. R[o]tate 4. Turn to [l]eft

Turn by 180 degrees

Activation options	
Activation by clicking the button	
Activation via the menu bar	1. [V]iew 2. [I]mage 3. R[o]tate 4. Turn by [1]80°

11 Display tools

Example screens

XI 10.12.02: 16:16:29, Original



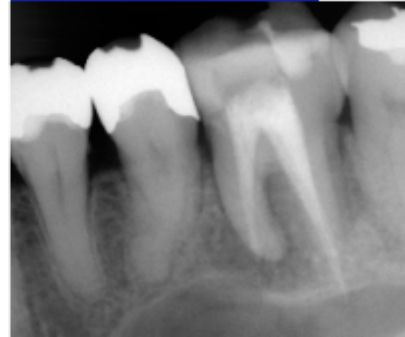
XI 10.12.02: 16:16:29, Original



XI 10.12.02: 16:16:29, Original



XI 10.12.02: 16:16:29, Original



11.11 Jump to next image via hotkey

Explanation

If an exam with multiple images is open, you can activate the next image with [Ctrl+[Tab].

Enhances operating comfort, especially in the Full Frame mode.

Activating the function

Activation options	
Activation via hotkey	[Ctrl+[Tab]

12 Image filters

SIDEXIS XG offers a powerful and extensive collection of image processing functions for preparing, interpreting and analysing image information. The processing functions discussed below always refer to the active image.

Overview

SIDEXIS XG provides the following image filters:	Page
Brightness and contrast adjustment	169
Mouse adjuster for setting brightness and contrast	171
Determining the region of interest for image filters	172
Brightness/contrast adjustment in the region of interest	174
Applying the brightness/contrast settings	175
Invert	176
Color	177
Contrast optimization	178
Smoothing	179
Sharpen Plus	180
Sharpen Plus variable	181
Filtering black dots	182
Noise reduction (Median)	183
Relief display	184
Undoing the last filter operation	185
Torch functions	186
Transfer function	188

Basics

A few principles and associated terminology must be explained here to help you to understand the possibilities of image information processing.

The digital data of the X-ray sensor and video camera are processed in the computer into displayable image information. The smallest information element is the so-called pixel, derived from the term “picture element”. The captured image is broken down into individual scanning points or pixels which are stored in the memory of the computer as numerical code. Each scanning point (pixel) is assigned a value which corresponds to the gray or color value of the small image area captured.

Since the image is now available in the computer as a series of clearly defined numerical values, the image information can be processed by selectively changing the values. The image processing results are displayed on the screen as screen pixels or on the print-out as print pixels.

Since a large number of single pixels must be defined individually as numerical values in each image, image files are very large. Computers with large working memory (for processing) and large mass memory (for storage) are necessary to manage these data volumes.

Depending on the nature of the pixel changes and the quantity of pixels to be changed, image data processing can take a certain amount of time.



For the above reasons, the number of simultaneously open images should be limited. A large number of open images reduces the overall system performance and increases the processing times. Large images have a stronger impact than small ones. Images which are no longer required should therefore be closed.

12.1 Brightness and contrast adjustment

Explanation

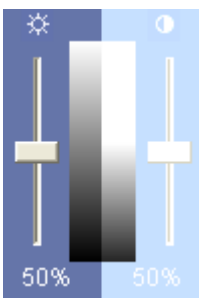
To accentuate or delineate image details better or to enhance the image quality it is possible to adjust the brightness and contrast of the display.

Validity

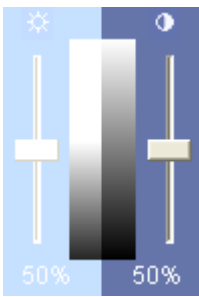
This function can be used for X-ray and video images (but not for live and still images).

The adjustment function refers to the selected image and can be activated at any time.

Adjusting the brightness

Activation options	
Brightness adjustment using the left slider	
Activation via hotkey	[Arrow up] = brighter [Arrow down] = darker

Adjusting the contrast

Activation options	
Contrast adjustment using the right slider	
Activation via hotkey	[Arrow right] = Less contrast [Arrow left] = More contrast

Display

The intensity of the adjustment is reflected in the grayscale area between the two sliders.

The respective brightness or contrast changes are indicated below the sliders, proceeding from a basic value of 50%.

Operation

1. Place the mouse pointer on the control button of the desired slider.
2. Press and hold down the left mouse button.


12 Image filters

3. Move the control button upward or downward by dragging it with the mouse.

The selected image changes simultaneously with the slider settings.

4. Release the left mouse button when the display settings correspond to your wishes.

Reset values

Activation options	
Reset the values (50%) by clicking the symbols above the sliders	

12.2 Mouse adjuster for setting brightness and contrast

Explanation


The so-called mouse adjuster offers a simple and elegant way of adjusting brightness and contrast. It enables you to adjust brightness and contrast simultaneously.

Validity

This function can be used for X-ray and video images (but not for live and still images).

The adjustment refers to the selected image.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[Shift]+M
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. [M]ouse adjuster

Display of the function

As long as this function is active, the mouse pointer in the exam workspace has another shape.



Operation

1. In the exam workspace, press and hold down the left mouse button.
2. Move the mouse as desired.
 - Move it vertically to change the brightness.
 - Move it horizontally to change the contrast.

The changed values can be observed immediately in the related read-only boxes, the grayscale area and the sliders.

3. Release the left mouse button when the display settings correspond to your wishes.

You can repeat the adjustment as often as you like from step 1 onwards as long as the mouse adjuster is active.

12.3 Determining the region of interest for image filters

Explanation

The image processing functions and commands usually affect the entire image. However, it is possible to apply them (especially the group of filter functions and the brightness and contrast settings) selectively to certain regions of the image.

By limiting the image region to be manipulated, the filter operation can be processed more quickly and different details can be processed in a different way.


Validity

This function can be used for X-ray and video images (but not for live and still images).

When you select a so-called region of interest, the subsequent filter operations refer exclusively to this defined image region. The filter acts only in the selected region of interest.

A region of interest remains active until it is either removed or replaced by a new region.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [A]nalysis2. [D]efine ROI

Display of the function

As long as this function is active, the mouse pointer has another shape.



Defining the region of interest

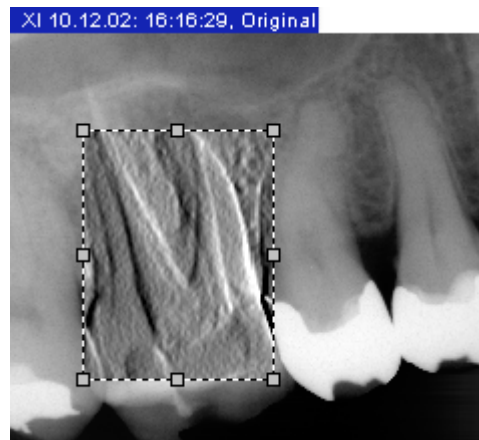
1. Place the mouse pointer at a corner of the desired region of interest.
2. While pressing and holding down the left mouse button, draw a frame around the desired region of interest.

While you are drawing the rectangle, its size is indicated within the selection and on the status bar at the bottom of the window.

3. Release the left mouse button.

The selected region of interest is displayed within a dashed frame.

Example screen



Shifting the region of interest

With the mouse pointer placed inside the region of interest, press and hold down the left mouse button and drag the region to the desired position.

Removing a region of interest

1. Place the mouse pointer in the region of interest.
2. Press the right mouse button.
3. Click *Remove*.

The region of interest is removed from the image.

12.4 Brightness/contrast adjustment in the region of interest

Explanation


The brightness and contrast adjustment for regions of interest works differently from that for filters.

- Brightness and contrast in a region of interest can only be adjusted when the “Only in the analysis range” function is activated.
- The brightness and contrast settings are permanently applied to a region of interest only after selecting the “Apply” function (See section “Applying the brightness/contrast settings” on page 175).

Validity

X-ray and video images (not live and still images) in the region of interest.

Activating the filter

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. [B]rightness/contrast control 3. [O]nly in the analysis range



If the “Only in the analysis range” function is not activated, the chosen brightness and contrast settings are applied to the entire image.

Example

1. Activate the “Define ROI” function in the “Analysis” menu.
2. Then choose the “Only in the analysis range” command from the “Brightness/contrast control” submenu in the “Analysis” menu,.
3. Define a region of interest in the desired X-ray image with the help of the mouse; note the different mouse pointer shape.

Now the region of interest can be modified using the brightness and contrast controls.

After adjusting the brightness and contrast, the chosen settings are applied with the “Apply” command.

12.5 Applying the brightness/contrast settings


Explanation

The “Apply” function is used to permanently apply the chosen brightness and contrast settings in the region of interest.

Validity

X-ray and video images (not live and still images)

Activating the filter

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. [B]rightness/contrast control 3. [A]pply

12.6 Invert

Explanation

The *Invert* function inverts the brightness values of the image pixels. The brightness and contrast values are adjusted accordingly during this process. A positive or negative view of the X-ray is obtained in this way.




The action can be undone by re-activating the function.

Validity

This filter works only with X-ray exposures.

Activating the filter

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[I]
Activation via context menu	<ol style="list-style-type: none"> 1. Fi[l]ter 2. [I]nvert
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Fi[l]ter 3. [I]nvert

Example screen



12.7 Color

Explanation

To enable better distinction of image details, the image can be displayed in a so-called pseudo-color mode. The grayscale values of the image are replaced by colors which the human eye can distinguish better from one another than the corresponding gray levels.


Impact of brightness and contrast adjustment

The color display can be influenced by adjusting brightness and contrast. The image processing functions can also be used in pseudo-color mode.

Validity

This filter works only with X-ray exposures.

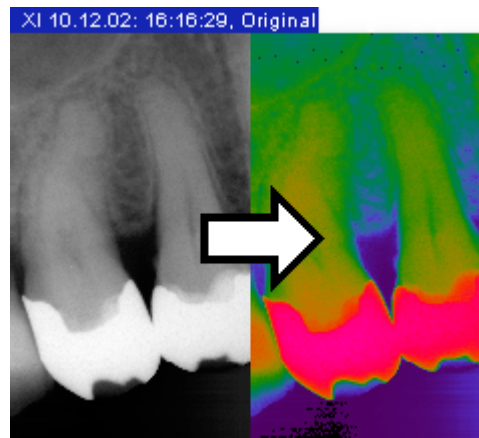
Activating the filter

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[F]
Activation via context menu	<ol style="list-style-type: none"> 1. Fi[lter] 2. [C]olor
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Fi[lter] 3. [C]olor



The action can be undone by re-activating the function.

Example screen



12.8 Contrast optimization

Explanation

This image filter analyses the current grayscale distribution of an image and optimizes them using a non-linear statistical method.

Recommended use

Use of this function is particularly recommended for images whose contrast distribution does not make full use of the available grayscale value range.




The contrast optimization filter may furnish different grayscales in the filtered image for identical brightness values in the original image, because the relevant local environment is evaluated for optimization.

Validity

This filter works only with X-ray exposures.

Activating the filter

Activation options	
Activation by clicking the button	
Activation via context menu	<ol style="list-style-type: none"> 1. Fi[l]ter 2. [O]ptimize contrast
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Fi[l]ter 3. [O]ptimize contrast

Example

In this way, for instance, details within a very low-contrast, “faint” image can be made visible.

Example screen



12.9 Smoothing

Explanation

The *Smooth down* filter serves for softening very high-contrast or noisy images.

This is done by reducing or averaging the contrast of adjacent pixels. Contrary to the *Sharpen Plus* filter described later, sharp edges are softened here. A soft image impression is created. The overall definition of the image is reduced.




The effects of the Smooth down and Sharpen Plus filters do not nullify each other.

Validity

This filter works only with X-ray exposures.

Activating the filter

Activation options	
Activation by clicking the button	
Activation via context menu	<ol style="list-style-type: none"> 1. Fi[l]ter 2. Smooth [d]own
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Fi[l]ter 3. Smooth [d]own

Example screen



12.10 Sharpen Plus

Explanation

In contrast to the Smoothing filter, the contrast of adjacent pixels is increased here.

This function helps to accentuate edges or contours. The impression of a sharper image is created.



This can have a negative influence on image quality in very noisy images.




The effects of the Smooth down and Sharpen Plus filters do not nullify each other.

Validity

This filter works only with X-ray exposures.

Activating the filter

Activation options	
Activation by clicking the button	
Activation via context menu	<ol style="list-style-type: none"> 1. Fi[l]ter 2. [S]harpen Plus
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Fi[l]ter 3. [S]harpen Plus

Example screen



12.11 Sharpen Plus variable

Explanation

- 1. The *Sharpen Plus variable...* filter offers the possibility of configuring the Sharpen Plus filter individually.




The effects of the Smooth down and Sharpen Plus filters do not nullify each other.

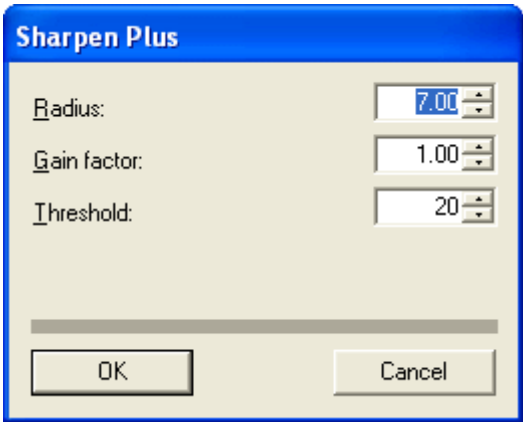
Validity

This filter works only with X-ray exposures.

Activating the filter

Activation options	
Activation by clicking the button	
Activation via context menu	<ul style="list-style-type: none">1. Fi[l]ter2. Sharpen Plus [v]ari-able...
Activation via the menu bar	<ul style="list-style-type: none">1. [A]nalysis2. Fi[l]ter3. Sharpen Plus [v]ari-able...

The configuration dialog box



Operation

- 1. Set the desired parameters.
 - 2. Confirm your settings with “OK”.
- The settings are then applied to the image.


12.12 Filtering black dots

Explanation Single pixel errors may occur when taking digital X-rays. These pixel errors appear as individual black dots when the optimum resolution (100%) is selected.

SIDEXIS XG is capable of removing these black dots by evaluating the surrounding pixels.

Validity This filter works only with X-ray exposures.

Activating the filter

Activation options	
Activation by clicking the button	
Activation via context menu	<ol style="list-style-type: none">1. Fi[l]ter2. [F]ilter black dots
Activation via the menu bar	<ol style="list-style-type: none">1. [A]nalysis2. Fi[l]ter3. [F]ilter black dots

Example screen



12.13 Noise reduction (Median)

Explanation


Single scattered pixels and minor disturbing information which lead to a noisy image can be removed with this filter without reducing the overall definition of the image.

This filter has little impact in less noisy images or images with low or “soft” contrast.

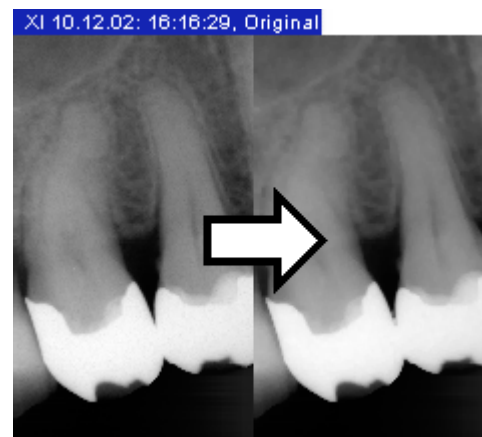
Validity

This filter works only with X-ray exposures.

Activating the filter

Activation options	
Activation by clicking the button	
Activation via context menu	<ol style="list-style-type: none"> 1. Fi[l]ter 2. Reduce [n]oise (median)
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Fi[l]ter 3. Reduce [n]oise (median)

Example screen



12.14 Relief display


Explanation

During this filter operation, the borders between high-contrast image details are analyzed and displayed lighter or darker. Thus edges or contours within the image are clearly accentuated. The result is a relief-like image distortion.

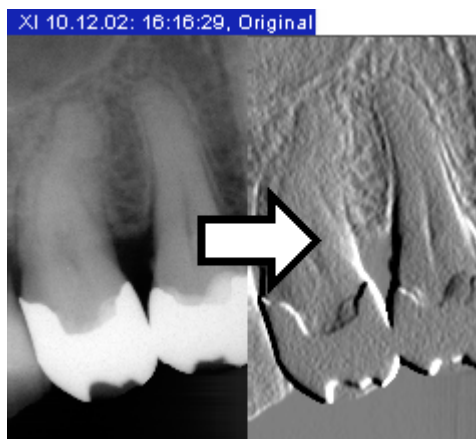
Validity

This filter works only with X-ray exposures.

Activating the filter

Activation options	
Activation by clicking the button	
Activation via context menu	<ol style="list-style-type: none"> 1. Fi[l]ter 2. Display in R[e]lief
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. Fi[l]ter 3. Display in R[e]lief

Example screen



12.15 Undoing the last filter operation

Explanation

The effect of the last filter operation can be undone by selecting the *Undo* function.


If no filter operations have been performed yet or if this function has already been applied, the command is not available.

With views that have already been heavily manipulated, this action may take some time.

Validity

This function works only with X-ray exposures.

Activating the function

Activation options	
Activation by clicking the button	
Activation via hotkey	[Ctrl]+[Z]
Activation via context menu	1. [U]ndo
Activation via the menu bar	1. [E]dit 2. [U]ndo

12.16 Torch functions




Explanation

These functions enable you to use image filters and display tools within a movable region of interest. This region of interest can be moved over the image being analyzed with the mouse like the beam of a pocket torch or flashlight.

Validity

This function works only with X-ray exposures.

Activating the function

Activation options	
Activation by clicking the button	 a. Optimize contrast  b. Invert  c. Enlarge
Activation via the menu bar	1. [A]nalysis 2. Mouse [t]ools Select the corresponding function: a. [O]ptimize contrast b. [I]nvert c. [E]nlarge

Display of the function

As long as this function is active, the mouse pointer in the exam workspace has another shape.



Function

For more information on the effects of these functions, please refer to the respective function descriptions:

- a.** Optimize contrast – see section “Contrast optimization” on page 178.
- b.** Invert – see section “Invert” on page 176.
- c.** Enlarge – see section “Zooming the image” on page 152.

ROI settings

Setting the size	<ol style="list-style-type: none"> 1. [A]nalysis 2. Mouse [t]ools <p>Select the desired size:</p> <ol style="list-style-type: none"> a. [S]mall b. [M]edium c. [L]arge d. [V]ery large
Setting the shape	<ol style="list-style-type: none"> 1. [A]nalysis 2. Mouse [t]ools <p>Select the desired shape:</p> <ol style="list-style-type: none"> a. [C]ircle b. [R]ectangle

12.17 Transfer function

Explanation

SIDEXIS XG Version 1.5 and higher can acquire and process X-ray images with a 16-bit gray scale depth.

In order to enable their display on screen, these 16-bit X-ray images are automatically converted to 8-bit gray-scale images.

This is done with a Transfer function.

This conversion is performed uniformly over the existing gray scale range of the 16-bit X-ray image.

Using the "Transfer" function described here, the conversion of each 16-bit X-ray image to an 8-bit gray scale image can be influenced individually.



The display of X-ray images with an 8-bit gray scale depth can also be usefully influenced with the "Transfer" function.

Possibilities

The following possibilities exist:

■ Windowing

During windowing, a so-called "window" is selected within the gray scale spectrum of the X-ray image.

The gray tones contained in the window are then distributed evenly over the 8-bit gray levels (256 gray tones). All values below the window appear black. All values above the window appear white.



Decreasing the size of the window increases the contrast for certain structures, thus making it possible to selectively display them in sharp relief.


■ Gamma correction

The display of the medium tones can be altered via an adjustable gamma function.

Validity

This function works only with X-ray exposures.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. Transfer

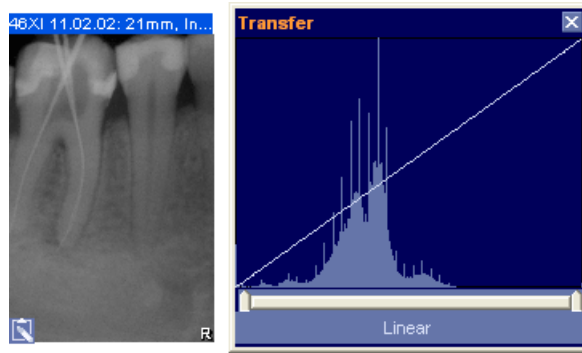
Function

The function is explained via an Operational example.

12.17.1 Operational example

Condition

The display of an X-ray image is to be improved.

Activation**Example screen**

1. Activate the X-ray image concerned.
2. Activate the "Transfer" function.

The "Transfer" window appears.

Structure

- **"Transfer" function**

The "Transfer" function is displayed here as a line above the histogram.

This line has a linear form in its basic setting.

- **Histogram**

The histogram shows a statistical distribution of all points of the active X-ray image above a linear scale from black to white.

The height of the bar above a given position on the scale indicates the number of pixels having the corresponding gray level in the image.

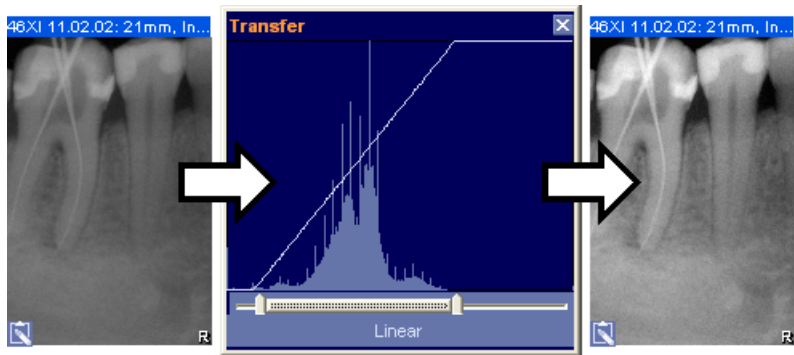
- **"Linear" function**

The "Linear" function ensures that the gray tones contained in the window are evenly distributed over the 8-bit gray levels (256 gray tones) during windowing of the "Transfer" function.

12 Image filters

Windowing (For the "Linear" function)

Example screen



The basis for achieving enhanced display of an X-ray image is to ensure that the color profile actually available in the histogram is evenly distributed over the 256 gray levels of the screen display. Furthermore, an area inside the histogram of the X-ray image must be selected via windowing.

The histogram used in the example shows no color values at the beginning of the dark area (on the left) and at the end of the bright area (on the right).

3. Use the slider in the "Transfer" window below the histogram to limit the color space to be used.

Push the slider to the location where the available histogram begins and ends.

The "Transfer" function is now linear only in the delimited area. Gray levels located outside of the delimited area are displayed as either black or white.

The display of the X-ray image (sample image on the left) has been clearly improved (sample image/right).

Changing medium tones (gamma function)

Sometimes it is desirable to display the medium tones brighter or darker. This can be achieved with the gamma function.

4. Click the "Linear" field with the left mouse button.

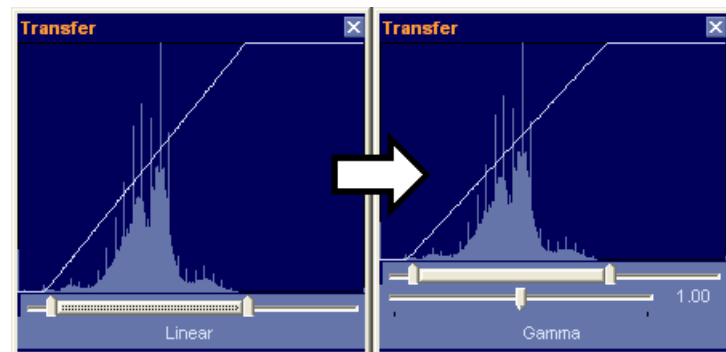
A pop-up menu opens.

5. Select the "Gamma" function.

An additional slider with a display value of 1.00 appears in the "Transfer" window.

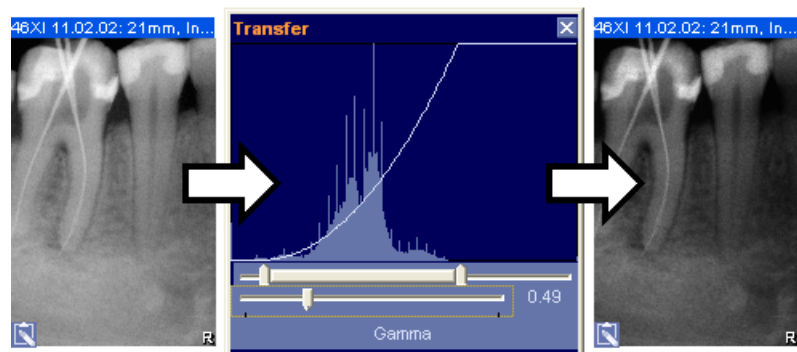
No changes have occurred in the display of the X-ray image.

Example screen



Medium tones darker

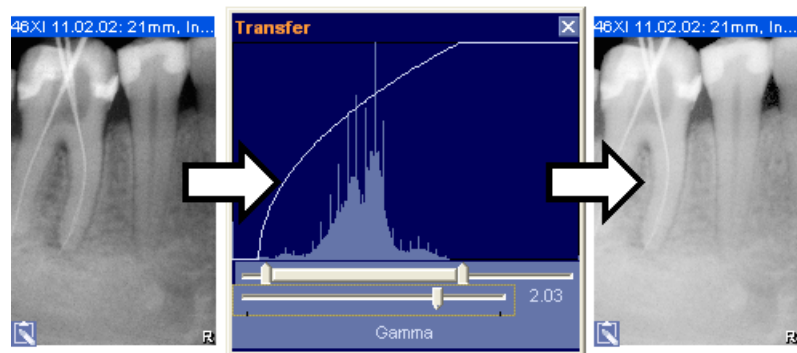
Example screen



6. Push the slider to the left.
 - The line of the "Transfer" function bends downward.
 - The display value decreases (sample image 0.49). Lower values lead to darker medium tones.

Medium tones brighter

Example screen



7. Push the slider to the right.
 - The line of the "Transfer" function bends upward.

- The display value increases (example screen 2.03).
Higher values lead to brighter medium tones.

Reset

8. Click the "Gamma" field with the left mouse button.

A pop-up menu opens.

9. Select the "Reset" function.

The X-ray image and the "Transfer" function are once again in their initial state.

13 Drawing tools

Explanation

Vector objects such as drawings, notes and hints can also be inserted in images now, as known from conventional X-rays. Different tools are available for that purpose.

Validity

All drawing tools can be used freely in the workspace.

Overview

SIDEXIS XG provides the following drawing tools:	Page
Connecting arrows	194
Freehand lines	195
Lines	196
Text fields	197
Special drawing tool for orthodontics	198
Rectangle	199
Ellipse	200

13.1 Connecting arrows


Explanation

Connecting arrows can be used to refer from a diagnostic finding to a position in an exposure. Even if the diagnostic finding or exposure is moved, the connection is preserved.

Validity

Can be used freely in the workspace.

Activating the drawing function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. D[r]awing tools 3. Connecting arro[w]

Functioning

The use of this drawing function is explained in the following sections:

- Section “Changing the form and the size of objects” on page 64.
- Section “Displaying and changing object properties” on page 66.
- Section “Removing objects from the workspace” on page 67.

13.2 Freehand lines


Explanation

This function can be used to draw freehand lines in the workspace.

Validity

Can be freely used in the workspace.

Activating the drawing function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. D[r]awing tools 3. [F]reehand line

Functioning

The use of this drawing function is explained in the following sections:

- Section “Changing the form and the size of objects” on page 64.
- Section “Displaying and changing object properties” on page 66.
- Section “Removing objects from the workspace” on page 67.

13.3 Lines


Explanation

This function enables you to draw lines with any number of node points in the workspace.

Validity

Can be freely used in the workspace.

Activating the drawing function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [A]nalysis2. D[r]awing tools3. [L]ine

Functioning

The use of this drawing function is explained in the following sections:

- Section “Changing the form and the size of objects” on page 64.
- Section “Displaying and changing object properties” on page 66.
- Section “Removing objects from the workspace” on page 67.

13.4 Text fields


Explanation

This function can be used to generate single-line text fields in the workspace.

Validity

Can be freely used in the workspace.

Activating the drawing function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. D[r]awing tools 3. [T]ext

Functioning

The use of this drawing function is explained in the following sections:

- Section “Changing the form and the size of objects” on page 64.
- Section “Displaying and changing object properties” on page 66.
- Section “Removing objects from the workspace” on page 67.

13.5 Special drawing tool for orthodontics

Explanation

This drawing tool serves for generating reference points for measurements on (ceph) X-rays.


You place a cross with a text box at its right side as object in the (ceph) X-ray in which you want to measure something.

You can define as many reference points as you wish within a (ceph) X-ray. By default, the related text boxes are numbered consecutively.

Validity

Can be freely used in the workspace.

Activating the drawing function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [A]nalysis2. D[r]awing tools3. [C]ross

Functioning

The use of this drawing function is explained in the following sections:

- Section “Changing the form and the size of objects” on page 64.
- Section “Displaying and changing object properties” on page 66.
- Section “Removing objects from the workspace” on page 67.

13.6 Rectangle


Explanation

SIDEXIS XG also allows you to draw rectangles.

Validity

Can be freely used in the workspace.

Activating the “Rectangle” drawing function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [A]nalysis 2. D[r]awing tools 3. [R]ectangle

Functioning

The use of this drawing function is explained in the following sections:

- Section “Changing the form and the size of objects” on page 64.
- Section “Displaying and changing object properties” on page 66.
- Section “Removing objects from the workspace” on page 67.

13.7 Ellipse


Explanation

SIDEXIS XG also allows you to draw ellipses.

Validity

Can be freely used in the workspace.

Activating the “Ellipse” drawing function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [A]nalysis2. D[r]awing tools3. [E]llipse

Functioning

The use of this drawing function is explained in the following sections:

- Section “Changing the form and the size of objects” on page 64.
- Section “Displaying and changing object properties” on page 66.
- Section “Removing objects from the workspace” on page 67.

14

Special functions

Explanation

In addition to the functional areas of patient and image management, taking the exposure as well as image processing, separate functions are made available for a few special tasks in SIDEXIS XG.

Subdivision

This chapter is divided into the following sections:	Page
Special function – Always on top	202
Relocation of the image stock	203
- Procedure for relocating the image stock	205
- Opening relocated images	208
Constancy test	209

14.1 Special function – Always on top


Explanation

With SIDEXIS XG it is possible to keep a SIDEXIS image window always on top, regardless which program is currently active. This enables you to enter your diagnosis conveniently e.g. in a Word® document or in your practice management program, while having the SIDEXIS image as a reference before your eyes.

Validity

The currently active image.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none">1. [V]iew2. [I]mage3. [A]lways on top

14.2 Relocation of the image stock

Explanation

Because of the large data volumes which result from the generation of digital X-ray and video images, the patient and image database may increase considerably. This substantially reduces the available memory on the storage medium (hard disk) permanently installed in the PC. In the extreme case, no further exposures can be saved on this storage medium. It is then no longer possible to take new exposures.

For this reason, existing exposures that are currently no longer required are relocated to removable external storage media (usually MO disks). The images saved on the hard disk are moved to the removable storage medium.

The hard disk space previously occupied by these images is freed up and is again available for new exposures.



The system capacity can be extended at will by using several removable storage media.



Moving of data for relocation should not be confused with creating a backup copy. In contrast to relocation, a copy of the data is created on another storage medium for safety reasons during backup.



The available disk space on the permanently installed storage medium can be seen in the information dialog box (see section "Information regarding SIDEXIS, Internet connection" on page 48).

Validity

This function can be used for all X-ray and video images of the image database.

Functioning

During relocation, SIDEXIS remembers the external storage medium to which the images are relocated.

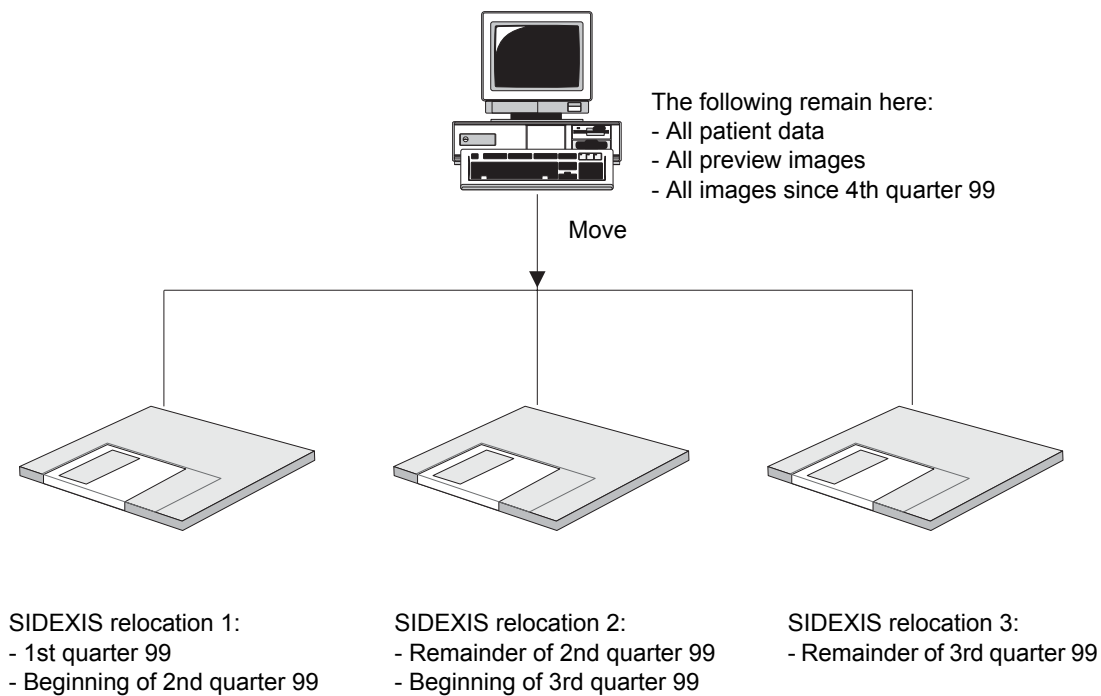
If the user now wants to display a relocated image, then SIDEXIS prompts him or her to insert the corresponding storage medium.

With this method, all relocated images can be displayed again without the user having to make records of relocations.

It is sufficient to label the storage medium used according to the instructions given by SIDEXIS.

14 Special functions

Relocation example



14.3 Procedure for relocating the image stock

Before starting the function


Before starting relocation, all patients must be checked out. In a multi-workstation installation this prerequisite applies to all SIDEXIS stations in the entire system.

Only then is it possible to launch the relocation procedure and to determine its extent.

You should prepare a sufficient number of formatted storage media for relocation.

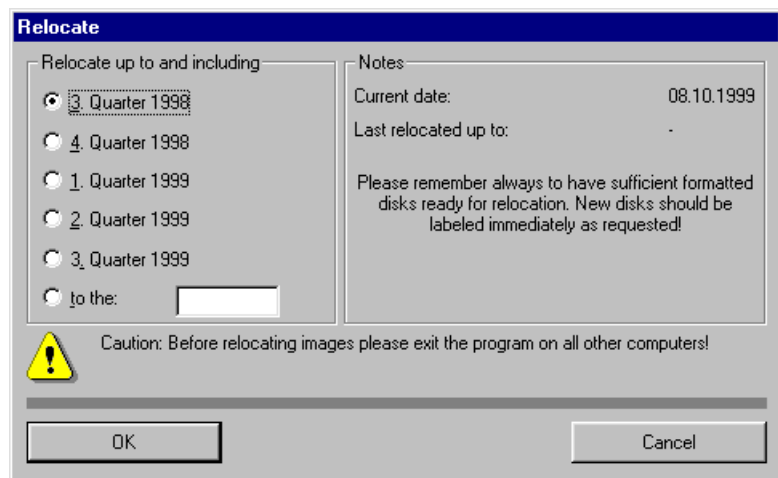
If you find that you have too few storage media in the course of relocation, then the relocation procedure can be interrupted and continued at a later point in time.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. [R]elocate...

1. Selecting the time period

You can select between quarterly intervals or a precise date up to which images should be relocated. Which selection is more favorable depends on the volume of exposures in the individual case.



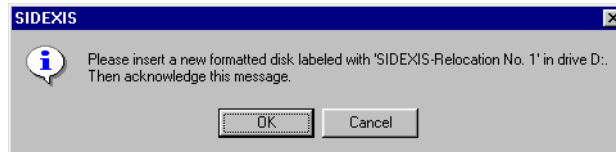
After you have confirmed the dialog box, you are guided through the relocation procedure step by step with a number of messages.

14 Special functions

2. Labeling the storage medium



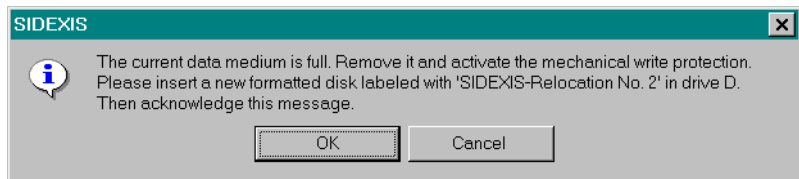
To be able to retrieve the relocated images at any time, you must always label the removable storage media immediately when prompted to do so by the program.



What do I do when the storage medium is full?

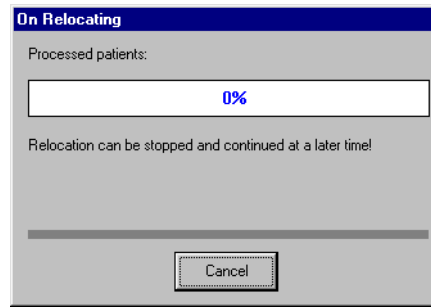


Storage media which are full should be mechanically secured with the write protection to prevent inadvertent deletion or overwriting. To do this, slide the small tab in the corner of the disk so that it no longer covers the opening. If you slide the tab back (i.e. to cover the opening), you can write on the disk again.



3. The relocation procedure

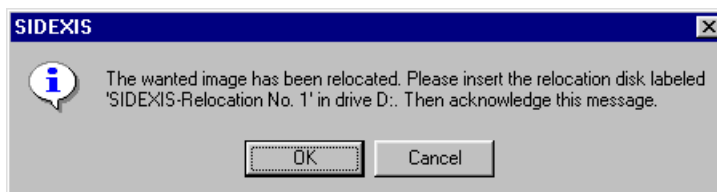
The relocation procedure itself can take some time. Its progress can be monitored in a dialog box. Relocation can be stopped at any time with the Cancel button. There may be a short delay until its termination because the current image must first be processed completely. If you stop a relocation in progress, you can continue it at a later time by specifying the same date(s).



Do not remove the storage medium from the drive during relocation. Otherwise data loss may occur.

14.4 Opening relocated images

Since all information relevant for image selection (image type, image date, short description and preview) remain on the hard disk and only the (disk consuming) images as such are relocated, the later selection of relocated images does not differ from the selection of those not yet relocated. Once the selection has been made, the sole difference lies in inserting the removable storage medium in the corresponding disk drive.



After having inserted the storage medium and confirmed this message, you can display the image as usual. Retrieval and display of the desired image are automatic.



For a better overview, relocated images are marked with "»" in the list of the "Select image" dialog box.

See section "Opening images from the SIDEXIS database" on page 88.

For reasons of data security, formatted and tested MO disks available from the dental dealer are recommended as storage media for relocation. Furthermore, the user does not have to spend time preparing the disks and errors are avoided. Correct functioning of MO disks purchased from the computer trade cannot be guaranteed by Sirona Dental Systems GmbH.

We recommend that the MO disks used for relocation be marked with an unambiguous color (green).

14.5 Constancy test

Explanation


According to German legal regulations, the exposure quality of an X-ray system must be checked for constancy at certain time intervals.

During the installation of SIDEXIS and at every modification to the existing X-ray equipment, the service engineer stores information on the current X-ray system in SIDEXIS.

Validity

This function applies only to digital X-ray technology.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. [C]onstancy test

Operation

You perform these constancy tests using the X-ray logbook supplied with the system.

Only authorized technical personnel may create, modify and delete equipment data with the aid of a service password.

After the acceptance test, which is also performed by the service engineer, the regular constancy tests can be performed by the user.

Configuration

See chapter "System setup" on page 211.

15 System setup


Explanation

This "System setup" function allows you to adapt the system to your individual mode of working and to the existing system environment.

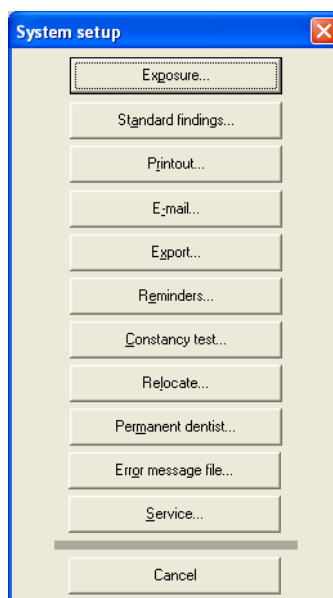


Before you start to configure the system, any registered patients are automatically checked out.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem...

Example screen



Subdivision

The "System setup" function is divided into the following sections:	Page
Exposure...	213
- Editing an exposure template	217
Standard findings...	222
Printout...	224
E-mail...	225
Export...	227

The “System setup” function is divided into the following sections:	Page
Reminders...	228
Constancy test...	229
Relocate...	230
Permanent dentist...	231
Error message file...	233
Service...	234

15.1 Exposure...

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem... 3. Exposure...

Dialog box

Exposure

Depending on image type

Value range of X-ray images

☒ 16 bits

Single exposure sequence

☒ Set tooth or program before exposure

☐ Automatic image description after exposure

L/R marking

☐ Label immediately

Compression

☐ Compress immediately

Compression parameter: 100

(80 = high compression, 100 = low compression)

The compression of X-ray images with a value range of more than 8 bits is not currently supported.

☒ Language output

Call image description automatically

☐ After an image scan

☐ After importing an image file

☐ After inserting an image from the clipboard

Configure

Image optimization... Exam...

Usual X-ray tube settings (intraoral radiography only)

Tube voltage in kV: 60

Anode current in mA: 7

OK Cancel

"Depending on image type"

This option allows you to configure the exposure sequence.

By clicking the different buttons (individually or in combination), you can determine the image type(s) for which the selected settings are active.

Value range of X-ray images

Newly acquired X-ray images with 16-bit depth are processed and managed with the "16 bits" check box.



The compression of X-ray images with a bit depth of more than 8 bits is not currently supported.

"Depending on image type" / "Single exposure sequence"

The option "Set tooth or program before exposure" activates / deactivates the automatic request for details on the area to be exposed (tooth type, area, program). When it is active, the user is asked to specify the target area immediately before taking the exposure, provided that it is not known yet (e.g. from an incoming X-ray order). The findings dialog box is displayed for this purpose and must be confirmed before the system is ready for exposure. SIDEXIS can use this information to display the image in the anatomically correct orientation and position.

The option "Automatic image description after exposure" activates / deactivates the automatic findings function for all X-ray exposures. When it is active, the user is prompted to enter the findings in the dialog box which is displayed immediately after taking the exposure.

"Depending on image type" / "L/R Marking"

This function determines whether a tooth position marker is to be inserted into the image.



About L/R markers on images of the XC type

*If the optional marking of the image with the letters **R** and **L** is activated in SIDEXIS, an **R** will **always** be inserted in the lower right corner of the image when taking cephalometric images. This may lead to confusion. So the marking is not comparable to the well-known **R/L** markers of conventional images.*

*On all cephalometric images, the **R** marker does **not** refer to the radiation beam direction, but ensures that the image is viewed in its original orientation and not flipped.*

Example screens





"Depending on image type" / "Compression"

If the option "Compress immediately" is activated, the image is compressed immediately after its acquisition.

As X-ray and video exposures take up quite a large amount of storage space when they are saved to hard disk or MO disk, SIDEXIS offers the option of compressed storage. The amount of disk space required by the exposures can be greatly reduced in this way.

The compression factor is set in the "Compression parameter" box. With the JPEG compression used by SIDEXIS, a varying degree of **image information** is lost, depending on the compression factor selected. In order to limit the loss of image information, the following limit values apply for setting the compression factor:

Image type	Permissible setting range for compression factor	Recommended compression factor
IO	90 – 100	100
XP	80 – 100	90
XC	80 – 100	90

The following table shows the compression ratio to be expected with different compression factors.

Compression factor	Intraoral X-rays	Panoramic X-ray
100	approx. 1.5 to 2	approx. 2 to 3
90	approx. 5 to 8	approx. 10 to 18
80	approx. 9 to 13	approx. 22 to 33

The time required for compression and decompression procedures depends on the system performance and therefore plays a less significant role on fast PCs.

"Audio output"

Activates audio output.

"Call image description automatically"

Determines when the image description dialog box opens automatically (See section "Image description and findings" on page 96).

"Configure" / "Image optimization..."



This configuration window is used only to optimize the screen display of X-ray and video exposures.

The image data in the SIDEXIS XG database are not changed.

Explanation

Depending on the image type involved, there are certain settings that are useful for diagnostic image display.

The possibility of having these settings performed automatically by SIDEXIS XG in the screen display of the corresponding image type has been created here.

Structure

The following screen displays can be set depending on the image type:

■ "Filter"

Up to three filters can be specified for the screen display here.

Three list boxes are available for this purpose.

The list boxes are processed from top to bottom.

Example:

After an image view has been optimized with the "Sharpen Plus" filters, the "Reduce noise" filter is used to reduce the increased noise level of the image view.

■ "Settings"

- "Brightness" / The brightness is set here.

- "Contrast" / The contrast is set here.

- "Zoom" / The display size is set here

Activation

The settings are activated for the corresponding image type by selecting the "Yes" check box.

"Configure" / "Templates..."

Starts the configuration workspace for exposure templates that can be used for exams. See section "Editing an exposure template" on page 217.

"Usual X-ray tube settings (intraoral radiography only)"

The usual settings for the tube assembly used for intraoral X-rays are entered in the "Tube voltage in kV" and "Anode current in mA" text boxes. These values are required exclusively for documentation in the image database.



The values entered as tube assembly settings do not affect the actual device settings in any way.

15.2 Editing an exposure template

Explanation

A special configuration workspace is used to edit existing exposure templates and to create new ones.

Activating the function

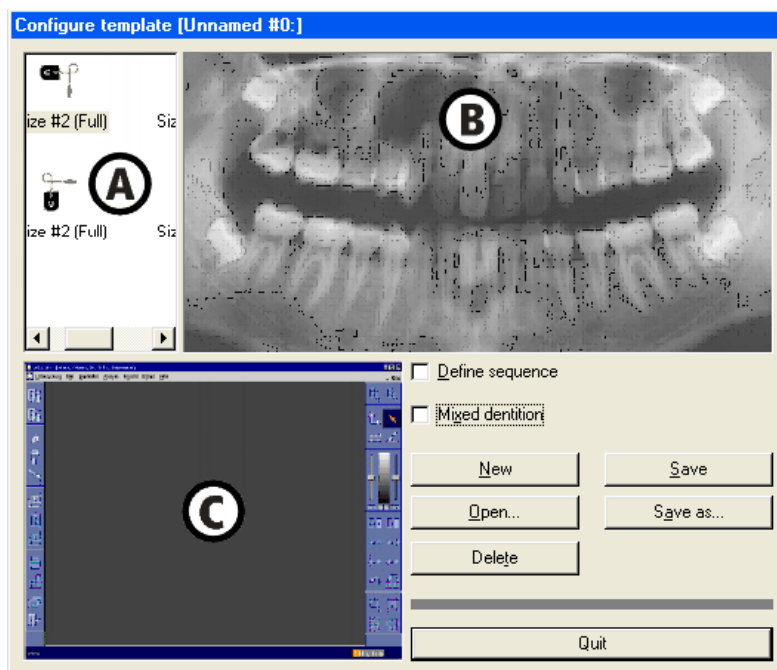
Activation options	
Activation via the menu bar	1. Extra[s]
	2. Configure [s]ys-tem...
	3. Exposure...
	The “Exposure” configuration dialog box appears.
	Area: Configure
	4. Template...

Exposure template editing – topics

- The configuration workspace
- Creating a new exposure template
- Editing an existing exposure template
- Changing the exposure position in the exposure template window
- Changing the tooth registration
- Defining the sequence of exposure positions

15.2.1 The configuration workspace

Configuration workspace



Layout of the configuration workspace

Area	
A	Sensor selection
B	Teeth window
C	Exposure template window

Functions of the buttons

Command button	Function
New	Creates a new empty exposure template.
Open	Opens an existing exposure template.
Save	Saves the exposure template.
Save as	Saves the exposure template under a new name.
Delete	Deletes the active exposure template.
Quit	Closes the configuration workspace.

15.2.2 Creating a new exposure template

Activating the function

- Click the "New" button.
If the exposure is for a mixed dentition, select the "Mixed dentition" check box.

2. Using the mouse, select a sensor in the sensor selection area **A** according to the following criteria:
 - **Type of sensor** (Full-size or Universal)
 - **Position in the mouth** / vertical or horizontal.
3. Press and hold down the left mouse button and drag your selection into the teeth window **B**.

The selected sensor and the position of the sensor cable are displayed as an outline.

Example screen



4. Position the sensor as desired and release the left mouse button.

The exposure position of the sensor now appears in the exposure template window **C** in the lower left corner.

Example screen



Selection of the sensor holder

- SIDEXIS sets the exposure position in accordance with the selected tooth area in the exposure template. The sensor holder to be used is preselected automatically (this preselection should be checked by the user).
- The sensor holder type is identified by special colors.

Color	Sensor holder type
Blue	for anterior tooth
Yellow	for molar tooth
Red	for bite wing

You can now determine further exposure positions or change the initial exposure position and sensor properties (see subsequent sections).

15.2.3 Editing an existing exposure template

Explanation

It may be useful to edit an existing template rather than creating a new exposure template from scratch.

Operation

1. For this purpose, open an existing template that best matches your needs.

2. Save it under a different name using the “Save as...” button.
3. Now you can delete undesired positions or add new positions as described in “Creating a new exposure template”.

15.2.4 Changing the exposure position in the exposure template window

Example screen



Function

Using the mouse, select the exposure position you want to change (identifiable by its “full” color; inactive exposure positions are represented in a “light” color) and leave the mouse pointer there.

- When you press and hold down the left mouse button, you can drag the exposure to any desired position on the screen.
- Right-clicking displays a context menu with further functions.

Context menu

Command	Function
Zoom+	Gradually enlarges the exposure position
Zoom-	Gradually reduces the exposure position
Rotate	Rotates the sensor of the exposure position by 90° to the right and by 90° to the left when it is pressed again.
tooth	Message: “Please click on the teeth you want to assign to this exam in the image. Clicking on an assigned tooth again cancels its assignment to the exam.” See “Changing the tooth registration” on page 221
Size #2 (Full)	Switches the sensor type of the marked exposure position to full-size sensor.
Size #1 (Universal)	Switches the sensor type of the marked exposure position to universal sensor.
Anterior	Switches to the sensor holder for anterior tooth exposures (blue)

Command	Function
bite wing	Switches to the sensor holder for bite wing exposures (red)
Posterior	Switches to the sensor holder for molar exposures (yellow)
Delete	Deletes the exposure position in the exposure template

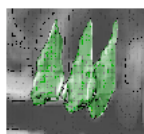
15.2.5 Changing the tooth registration

Explanation

The teeth that are registered in the respective active exposure position are highlighted in the teeth window **B**.

The teeth listed in the exposure position can be individually deleted and inserted.

Example screen



Function

1. Activate the corresponding exposure position in the exposure template window **C**.
2. In the teeth window **B**, click the tooth you want to add to or remove from this exposure.
Clicking the tooth again cancels this action.

15.2.6 Defining the sequence of exposure positions

Explanation

By default, the order in which the sensor images are acquired is defined by the order in which the sensors were entered in the exposure template.

This order can be changed.

Function

1. Activate the "Define sequence" check box.
2. Click the individual exposure positions in the desired order.



If you want to change the order once again or if you have made a mistake during this action, you must repeat the whole procedure after deactivating the check box and then reactivating it.

15.3 Standard findings...

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem... 3. Standard findings...

Explanation

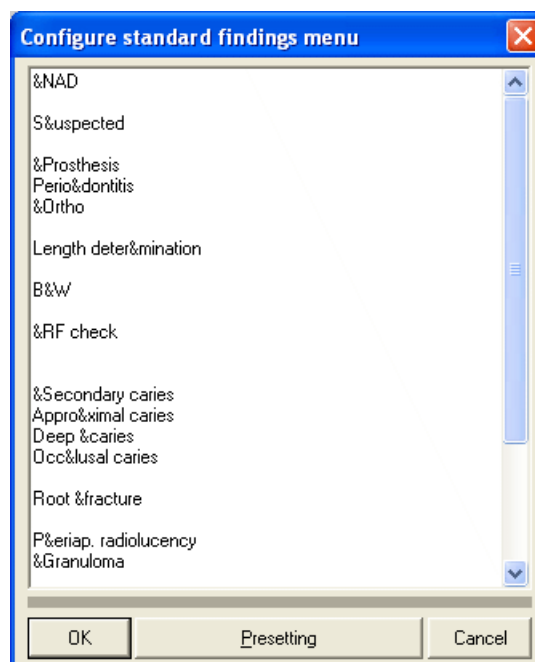
The standard findings offered via context menus in the "Describe image" and "Produce order" dialog boxes (see example screen) can be individually adapted.

Example screen

<u>N</u> AD	<u>S</u> econdary caries
<u>S</u> uspected	A <u>p</u> proximal caries
<u>P</u> rosthesis	D <u>e</u> ep caries
P <u>e</u> riodontitis	O <u>c</u> clusal caries
<u>O</u> рто	R <u>o</u> ot <u>f</u> racture
L <u>e</u> ngth d <u>e</u> termination	P <u>e</u> riap. radiolucency
<u>B</u> W	<u>G</u> ranuloma
<u>R</u> F check	<u>V</u> ertical bone loss
	<u>H</u> orizontal bone loss
	<u>p</u> resent
	<u>a</u> b <u>s</u> ent
	ectopic
	retained

Function

To do this, you enter the desired texts directly in a list using the keyboard.



You complete the individual entries with the [Enter] key. Keep the entries as short as possible.

You may use the “&” character to define your own hotkeys. The letter following the “&” becomes the hotkey for this entry. This letter is then displayed underlined, while the “&” is omitted. You must use this character only once within an entry. To be able to work optimally with the hotkeys, it is also recommendable to use unique hotkeys within the entire menu. Assigning the same hotkey twice should be avoided.

A blank line provides optical separation between individual blocks. Two consecutive blank lines lead to a new column.

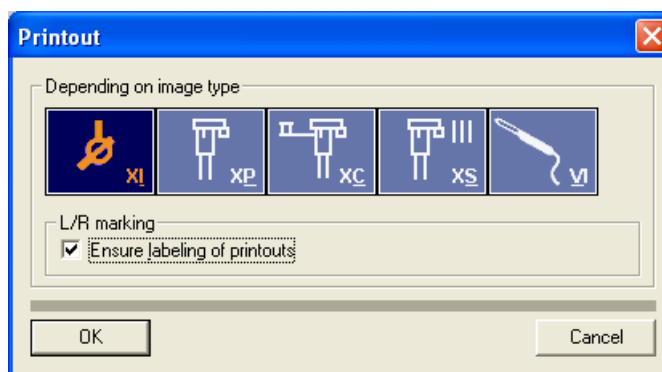
You can restore the condition on delivery with the “Presetting” button.

15.4 Printout...

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem... 3. Printout...

Dialog box



In this dialog box you can determine whether a tooth position marker is to be inserted into the printed image if “**L/R Marking**” has not yet been selected for this image.

Clicking the various buttons (individually or in combination) determines the image type for which the selected settings are active (see also section Exposure..., page 213).

15.5 E-mail...

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem... 3. E-mail...

Dialog box

"E-mail active"

Activates the e-mail function

"Depending on image type"

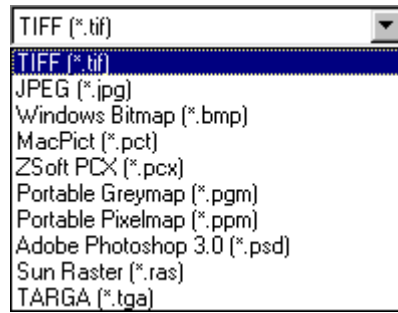
By clicking the different buttons (individually or in combination), you can determine the image type(s) for which the selected settings are active.

"Depending on image type" / "L/R Marking"

This function determines whether a tooth position marker is to be inserted into the image when sending it by e-mail if "L/R marking" has not yet been selected for this image (see also section Exposure..., page 213).

"Depending on image type" / "Image file format"

From this drop-down list you can select the file format to be used when sending images by e-mail.



TIFF and JPEG images can be compressed (see also section Exposure..., page 213).



The compression of X-ray images with a bit depth of more than 8 bits is not currently supported.

"E-mail address of sender:"

The e-mail address of the sender **must** be entered here.

"Aliasname of sender:"

The alias name of the sender may be entered here.

"Type of connection"

Selection of the e-mail service:

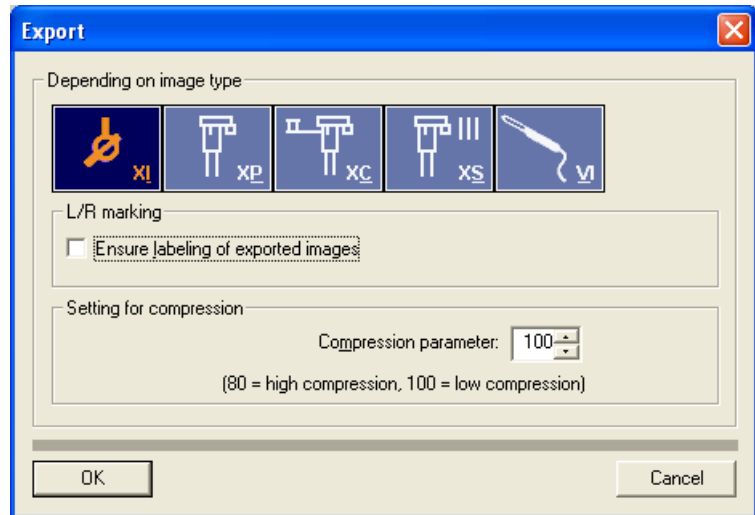
- **SMTP direct** / Opens the SIDEXIS e-mail dialog box. The server address must be entered in this case.
- **MAPI** / Opens the SIDEXIS e-mail dialog box.
- **MAPI + dialog** / Opens the e-mail client of the operating system (e.g. Microsoft® Outlook).

15.6 Export...

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem... 3. Export...

Dialog box



"Depending on image type"

This function is used to configure the export settings for X-ray images. By clicking the different buttons (individually or in combination), you can determine the image type(s) for which the selected settings are active.

"Depending on image type" / "L/R Marking"

This function determines whether a tooth position marker is to be inserted on the printed image if "**L/R marking**" has not yet been selected for this image (see also section Exposure..., page 213).

"Depending on image type" / "Setting for compression"

TIFF and JPEG images can be compressed (see also section Exposure..., page 213).



The compression of X-ray images with a bit depth of more than 8 bits is not currently supported.

15.7 Reminders...

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem... 3. Reminders...

Dialog box

This dialog box is used to activate / deactivate the following reminder functions:

"Exam change"

Exams are checked for modifications before the exam is closed.
The program asks whether the changes should be saved.

"Change of image view"

Image views are checked for modifications before the image is closed.
The program asks whether the changes should be saved.

"Backup"

When quitting the SIDEXIS software, the following message is displayed in the specified time intervals (number of days):

"Patient data check"

This option compares the current patient data with the patient data saved in the images.

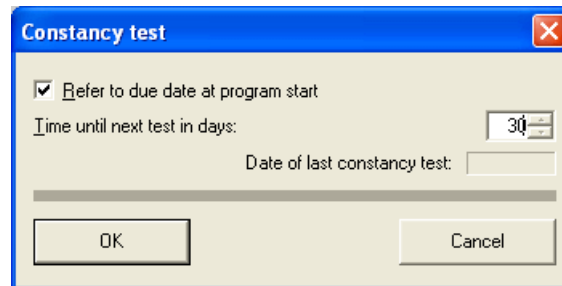
15.8 Constancy test...

Activating the function

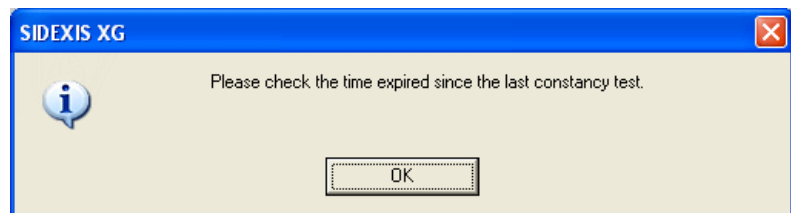
Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem...Constancy test...

Constancy test settings

For stations where X-ray equipment constancy tests must be performed, a corresponding entry can be made in the “Constancy test” area. This requires that the “Refer to due date at program start” option is activated and that the period of time until the next test is specified. The date of the last constancy test performed at this station is also provided for your information.



When the next test is due, a message is displayed during the SIDEXIS XG program start.



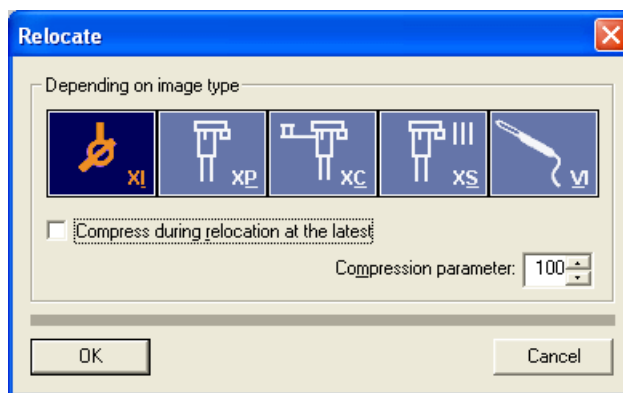
For workstations which do not require a constancy test you only need to deactivate the “Refer to due date at program start” option to prevent the message from showing up during program start.

15.9 Relocate...

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. Extra[s] 2. Configure [s]ys-tem... 3. Relocate...

Dialog box



"Depending on image type"

By clicking the different buttons (individually or in combination), you can determine the image type(s) for which the selected settings are active.

"Depending on image type" / "Compress during relocation at the latest"

If this option is activated, the system checks during relocation whether the images are already compressed. If not, they are compressed using the specified "Compression parameter".



The compression of X-ray images with a bit depth of more than 8 bits is not currently supported.

"Depending on image type" / "Compression parameter"

See section Exposure..., page 213.

15.10 Permanent dentist...



Starting with version 4.2, several permanent dentists can be managed in a list. A prerequisite for this is an ODBC database structure. This is the case if SIDEXIS 4.2 has been set up as a new installation. If this is not the case, then this menu item is unavailable.

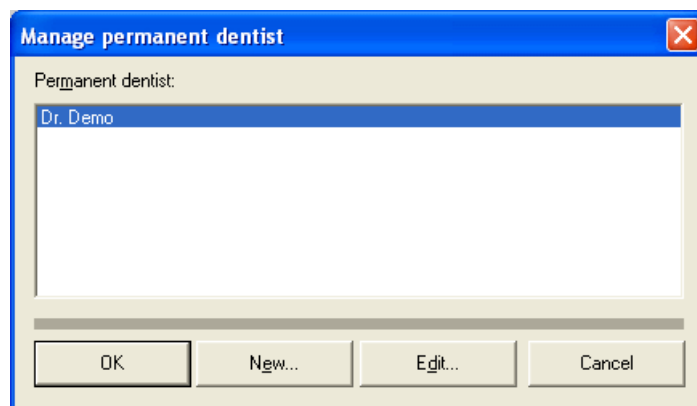
Activating the function

Activation options	
Activation via the menu bar	1. Extra[s]
	2. Configure [s]ys-tem...
	3. Permanent dentist...

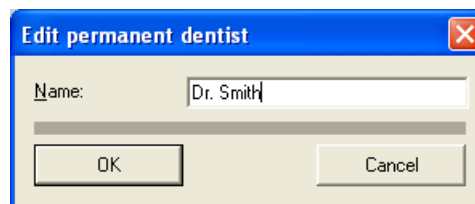
Explanation

When a patient is newly registered, the corresponding permanent dentist can be selected from a selection list in the “New patient” dialog box (see section “How can I create new patient data?” on page 78).

The “Manage permanent dentist” dialog box is used for managing the permanent dentists.



If a new permanent dentist is to be added, the following dialog box appears after you click the “New...” button.



You can enter the name of a permanent dentist here and confirm it with “OK”.

The same dialog box appears when you click the “Edit...” button. You can then correct or overwrite a name.

After each change in the “Manage permanent dentist” dialog box and subsequent confirmation with “OK”, you will be prompted to restart SIDEXIS in order to apply the new data.

15.11 Error message file...

Explanation

For service purposes only!

Displays the “sidexis.log” file (maximum file size 100 KB), in which the most recent error messages are recorded.

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none">1. Extra[s]2. Configure [s]ys-tem...3. Error message file...

15.12 Service...

Explanation

The Service... procedure is provided exclusively for the configuration of hardware and software components and for the adjustment of important system parameters. This program area can only be accessed by authorized technical personnel with a service password.

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none">1. Extra[s]2. Configure [s]ys-tem...3. Service...

16 Buttons and hotkeys












Explanation












The buttons and hotkeys for the program functions are listed here

Subdivision




The buttons and hotkeys vary according to the corresponding toolbars	Page
"Exam" toolbar	236
"Image" toolbar	239
"Edit" toolbar	241
"Analysis" toolbar	242
"View" toolbar	245
"Extras" toolbar	247
"Help" toolbar	248

16.1 "Exam" toolbar











Command button	Hotkeys	Meaning
	[Pos1]	Register patient. See section "Which dialog box is used to register a patient?" on page 72.
		Check out patient. See section "How can I check out a patient?" on page 83.
		Create new patient. See section "How can I create new patient data?" on page 78.
	[Ctrl]+[D]	Edit patient data. See section "How can I modify patient data?" on page 80.
		Delete patient data. See section "How can I delete patient data?" on page 81.
	[Enter]	One step forward. See section "Workflow assistance" on page 40.
	[Esc]	One step back. See section "Workflow assistance" on page 40.
		Continuing an interrupted workflow with the next step See section "Workflow assistance" on page 40.
		Repeating a step See section "Workflow assistance" on page 40.
		Produce order. See section "Generating an order in a multi-workstation environment" on page 43.
		Accept order. See section "Accepting an order in a multi-workstation environment" on page 45.








Command button	Hotkeys	Meaning
	[Ctrl]+[N]	Open new exam. See section “Creating a new “Exam”” on page 52.
	[Ctrl]+[O]	Open existing exam. See section “Opening a saved “Exam”” on page 54.
		Close exam. See section “Closing an “Exam”” on page 63.
	[Shift]+[F12]	Save exam. See section “Saving an “Exam”” on page 55.
	[F12]	Save exam under a new name. See section “Saving an “Exam”” on page 55.
		Save exam as template. See section “Templates” on page 75.
		Delete exam from exam database. See section “Deleting an “Exam”” on page 62.
		Print exam. See section “Printing an “Exam”” on page 56.
		Exam print preview. See section “Print preview” on page 113.
		Configure printer for exam print-out. See section “Printing an “Exam”” on page 56.
		Exam import See section “Importing an “Exam”” on page 60.

16 Buttons and hotkeys





Command button	Hotkeys	Meaning
		Export exam. See section “Exporting an “Exam”” on page 57.
		Change program. See section “Change program” on page 47.
	[Alt]+[F4]	Exit program. See section “Quitting SIDEXIS XG” on page 49.

16.2 “Image” toolbar












Command button	Hotkeys	Meaning
	[Ctrl]+[Shift]+[I]	Activation of an intraoral exposure. See section “Intraoral X-rays” on page 123.
		Activation of a multiple intraoral exposure. See section “Intraoral X-rays” on page 123.
	[Ctrl]+[N]	Open new exam. See section “Creating a new “Exam”” on page 52.
	[Ctrl]+[Shift]+[P]	Activation of a panoramic, ceph and TSA X-ray See section “Panoramic, Ceph and TSA X-ray exposures” on page 128.
	[Ctrl]+[Shift]+[V]	Activation of an intraoral video exposure. See section “Video exposure” on page 131.
		Scan image. See section “Scanning images” on page 116.
		Configure scanner. See section “Scanning images” on page 116.
		Select image from the image database for viewing. See section “Opening images from the SIDEXIS database” on page 88.
		Close image. See section “Close image” on page 101.
	[Ctrl]+[S]	Save current image view as new image. See section “Storing” on page 86.













Command button	Hotkeys	Meaning
		Delete image See section “Deleting images from the image database” on page 102.
	[Ctrl]+[P]	Print image view. See section “Printing images and diagnostic findings” on page 112.
		Image view print preview. See section “Print preview” on page 113.
		Send image. See section “Sending an image” on page 119.
		Send image via e-mail. See section “Sending images via Internet as e-mail” on page 117.
		Import image. See section “Importing an image” on page 110.
		Export image. See section “Exporting image views” on page 107.










16.3 "Edit" toolbar

Command button	Hotkeys	Meaning
	[Ctrl]+[Z]	Undo last filter operation. See section "Undoing the last filter operation" on page 185.
	[Ctrl]+[C]	Copies the active image to the Windows clipboard. See section "Copying the active image to the Windows clipboard" on page 68.
	[Ctrl]+[V]	Pastes images from the Windows clipboard into the workspace. See section "Pasting images from the Windows clipboard" on page 69.
	[Del]	Remove objects. See section "Removing objects from the workspace" on page 67.












16.4 "Analysis" toolbar









Command button	Hotkeys	Meaning
	[Ctrl]+[Shift]+[M]	Mouse adjuster for brightness and contrast setting. See section "Mouse adjuster for setting brightness and contrast" on page 171.
		Standard mouse pointer for selecting objects in the workspace. See section "Selecting objects in the workspace" on page 138.
	[Ctrl]+double-click image	Pan around the image. See section "Panning" on page 154.
		Determining the region of interest for image filters See section "Determining the region of interest for image filters" on page 172.
		Optimize contrast See section "Torch functions" on page 186.
		Invert. See section "Torch functions" on page 186.
		Enlarge. See section "Torch functions" on page 186.
		Image description and findings. See section "Image description and findings" on page 96.
		Connecting arrows See section "Connecting arrows" on page 194.
		Freehand lines See section "Freehand lines" on page 195.
		Lines See section "Lines" on page 196.

Command button	Hotkeys	Meaning
		Text fields See section “Text fields” on page 197.
		Special drawing tool for orthodontics. See section “Special drawing tool for orthodontics” on page 198.
		Rectangle See section “Rectangle” on page 199.
		Ellipse See section “Ellipse” on page 200.
		Measure lengths. See section “Measuring lengths” on page 142.
		Correct results of length measurement. See section “Correcting the results of a length measurement” on page 144.
		Measure angle See section “Measuring an angle” on page 146.
		Measure density See section “Measuring the bone density” on page 148.
	[Ctrl]+[Y]	Restore original image. See section “Restoring the original image” on page 139.
	[Alt]+[Enter]	Display object properties. See section “Displaying and changing object properties” on page 66.
		Contrast optimization filter See section “Contrast optimization” on page 178.
		Smoothing filter See section “Smoothing” on page 179.




Command button	Hotkeys	Meaning
		Sharpen Plus filter See section “Sharpen Plus” on page 180.
		Sharpen Plus Variable filter See section “Sharpen Plus variable” on page 181.
		Noise reduction filter See section “Noise reduction (Median)” on page 183.
		Black dot filter See section “Filtering black dots” on page 182.
		Relief display filter See section “Relief display” on page 184.
	[Ctrl]+[I]	Invert image See section “Invert” on page 176.
	[Ctrl]+[F]	Pseudo-color display See section “Color” on page 177.
		Apply brightness/contrast settings. See section “Applying the brightness/contrast settings” on page 175.
		Contrast/brightness adjustment only active in region of interest. See section “Brightness/contrast adjustment in the region of interest” on page 174.

16.5 "View" toolbar




Command button	Hotkeys	Meaning
		Maximize active image to full-screen size. See section "Full Frame mode" on page 161.
	[Esc]	Restore active image to standard size. See section "Full Frame mode" on page 161.
	[+]	Zoom in. See section "Zooming the image" on page 152.
	[-]	Zoom out. See section "Zooming the image" on page 152.
	[Ctrl][+]	More details. See section "Zooming the image" on page 152.
	[Ctrl][-]	Less details. See section "Zooming the image" on page 152.
	[Shift][F4]	Tile images in the workspace. See section "Tile" on page 157.
		Arrange images as overview in the workspace. See section "Overview" on page 158.
		Arrange images according to their anatomical positions in the workspace. See section "Status arrangement" on page 159.
		Cascade images in the workspace. See section "Cascade" on page 160.
	[Ctrl][L]	Turn active image 90° to the left. See section "Rotate" on page 163.

Command button	Hotkeys	Meaning
	[Ctrl]+[R]	Turn active image 90° to the right. See section “Rotate” on page 163.
		Turn active image by 180°. See section “Rotate” on page 163.
		Special function – Always on top See section “Special function – Always on top” on page 202.
		Activates the magnifier function. See section “Magnifier” on page 162.
		Activates the “Viewport” function. See section “Viewport” on page 155.
		Activates the “Transfer” function See section “Transfer function” on page 188.
		Shows or hides the status bar. See section “The program window” on page 36.
		Customize user interface See chapter “Appendix - Customizing the user interface and plugin administration” on page 155.

16.6 "Extras" toolbar

Command button	Hotkeys	Meaning
		Open constancy test. See section "Constancy test" on page 209.
		Relocate image stock. See section "Procedure for relocating the image stock" on page 205.
		Activate system configuration. See chapter "System setup" on page 211.

16.7 "Help" toolbar

Command button	Hotkeys	Meaning
	[F1]	Open online help
		Help on Windows
		Information about the installed system. See section "Information regarding SIDEXIS, Internet connection" on page 48.

17 Appendix – Backup copies

Basics – backup copies

To increase the system's data security and protect themselves against data loss resulting from a possible hard disk failure, users should make backup copies of the data and the SIDEXIS software regularly.

Such a copy is generally referred to as backup copy.

Backup strategy

Two types of backup are used in the backup strategy employed for SIDEXIS.

- A total backup copies all data of the hard disk to be backed up.
- A differential backup copies only the data which have changed since the last total backup.

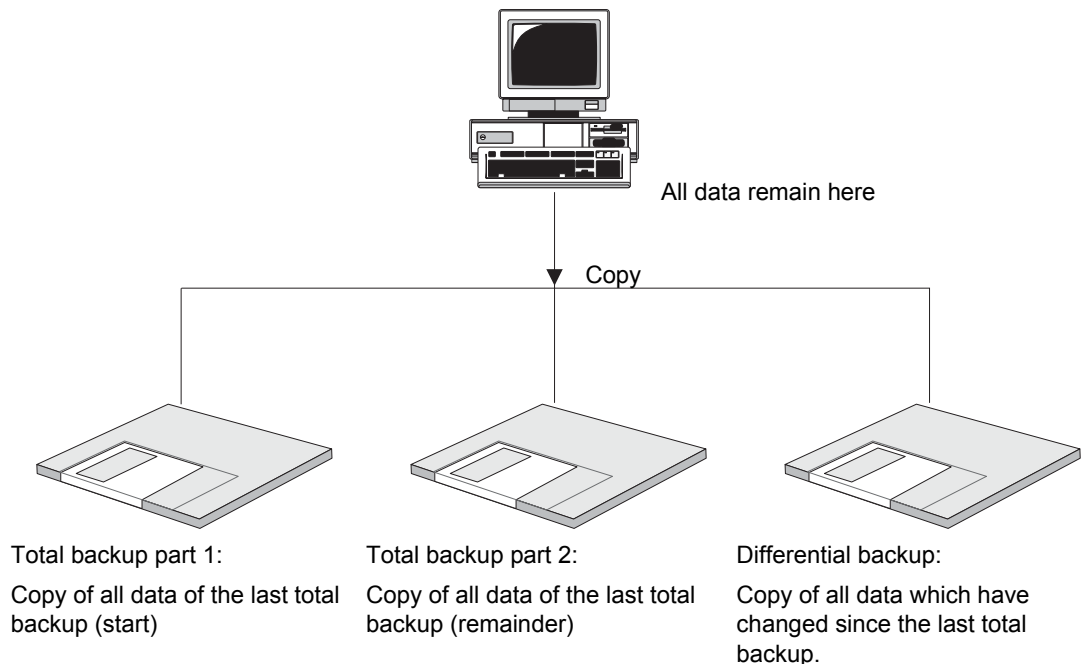
Description

A backup cycle always begins with a total backup which is followed by a series of differential backups.

Total and differential backups together represent the current data stock.

If the data volume saved during a differential backup is too large, we recommend you make a new total backup to minimize the time required for the subsequent differential backups.

Backup example



17 Appendix – Backup copies

Preparation



Always keep a sufficient number of new storage media at hand.

In principle all backup copies can be saved to a single storage medium (provided the data volume does not exceed its storage capacity).

To achieve the highest level of security, a method that requires four storage media is described below.

These storage media are labeled “Total backup 1”, “Total backup 2”, “Differential backup 1” and “Differential backup 2” and are referred to as TB1, TB2, DB1 and DB2. Each backup performed must be documented with date, type of backup and designation of the storage medium used.

Backup procedure

1. Delete any earlier total backup on TB1 and create the new total backup there.
2. Delete any earlier differential backup on DB1 and create the new differential backup there.
3. Delete any earlier differential backup on DB2 and create the new differential backup there.
4. Continue with 2 until the time required for making a differential backup has clearly increased, then proceed with 5.
5. Delete any earlier total backup on TB2 and create the new total backup there.
6. Delete any earlier differential backup on DB1 and create the new differential backup there.
7. Delete any earlier differential backup on DB2 and create the new differential backup there.
8. Continue with 6 until the time required for making a differential backup has clearly increased, then restart at 1.

Example with a cycle duration of 7 backups

Backup	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	...
MO No.	TB 1	DB 1	DB 2	DB 1	DB 2	DB 1	DB 2	TB 2	DB 1	DB 2	DB 1	DB 2	DB 1	DB 2	TB 1	DB 1	...
Cycle	1	...	...	...	...	...	...	2	...	...	...	...	...	...	3	...	...

Important additional information

Creating a backup copy must not be confused with relocation.



SIDEXIS uses the backup utility of Windows 98. This backup utility allows you to back up the data of up to 8000 patients. If this number is exceeded, another backup program must be used.

Therefore SIRONA offers **Novadisk Backup** alternatively as a new backup program.

Clearing storage media

The storage media can be cleared directly from the start menu. Inadvertent deletion of other data (e.g. relocations) is excluded in this case. If you do not delete any data, the capacity of the storage media used is quickly exhausted, so that new storage media are required.

Recommendations for storage media

One or several storage media are required for each total and differential backup, depending on the amount of data. In SIDEXIS, MO disks are used for backup. It is recommended to mark these MO disks with a clear color code (red for total backup, blue for differential backup).

For reasons of data security, formatted and tested MO disks available from the dental dealer are recommended as storage media for backups. Furthermore, the user does not have to spend time preparing the disks and errors are avoided. Correct functioning of MO disks purchased from the computer trade cannot be guaranteed by Sirona Dental Systems GmbH.

Backup frequency

Backup frequency depends on the data volume, i.e. the number of images produced in the system. Please note that lost data can be restored only until the moment when the last backup was performed. A weekly total backup with daily differential backups is therefore recommended in case of high data volumes. With lower data volumes the backup intervals can be extended correspondingly.


As a rule it is sufficient to keep the last two backups. Therefore older backups can be deleted from removable storage media or overwritten to create space for new backups.

18 Appendix - Customizing the user interface and plugin administration

Explanation

Interface customization allows users to adapt the SİDEXIS XG software to their special requirements and wishes.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [C]ustomize...

Function

After the function has been activated the "Customize" configuration window appears.

The user interface can be configured and the plugins can be managed via four different tabs.

Basic function

When the "Customize" configuration window is open, the tools (command buttons) can be moved between toolbars via "drag and drop" and/or deleted.

The tools can be deleted by dragging them to the workspace and dropping them there with the mouse.



The same function can also be performed by pressing and holding the [Alt] key on the SİDEXIS XG user interface.

The "Customize" configuration window does not have to be opened for this purpose.

Reset

See section "Toolbars" on page 255.

Tabs

The following tabs are available:

- Commands (See page 254)
- Toolbars (See page 255)
- Plugin Manager (See page 257)
- Options (See page 259)
- Access rights (See page 262)
- Personalization (See page 268)


18.1 Commands

Explanation

All program tools (command and toolbar buttons) are listed on the "Commands" tab.

They can be assigned to the toolbars of the SIDEXIS XG user interface (desktop) here.

Activating the function

Activation options	
Activation by clicking the button	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [C]ustomize... 3. Select the "Commands" tab

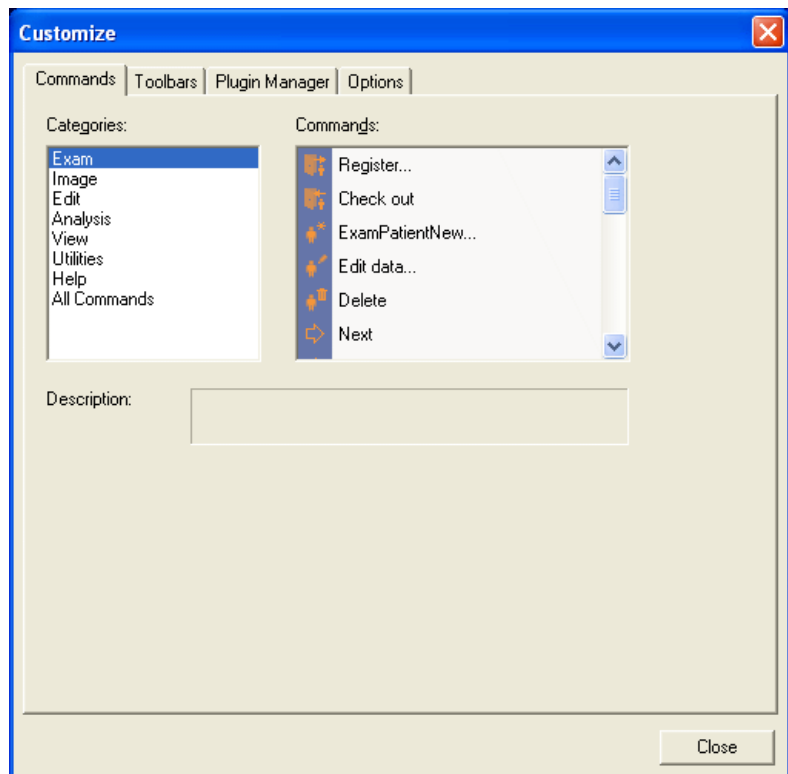
Structure

- The menu bar title is located on the left side of the ("Categories") tab.
- The tools of the selected menu bar title are located on the right side of the tab ("Commands")

Function

The tools can be assigned to the toolbars of the SIDEXIS XG user interface via drag and drop.

Dialog box



18.2 Toolbars

Explanation

The toolbars of the SIDEXIS XG user interface are managed on the "Toolbar" tab.

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none">1. [V]iew2. [C]ustomize...3. Select the "Toolbar" tab

Operation

- "Toolbar" selection list box

The existing toolbars on the SIDEXIS XG desktop can be shown and hidden by clicking the check boxes.



One easy way to hide or show the existing toolbars is described in section "Showing and hiding toolbars" on page 256.

- "New" button

A new toolbar can be created by clicking the "New" button.

- "Delete" button

You can delete a custom made toolbar by selecting the "Delete" button.

- "Rename" button

You can rename a custom made toolbar by selecting the "Rename" button.

- "Reset" button

You can restore a toolbar to its condition on delivery by selecting the "Reset" button.

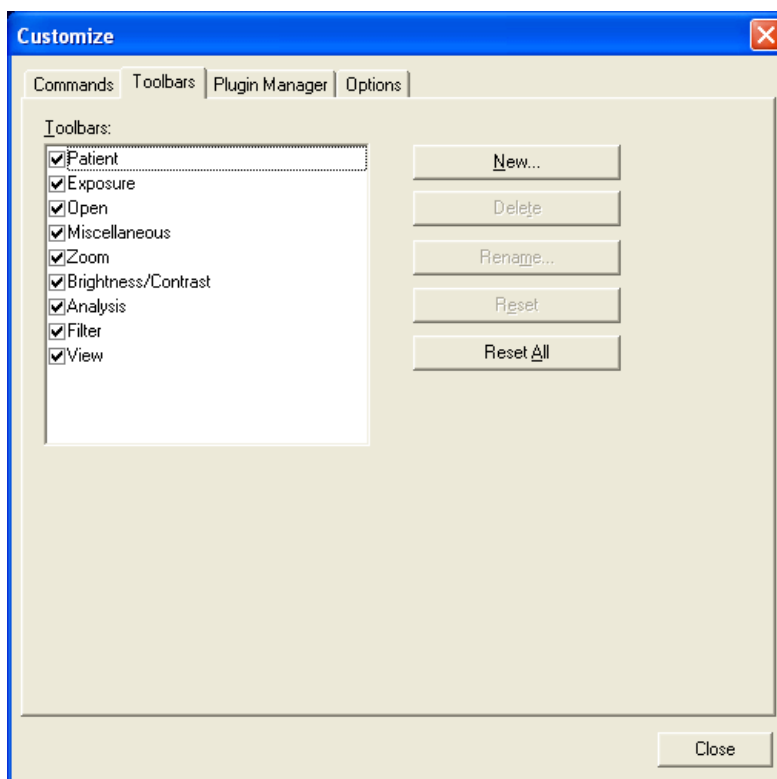
The position of the toolbar remains unchanged.

- "Reset All" button

You can restore all toolbars to their condition on delivery by selecting the "Reset All" button.

The positions of the toolbars remain unchanged.

Dialog box



18.2.1 Showing and hiding toolbars

Explanation

In addition to the "Toolbar" selection list box described above, you can also show and hide the toolbars directly via the menu bar of the SIDEXIS XG user interface.

Activating the function

1. Place the mouse pointer above the menu bar.
2. Press the right mouse button.

A popup menu bar with the names of all existing toolbars then appears.

Function

- The existing toolbars can be activated and deactivated by clicking the check box.

Activating the "Customize" configuration window

The "Customize" can be activated via the configuration symbol located below the list of check boxes.

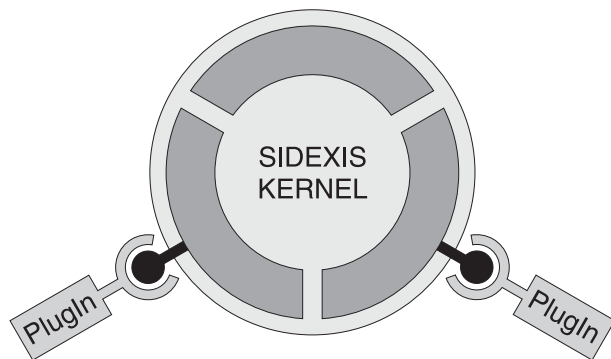
18.3 Plugin Manager

Explanation

A standardized, documented plug-in interface allows for easy integration of additional functions (e.g. databases) and image functions (e.g. image filters) into existing SIDEXIS installations.



The responsibility for the integration of image processing software via the plug-in interface, the application of such software and the use of the resulting images lies with the user. The resulting images may no longer be suitable for medical evaluation and purposes. For that reason Sirona cannot assume any liability for images produced or manipulated by such software.



Validity



Administrator access rights are required to operate the Plugin Manager.

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [C]ustomize... 3. Select the "Plugin Manager" tab

Operation

When a plugin is registered, the menu command is automatically created.

When the menu command is created, a distinction is made between filter plugins and other types of plugins. Where a filter plugin is involved, the menu bar can be reached via *Analysis/Filter/Filter Plugins*. All other plugins can be reached via the *Extras/Plugin* menu bar.

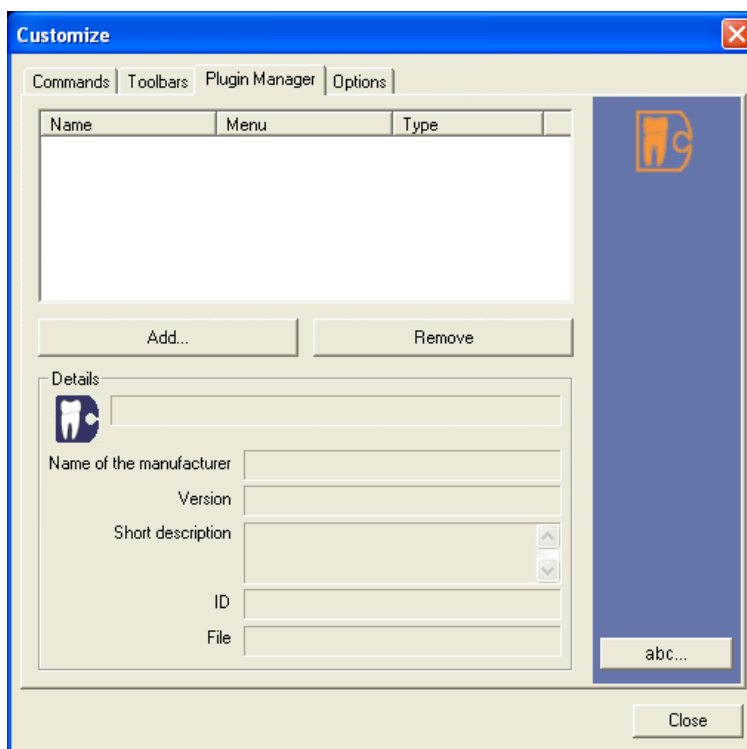
18 Appendix - Customizing the user interface and plugin administration

An additional toolbar with a corresponding button is also created for the current user who installed the plugin.



The "Commands" and "Toolbars" tabs are disabled after plugins are registered or deleted. The tabs are reenabled after the "Customize" configuration window is reopened.

Dialog box



Registering a new plugin



*First execute the plugin setup or copy the plugin file(s) to a drive that is always available. Do **not** register on CD/floppy disk etc.!*

1. Actuate the "Add" button.

The "Plug-in selection" window then opens.

2. Navigate the selection list box to the location where you have installed the plugin.
3. Mark the required plugin file.
4. Actuate the "Open" button.
5. Close the dialog box.

The new plugin is registered.

Removing a plugin from the SIDEXIS XG software

1. Mark the plugin to be deleted.
2. Actuate the "Remove" button.

The plugin has been removed from the SIDEXIS XG software.

18.4 Options

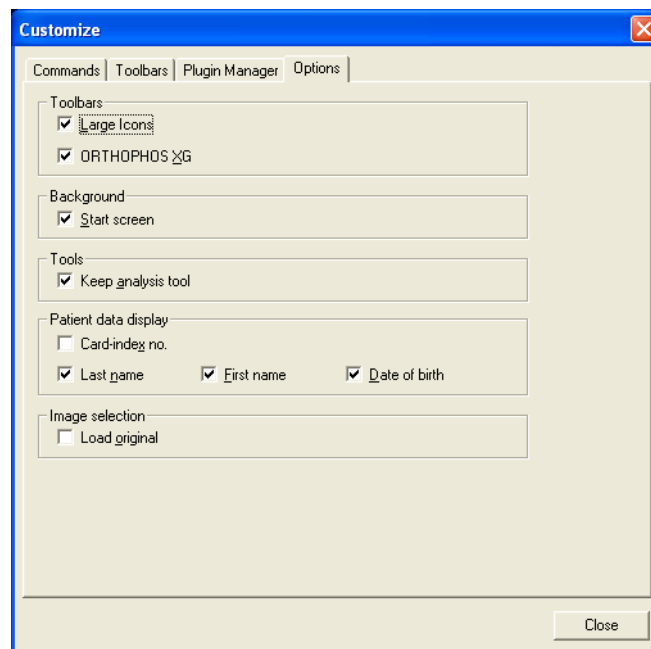
Explanation

The "Options" tab is used for general configuration of the SIDEXIS XG user interface.

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [C]ustomize... 3. Select the "Options" tab

Dialog box



Structure

The "Options" tab is subdivided into the following configuration fields:

- "Toolbar" configuration field (See page 260)
- "Background" configuration field (See page 260)
- "Tools" configuration field (See page 260)
- "Patient data display" configuration field (See page 261)
- "Image selection" configuration field (See page 261)

"Toolbar" configuration field

Check box	Function
Large Icons	The size of the SIDEXIS XG user interface buttons can be decreased by deactivating the check box.
ORTHOPHOS XG	<p>If the check box is deactivated, the new image management layout of panoramic and cephalometric exposures in ORTHOPHOS XG design is replaced by the familiar SIDEXIS Classic layout.</p> <p>See section "Opening images from the SIDEXIS database" on page 88.</p>

"Background" configuration field

Check box	Function
Start screen	The background image of the start page can be switched off by deactivating the check box.

"Tools" configuration field

Check box	Function
Keep analysis tool	After using an analysis tool, you can switch the mouse pointer back to the standard mode by deactivating the check box.

"Patient data display" configuration field

Check box	Function
Card-index no.	If the check box is activated, the card-index number will be displayed on the title bar of the SIDEXIS_XG program, print-outs and export files.
Name	If the check box is activated, the last name will be displayed on the title bar of the SIDEXIS_XG program, print-outs and export files.
First Name	If the check box is activated, the first name will be displayed on the title bar of the SIDEXIS_XG program, print-outs and export files.
Date of birth	If the check box is activated, the date of birth will be displayed on the title bar of the SIDEXIS_XG program, print-outs and export files.

"Image selection" configuration field

Check box	Function
Load original	If the check box is activated, the original image will be loaded by default when an image is loaded.

18.5 Access rights

Explanation

The “Access rights” tab is used for configuring optional access rights.

USA only: This function supports HIPAA implementation measures.



The “Patient data display” configuration group box on the “Options” tab also supports HIPAA implementation measures. See section “Options” on page 259.



It is the responsibility of the user to use and configure this function in accordance with the HIPAA rules.

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none"> 1. [V]iew 2. [C]ustomize... 3. Select the “Access rights” tab

Activation/deactivation

The function is activated and deactivated by means of the “Restrict access” check box.

Configuration

You can create and manage users and user profiles on the “Access rights” tab.



User profiles are implemented in the form of so-called “Roles”!

The “Access rights” tab is divided into two areas:

- The “User” configuration group box (description see page 263)
- The “Assigned roles” configuration group box (description see page 264)

18.5.1 “User” configuration group box

Explanation

This area is used for managing the users of SIDEXIS XG.

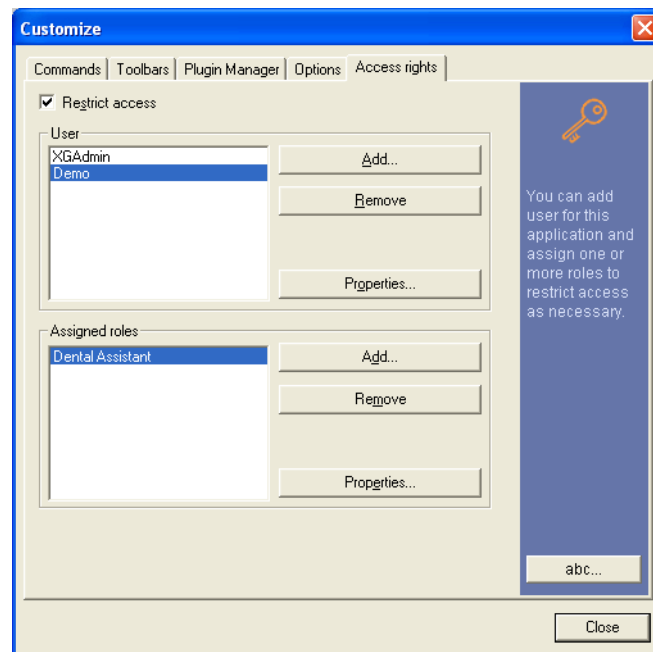


The current user is preselected in the list!

Structure

- Left picklist
Contains a list of all users of the SIDEXIS XG database with selectable names.
- “Add” button
The “Add” button opens the “User” dialog box (see page 265). There you can create new users.
- “Remove” button
The “Remove” button deletes the selected users.
- “Properties” button
The “Properties” button opens the “User” dialog box (see page 265) for the selected user.

Example screen



18.5.2 “Assigned roles” configuration group box

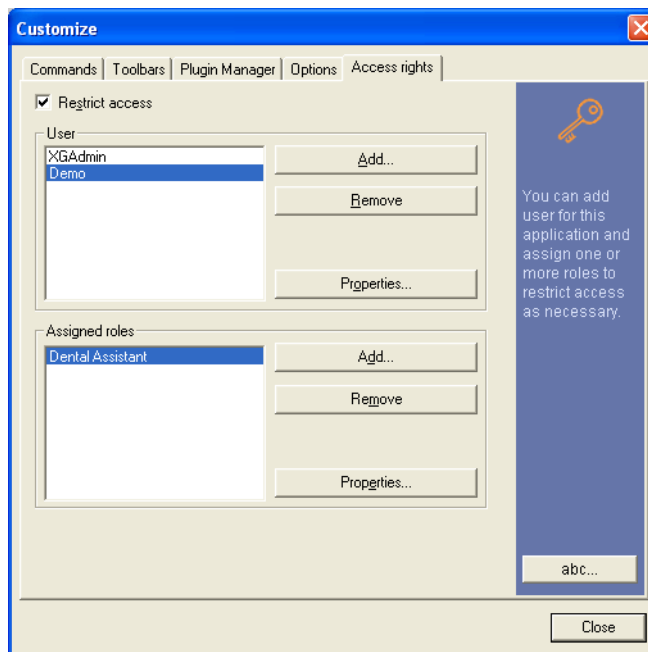
Explanation

In this area the roles for the selected user are displayed and managed.

Structure

- “Add” button
The “Add” button opens the “Roles” dialog box (see page 266). There you can assign roles to the selected user.
- “Remove” button
The “Remove” button removes the assignment of the selected role to the user selected above.
- “Properties” button
The “Properties” button opens the “Properties role” dialog box (see page 267). There you can configure the roles.

Example screen

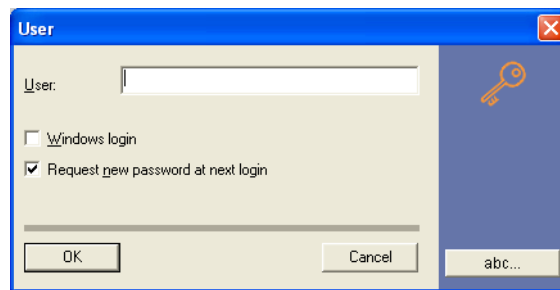


18.5.3 “User” dialog box

Structure

- In the “User” text box, you can specify or edit the user names.
- “Windows login” check box
When you start SIDEXIS XG, the Windows log-on will be used.
The user does not have to log on a second time.
The user name must be identical to the log-on name used for logging on to Windows!
- “Request new password at next login” check box
The newly created or selected user will be prompted to enter a new password when logging on the next time.

Example screen



18.5.4 “Roles” dialog box

Structure

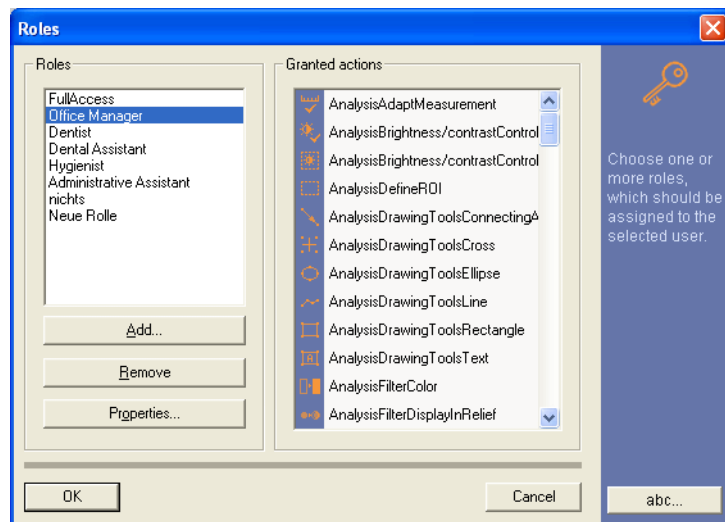
- “Roles” configuration group box
 - The text box shows the available roles.
 - The “Add” button opens the “Properties role” dialog box (see page 267). There you can create and configure a new role.
 - The “Remove” button deletes the selected role. If the role has already been assigned to other users, these assignments are deleted as well.
 - The “Properties” button opens the “Properties role” dialog box (see page 267). The scope of actions of the selected role is displayed there.
- “Granted actions” configuration group box
 - Shows the actions that are permitted for the selected role.

Assigning a role

1. Select the desired role.
2. Press the “OK” button.

The selected role is now assigned to the selected user.

Example screen



18.5.5 “Properties role” dialog box

Explanation

The scope of actions of the respective role is displayed here. The dialog box is used for configuring the role.

Structure

- The “Name” text box contains the name of the role.
This name can be edited in the text box.
- “Not granted” picklist
Shows all actions that are **not** assigned to the role.
- “Granted” picklist
Shows all actions that are assigned to the role.

Configuration

Moving an action from one picklist to the other.

1. Select the desired action.
2. Click the appropriate arrow button.

Moving all actions from one picklist to the other.

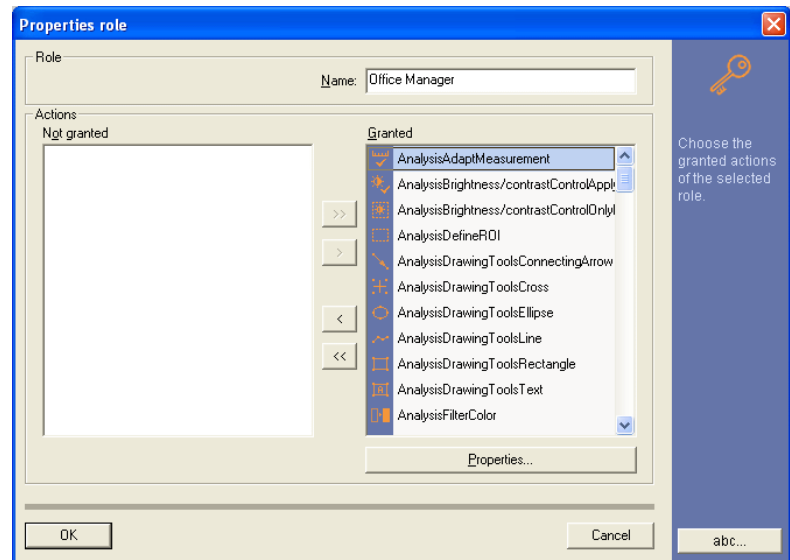
- Click the appropriate double arrow button.

Saving the setting

- Press the “OK” button.

The role is now configured.

Example screen



18.6 Personalization

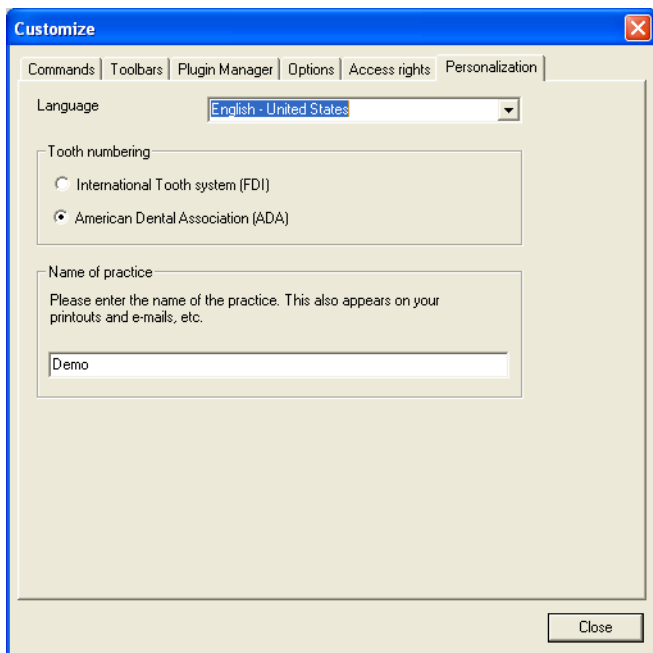
Explanation

The dialog language, tooth numbering to be used and practice name can be changed on this tab card.

Activating the function

Activation options	
Activation via the menu bar	<ol style="list-style-type: none">1. [V]iew2. [C]ustomize...3. Select the "Personalization" tab card

Dialog box



19 Appendix – Troubleshooting

Subdivision

Troubleshooting – topics:	Page
Error messages	270
List of error messages	272
Rescue program (SiRescue.exe)	277

19.1 Error messages

Explanation The error messages generated by the SIDEXIS software are divided into different classes.

Classes

- Messages and instructions
- Questions and warnings
- Error messages

19.1.1 Messages and instructions

Explanation This class of messages usually deals with normal software states about which the user should be informed. Information on how to proceed is either contained in the message itself or in this manual.

Identification These messages are normally identified by the following symbol:



19.1.2 Questions and warnings

Explanation If there are a number of ways to proceed at a particular point in the program or if an action with more widespread consequences needs to be reconfirmed, the system will issue questions and warnings. Information on how to proceed can be found in this manual.

Identification of questions Questions are in most cases identified by the following symbols:



Identification of warnings Warnings are usually identified by the following symbols:



19.1.3 Error messages

Explanation The third and last class of SIDEXIS system messages is used for signaling error states.

Identification

These messages are usually identified by an error number enclosed in brackets in the title line of the message and the following symbol:



Depending on the frequency and effects of this message, it may be necessary to call a service engineer.

Below you will find a list of some of the error messages generated by SIDEXIS XG with information for the user how to eliminate the problem.

See section “List of error messages” on page 272.

19.2 List of error messages

Explanation

The list describes some of the error messages generated by SIDEXIS XG.

Information how the user may eliminate the problem is also provided.



If this information does not lead to the desired result or the error is not included in the list, call the hotline for assistance.

Error list

1500	SIDEXIS can only be started once at each station. Limit yourself to one instance of the software during your work.
1501	Possibly insufficient working memory (RAM) when starting SIDEXIS. Exit other programs, if possible.
1502	Possibly insufficient working memory (RAM) when starting SIDEXIS. Exit other programs, if possible. It should be possible to continue working without the hotkeys, though.
1530	Check the connections, cables and connectors between the PC, SIROCAM and the foot switch. It should be possible to continue working without the camera and foot switch, though.
1599	Reboot the PC. If the error occurs repeatedly, contact the hotline.
1600	Insufficient working memory (RAM). Close any images no longer needed or exit other programs, if possible.
1601	see 1600
1602	<p>This is an internal error; unexpected data has appeared in the software. We cannot recommend any general way to proceed.</p> <p>You should report the error to Sirona Dental Systems with a description of the action that caused the error.</p> <p>Provided that it is possible to reproduce the occurrence of the error, the action that caused the error should be avoided in the future in order to prevent possible damage to the database.</p>

1603	Possibly insufficient working memory (RAM). Close any images no longer needed or exit other programs, if possible.
1604	see 1603
1605	No more disk space left on the database drive. Relocate data to free up disk space.
1607	The selected ROI is too small. Please select a larger region.
1610	You have reached the maximum number of exposures that can be saved for the patient currently registered. To be able to save new images of this patient, you must delete some of the existing images. Alternatively, you can create a new data record for this patient (New Patient). The name of the patient must slightly differ from the existing entry (e.g. by appending a number). This error is unlikely to occur as the number of exposures that can be saved is very large.
1611	The number of images that can be displayed simultaneously is limited. It is sufficient to close any images no longer needed.
1640	A printout could not be started on one of the printers connected. Check the involved hardware first. Is the corresponding printer switched on? Is it connected to the PC with the correct cable in the correct socket? Is paper inserted?
1650	The view you have requested cannot be fully restored. The displayed view may therefore differ from the saved view. You can restore the desired status using the image processing functions. If it is not possible to continue working with the view, then you have to recur to the original view.
1660	A new image could not be saved to the database. However, in order not to lose the image, it can be saved e.g. to floppy disk using the export command. After the problem is eliminated, this exported image should then be reimported and assigned to the corresponding patient.

1700	Database access problems have occurred. If the database is installed on a server or X-ray PC, check whether they are switched on, ready for operation and correctly configured and whether the network connections and cables are OK.
1701	see 1700
1702	see 1700
1703	see 1700
1704	see 1700
1705	see 1700
1706	see 1700
1708	see 1610
1709	No further views of the active image can be saved to the database. The maximum number of views for this exposure has been reached. To be able to save new views of this image, you must delete some of the existing views. This error is unlikely to occur as the number of views that can be saved is very large.
1715	see 1605
1716	The desired patient is already registered in the system. There are two possible reasons for this. In most cases the patient is registered at another station in the network. As the patient can only be processed at one station at a time, you must wait until the patient has been checked out at the other station before being able to register him or her. This is a normal system state. If the patient is not registered at another station on the network (check all stations thoroughly), he or she can be 'enabled' in SIDEXIS for processing with the command Utilities, Multistation functions, Manage network registrations. This error may be the result of an earlier network failure, power failure or PC shutdown while the patient was still registered.
1718	No further patients can be registered in the system. The maximum number of patients that can be registered in the system has been reached. You should log off any patients who are no longer needed. Any 'false' registrations can be undone (after having checked all stations thoroughly) with the command Utilities, Multistation functions, Manage network registrations.

1719	The desired patient has been deleted from the system.
1720	see 1719
1721	The desired image view is already open. A list of open images can be found on the Window menu.
1722	see 1611
1723	The desired view has been deleted from the system. Recur to another view or the original image. You can restore the desired status using the image processing functions.
1724	see 1723
1725	see 1700
1726	see 1700
1804	You may need to install/reinstall the sensor being used.
1806	Connect a sensor or check the sensor's cable or connection.
1807	The sensor has been successfully replaced or newly installed. No further action is necessary.
1811	see 1806
1812	It was necessary to initialize the sensor with default values. This can lead to a loss of image quality. Perform an installation for this sensor with the related floppy disk (check the sensor number).
1814	see 1804
1961	A read error has occurred.
1962	Error in TWAIN configuration. If necessary, reinstall your TWAIN components (scanner, camera, etc.).
1963	-
1964	see 1962
1965	see 1962
1966	see 1962
1967	see 1962

19 Appendix – Troubleshooting

1968	see 1962
1969	see 1962
1970	see 1962
1971	Unable to access clipboard.

19.3 Rescue program (SiRescue.exe)

Explanation

In case of unexpected network errors, there may be problems with image transfer from the X-ray component to SIDEXIS.

In this case the system terminates the connection after a certain time (→timeout intervals) and enters the so-called rescue state. This means that the image is not lost, but is kept in the RAM of the X-ray component by a safety mechanism until it is retrieved by the SiRescue rescue program. A further exposure with this X-ray component is blocked until this moment.



The X-ray component must not be switched off during the rescue state (fast alternate flashing of the sensor and ready LED).

If the X-ray component is nevertheless switched off, the image will be lost and the X-ray component will again be ready for operation after the next power on.

Retrieving the image

1. Start the SiRescue.exe program on any networked SIDEXIS computer.

The program is located in the SIDEXIS folder.

The program opens with a welcome screen.

2. Press the "Next" button.

The "Selection of X-ray component" dialog box opens.

A list of all the networkable X-ray components approved for this PC is displayed here.

If the required X-ray component is not displayed, you can deactivate the "Approved for <PC name¹>" check box to display all of the X-ray components available in the network. To do this, you must enter the SIDEXIS service password.

3. Select the relevant X-ray component.
4. Press the "Next" button.



If the selected X-ray component is not in the rescue state, an error message will be output. In this case, click the "Cancel" button to end the program or the "<Back" button to select another component.

The image is retrieved and processed.

1. <PC name> = name under which the PC is registered in the network

The patient name is displayed. A default file name and directory path are offered for storage of the rescued image.

5. Remember the patient name, file name and directory path.

6. Press the “Next” button.

If necessary change the folder.

The message that the image was saved successfully follows.

7. Press the “Finish” button.

The image has now been saved to the chosen folder.

The program terminates automatically.



To make the image visible in SIDEXIS, it must be imported and assigned to the respective patient.

Importing the image

1. Start SIDEXIS XG.

2. Register the patient concerned.

3. Import the image.

Once it has been successfully imported, the image can be deleted from the import folder, as it is now stored in the SIDEXIS database.

20Index

Symbols

??	90
~~	89
»	95
„ »“	208

Numerics

16 bits	214
---------	-----

A

Acceptance test	209
Acquisition unit	
Selecting	125
Acquisition units	
Question mark	126
Adapter box	127
Angle measurement	146
Angular relationship	146
Anode current	216
AP	92
Apex of the angle	146
Area	214

B

Backup	203
Bone density	
Bar length	150
Spreading	150
Brightness	23

C

Camera	24
Carpus exposures	92
Central X-ray beam	19
Cleaning	10
Cleaning disk	10
Code of the image type	91, 92
Color code	208, 251
Complaint	99
Compression	87, 99
Compression ratio	215
Compression, lossy	215
Computer trade	10, 11, 208, 251

Cone	20
Configuration	213, 227
Connection, establishing	126
Consistency	122
Constancy test	209, 229
Context menu	44, 131
Contrast	23

D

Data loss	249
Data relocation	205
Data return	208
Data security	11, 122, 249
Data transfer	126
Dental dealer	208, 251
Description	122
Deselect	94
Developing chemicals	18
Developing process	18
Diaphragm	20
Different views	86
Differential backup	249
Digitization	24, 133
disk space	203
Distortions	19
Dose	22

E

Edit permanent dentist	231
E-mail	117
E-mail address	118
E-mail connection	48
Error messages	270
Esc key	98
Exposure	121
Exposure area	19
Exposure mode	24
Exposure quality	209
Exposure readiness	121, 122, 123
Extraoral video camera	25, 131

F

Findings	90, 96, 98, 122, 214
Findings dialog box	125

Findings, automatic99
 Flashing127, 129
 Focusing19
 Foot switch10, 24, 131, 132, 133
 Forehead support99
 Frame grabber10
 Full Frame161
 Full Frame mode161
 Full-face camera10, 132

G

Gamma188
 Gamma correction188
 Gamma function188
 Green indicator127, 129

H

Hand mode154
 Hard disk203, 249
 Hardware components10
 HIPAA262
 Histogram189
 Homepage of SIRONA48
 Hotkey223
 Hotline272
 Hygiene10
 Hygienic protective covers10

I

Image acquisition121
 Image database102
 Image date98, 208
 Image description89
 Image quality22, 24, 215
 Image type46, 97, 208
 Immobilizing the sensor19
 Imported images146
 Incorrect data assignment94
 Instructions270
 International odontogram91
 Internet browser48
 Intraoral X-ray sensor19
 Intraoral X-rays123

J

JPEG215

K

Key combination ALT + S98
 Kit solution10

L

Lateral exposures92
 Light-emitting diode127
 Line voltage19
 Linear189
 Linear function189
 List of permanent dentists231
 Live image24, 131, 132
 Live video image24, 131, 132

M

Mail connection117
 Maintenance work10
 Manage network registrations274
 Mass memory168
 Messages270
 Mixed dentition91
 MO disk10, 203, 208, 251
 MO drive10
 Multiple exposure123, 125
 Multiple selection94
 Multistation installation42, 43
 Multitimer21, 37
 Multitimer control23

N

Name change94
 Network42
 NGE57
 NGE format57, 60
 Noise22
 Noisy22
 Not diagnosable98
 Number of open images122
 Number of the tooth125

O

OP programs91
 Original image86
 Original images102
 Original view86
 ORTHOPHOS21

- ORTHOPHOS DS 10
 Ortho-Template 75
 Overexposure 22
 Overmodulation 22
- P**
- PA 92
 Panoramic X-ray 128
 Patient database 71, 86, 122
 Permanent dentist 231
 Plastic housing 19
 Positioning 19
 Pregnancy 43
 Preselection 90
 Preview 208
 Profile display 150
 Program change 122
 Program number 91
- Q**
- Questions 270
 Quickview 98
- R**
- Radiation dose 22, 23
 Radiation exposure 23
 Radiation time 99
 RAM 168
 Ready dialog box 127, 129
 Ready status 127
 Registration 122
 Registration in the system 79
 Relative density 149
 Relocated images 95
 Resolution 23
 Responsible 98
 Retention period 102
 Retrieval 90, 98
 Right-angle technique 20
- S**
- Saved views 87
 Sensor holder system 20
 Service disk 29
 Service engineer 209
 Service password 209
- Sex 43
 Short description 89, 98, 208
 SIDEXIS 5.x 231
 Single exposure 123
 Single selection 93
 SIROCAM 10, 17, 131
 Square pixels 146
 Stand height 99
 Stand-alone installation 42
 Status bar 125, 146
 Still image 132
 Storage space 87
 SVG 57
 SVG format 57, 60
- T**
- Temple support width 99
 Tone curve 188
 Toolbars 37
 Tooth type 214
 Total backup 249
 Transfer 188
 Transfer function 188
 Treatment room 42
 Tube current 99
 Tube voltage 99, 216
- U**
- Underexposure 22
 Unit passport 10
- V**
- VI 90
 Video acquisition card 10
 Video camera 10, 17
 Video exposure 24, 132
 Video images 71
 Video still image 24, 132
 Viewing stations 42
 Views 86
- W**
- Warnings 270
 Windowing 188
 Windows clipboard 150
 Workstation 42, 43, 46

Write protection206

X

XC90

XI90

XIO10

XOP10

XP90

X-ray acquisition card10

X-ray box127

X-ray equipment209

X-ray film17, 18

X-ray order42, 45

X-ray room42, 43

X-ray sensor10, 127

X-rays18, 22, 122, 127

X-rays, conventional21

XS90

We reserve the right to make any alterations which may be required due to technical improvements.

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