

User's Guide

IDS5

Version 11.1, December 2006



SECTRA



About this document

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Disclaimer

Sectra Imtec AB is not responsible for problems caused by changes in the operating characteristics of the computer hardware or operating system, which are made after the delivery of the software, or for problems that occur as a result of the use of Sectra software in conjunction with non-Sectra software other than the ones explicitly covered in this documentation. For a complete description of warranty, refer to the End User License Agreement supplied with the Sectra PACS product.

Feedback

As part of our commitment to provide the highest quality products and services, we would like to encourage feedback on the quality of this documentation.

If you think we can improve this document in any way, then please send your suggestions to <info.imtec@sectra.se>.

Contents

About this document	ii
1 Disclaimer	ii
2 Feedback	ii
1 Introduction	1
1.1 Intended use	1
1.2 Precautions	2
1.3 General safety regulations	2
1.4 Getting help	2
1.5 About IDS5	3
1.6 Related documents	5
2 Getting Started	6
2.1 What's new in IDS5	6
2.2 Starting IDS5	6
2.3 Concurrent user limit warning	10
2.4 Exiting IDS5	10
2.5 Changing Password	11
3 System Overview	12
3.1 The Information Window	12
3.2 The Matrix Window	14
3.3 The Image Windows	15
3.4 The Quick Window	16
3.5 The Print Previewer	17
3.6 The Queue Window	19
4 Key Concepts	20
4.1 System, Role & User	20
4.2 Worklists	21
4.3 Default Display Protocols (DDP)	21
4.4 Teaching Files	22
4.5 Stacks	22
4.6 Scheduled Demonstrations	22
4.7 Collections	22
4.8 Key Images	23

4.9	Concurrent User Engine	23
4.10	Roaming Desktop	23
5	Using the Information Window	24
5.1	Working with Worklists	24
5.2	Working with Patients	39
5.3	Working with Examinations	43
5.4	Mismatch handling	51
5.5	Scanned documents	58
5.6	Import and export	60
6	Using the Matrix Window	73
6.1	Matrix Window Organization	73
6.2	Arranging Images	78
6.3	Adjusting Image Settings	81
6.4	Applying a presentation (manual or DDP)	82
6.5	Creating a DDP	82
6.6	Creating a Manual Presentation	87
6.7	Working with text notes	90
6.8	Deleting images	92
7	Using the Image Windows	95
7.1	Image Window Organization	96
7.2	Image symbols	97
7.3	Operations on Images	100
7.4	Operations on Stacks, Collections and Multiframe Sequences	109
7.5	Key Images	116
7.6	Synchronizing Images	117
7.7	Adjust images individually	120
7.8	Performing Measurements	121
7.9	Putting Annotations in an Image	125
7.10	Overlay plug-ins	128
7.11	Navigating among Images	129
7.12	Fetching Images	130
7.13	Image Calibration	131
7.14	Viewing Virtual 3D Images	133
7.15	Image Addition	134
7.16	Slab view	134
7.17	MPR - Multiplanar reconstruction	137
7.18	3D - Volume rendering	137
7.19	The NM Control	137
7.20	Color Palettes	139

7.21	Clinical Applications	139
7.22	Mammography screening	139
7.23	Mammography CAD	141
7.24	DICOM Presentation States	142
7.25	Compressed images	144
8	Using the Quick Window	145
8.1	Special Commands in the Quick Window	145
9	Using the Stack Tool	147
10	Additional Functionality	151
10.1	Park and restore	151
10.2	Printing images	151
10.3	Reject analysis	154
10.4	Dimming windows	157
11	Sample Workflows	159
11.1	A technician Prepares a New Examination	159
11.2	A radiologist Views a Case	160
11.3	A radiologist Views a Mammography Case	161
12	Setting Options	163
12.1	Configuration structure	163
12.2	Configuring Menus and Toolbars	164
12.3	Configuring General Properties	166
12.4	Configuring Image Display Properties	169
12.5	Configuring Image Tools Properties	171
12.6	Configuring Stack Viewing Properties	175
12.7	Configuring Windows Properties	176
12.8	Configuring Search Properties	179
12.9	Configuring License Properties	181
12.10	Configuring Interaction Modes	182
12.11	Configuring exam type specific settings	183
12.12	Configuring dictation	184
A	What's new IDS5	186
A.1	What's new 11.1	186
B	Command short-cuts	196
B.1	General short-cuts	196
B.2	Information window short-cuts	196
B.3	Matrix window short-cuts	197
B.4	Image window short-cuts	197

B.5	Quick window short-cuts	200
B.6	Stack Tool short-cuts	202
C	Workstation test specification IDS5	203
C.1	Disclaimer	203
C.2	Test information	203
C.3	Introduction	204
C.4	Testing instructions	205
C.5	Comprehensive tests	206
C.6	Workstation specific tests	208
C.7	Testing additional services	215
C.8	Testing auxiliary equipment	218

1 Introduction

The following topics are included in this chapter:

- [Intended use](#)
- [Precautions](#)
- [General safety regulations](#)
- [Getting help](#)
- [About IDS5](#)
- [Related documents](#)

The IDS5 User's Guide provides references and important information on how to use IDS5 effectively. This manual is therefore intended for end users of the product, such as radiologists, radiological technicians and/or nurses.

In order to make best use of this User's Guide, we strongly recommend that you read and familiarize yourself with it in its entirety.

1.1 Intended use

This section contains description of intended purpose as required by the Medical Device Directive 93/42/EEG for the European market, also known as Indications for Use as required in the Quality Systems Regulation 21 CFR Parts 808, 812, and 820 for the American market:

The Sectra IDS5 device is intended for the manipulation and displaying of medical images, including mammograms.

It can show images from different modalities and interfaces to various image storage and printing devices using DICOM or similar interface standards. Device options make possible mammography reading, telecommunications; fast demonstration; prosthesis CAD; 3-D and angiography, etc.; and teleconferencing. Lossy compressed mammographic images are not intended for diagnostic review. Mammographic images should only be viewed with a monitor approved by FDA for viewing mammographic images.

Typical users of this system are trained professionals, including but not limited to physicians, radiologists, nurses, medical technicians, and assistants.

1.2 Precautions

For instructions about safe use of this product, please refer to the [section 1.3 General safety regulations](#).

Important: If any changes are made to the workstation where IDS5 is running, or its environment, you must verify that IDS5 still works well. Changes include the installation of e.g. other software applications, operating system updates or hardware devices. The verification must be done according to the [appendix C Workstation test specification IDS5](#). The product's CE Marking on European Conformity of Safety becomes invalid if this verification is not performed.

1.3 General safety regulations

Please observe the following important safety points when using Sectra products:

- Make sure you follow the recommendations provided by the supplier of all hardware equipment that is used together with Sectra products.
- It is essential that you understand how to use the products properly before using it for any patient examinations. Only use the products for applications for which you have been properly trained. Do not use the products for any purpose other than those for which they are intended.
- Do not use the products with any other products except for those that the supplier of your PACS recognizes as compatible.
- Operation of the products without proper training, for unintended purposes or with incompatible equipment could lead to fatal or other serious personal injury.

1.4 Getting help

Sectra IDS5 provides powerful online and context sensitive help at your fingertips. These resources are described here.

1.4.1 Online help

You can, at any time, access this user's guide online. In the online help you will find all the documentation about the application.

► **Using online help**

1. From the **Help** menu, select **Help**.
 - **Contents** - The contents tab shows a tree view of the online help. It allows for drilling down from the top level chapters to the underlying sections.
 - **Index** - The index tab lists all section headings and index terms alphabetically.

- **Search** - The search tab allows searching for any word in the online help. Enter the word or phrase and click **List Topics** to get a list of all occurrences. E.g. if you do a full-text search on the word "report," every topic that contains the word "report" will be listed.

Note: All languages do not support all help functions.

1.4.2 Context sensitive help

By selecting the **On context** command from the **Help** menu you can get help with a specific command. When you select **On context** the mouse pointer will have a question mark attached to it. This indicates that you now are in help mode. When you click on a command, instead of executing the command, the reference manual will open at the location where the command in question is documented.

1.5 About IDS5

Warning: Note for the United States: *Federal law restricts this device to sale by or on the order of a physician.*

IDS5 (Image Display System, version 5) is the name of a product family. The IDS5 products are multi-modality viewing software for viewing and handling medical images.

IDS5 operates under Windows 2000 and Windows XP.

Read about hardware requirements for IDS5 in the [System Requirements Sectra PACS \[2\]](#) document.

You can find more specific information about this IDS5 Workstation by selecting the **About...** command from the **Help** menu. The pop-up dialog shows information mostly useful for the Sectra support staff:

- *Version* shows the current software build number that this IDS5 is running.
- *Year of Release* shows in what year this IDS5 was released.
- *Installed modules* modules shows which modules are installed on this IDS5.

1.5.1 Products

This guide covers the following IDS5 products:

IDS5/dx.net A multi-modality software designed for use by radiologists, i.e. mainly for primary viewing and reporting. IDS5/dx.net usually runs on a powerful PC workstation with two, three, or four monitors.

IDS5/mx.net A multi-modality workstation optimized for primary reading of mammography images. IDS5/mx.net usually runs on a three

	monitor system, with two high resolution monitors for the images.
IDS5/qa.net	Designed to be a capable workstation for the radiology technician to perform quality assurance, image manipulation, and image arrangement. The Sectra PACS workstations feature a hanging concept where image manipulation and arrangement are stored to provide efficient reading by the radiologist.
IDS5/mqa.net	Designed to be a capable mammography workstation for the radiology technician to perform quality assurance, image manipulation, and image arrangement. The Sectra PACS workstations feature a hanging concept where image manipulation and arrangement are stored to provide efficient reading by the radiologist.
IDS5/cl.net	An advanced review workstation designed for use by clinic assistants or nurses. It is typically an IDS5/dx.net with limited functionality, i.e. no archive access, but access only to relevant pre-determined images. It provides basic yet fast viewing.
IDS5/doc.net	Used for scanning documents into the PACS. As it has the same user interface as the other IDS5 products, it can easily be incorporated in the hospital's workflow.
IDS5/home	Intended for the radiologist's who works from home. Through either pushing or pulling images the radiologist can use his home computer for full quality diagnostic review.
IDS5/send	Used to send radiology examinations to other facilities. For instance, a satellite clinic that produces images but performs no reviews can use IDS5/send to send the images for review at a central hospital.

1.5.2 Clinical Applications

For special needs, purpose-built Clinical Applications are available that integrate with IDS5. You should only use Clinical Applications from Sectra, or 3rd party vendors who are members of the *Clinical Solutions Network*[™].

Disclaimer: Sectra takes no responsibility for the use of Clinical Applications from 3rd Party Vendors, as these are not part of the Sectra IDS5 Workstation. Clinical Applications from 3rd Party Vendors are software products activated from IDS5 workstations. Clinical applications are normally started from the Clinical Applications sub-menu in the right mouse button pop-up menu in the IDS5 image window.

The previously described procedure for starting Clinical Applications is only valid for the default configuration of IDS5. However, it is possible for a user or WISE administrator to change the layout of the user interface, thereby enabling other options for starting Clinical Applications.

1.5.3 Speech Applications

The Sectra IDS5 Workstation can be used together with speech recognition applications from 3rd party vendors.

Disclaimer: Sectra takes no responsibility for use of speech applications from 3rd party vendors, as these are not part of the Sectra IDS5 Workstation. Speech applications from 3rd party vendors are software products that are started as separate applications under Windows.

1.6 Related documents

[1] System Administrator's Guide IDS5

[2] System Requirements Sectra PACS

[3] Installation Guide IDS5

[4] Reference Manual IDS5

[5] Release Notes IDS5

2 Getting Started

The following topics are included in this chapter:

- [What's new in IDS5](#)
- [Starting IDS5](#)
- [Concurrent user limit warning](#)
- [Exiting IDS5](#)
- [Changing Password](#)

This chapter deals with how to start and exit the IDS5 application.

2.1 What's new in IDS5

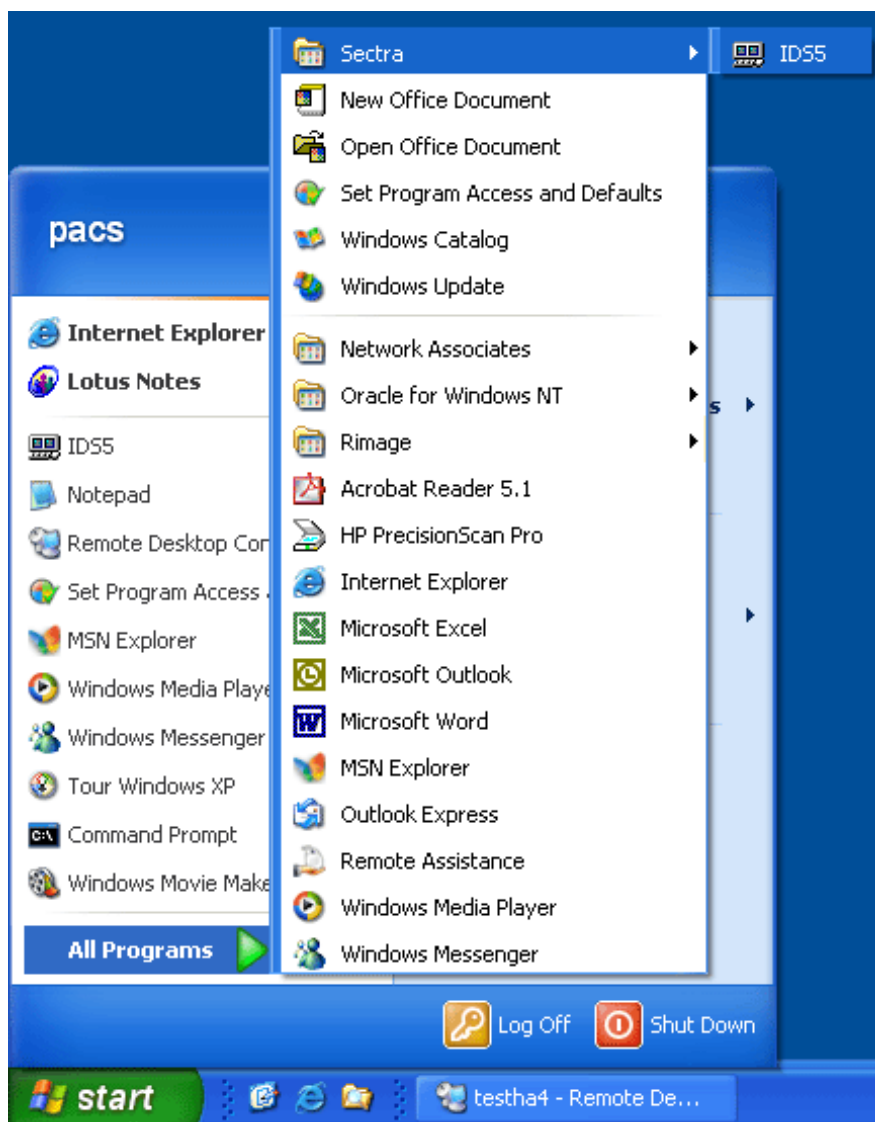
Let us introduce version 11.1 of Sectra PACS. For information about the most important new features in release 11.1 of Sectra PACS, as compared to 10.2, see [appendix A What's new IDS5](#).

2.2 Starting IDS5

Running the IDS5 Setup program, Setup automatically creates a new program group and new program items in the Windows® Start menu. You are then ready to start IDS5.

► **To start IDS5**

1. From the **Start** menu, select the **Sectra** program group and click **IDS5**. The screen shot below shows the Sectra program group and the IDS5 icon.



The Sectra program group and icons.

2. Click the **IDS5** icon to start the application. You will be presented with the IDS5 login dialog. The login dialog box is shown below.



The login dialog.

There are several different ways of performing a login to the IDS5. The standard way of logging in, also called manual login, is to have a username and password. If a WISE/lock security device is connected to your Workstation, it may be possible to use other login devices, i.e. a card or fingerprint reader.

► **To perform a login**

1. In the **User name** field, type your user name.
2. In the **Password** field, type your password.
3. Click the **OK** button.

Note: You can reset your preferred language to the default language and log in at the same time by holding down the **SHIFT** key and click **OK**.

The IDS5 Information Window will be opened. If you are using a WISE/lock security device, click the **checkmark** button ✓ to switch to WISE/lock login.

If IDS5 is configured to use a fingerprint reader, the login dialog box will appear as follows (see below).



The fingerprint login dialog.

► **To perform a fingerprint login**

1. Place your finger on the fingerprint reader. If you do not want to login with your fingerprint click the **Cancel** button to switch to the standard login dialog.

If your fingerprint is matched successfully the IDS5 Information Window will appear. If it does not match, you can either choose to try again, do an enrollment of your finger, or switch to password login. Sometimes a fingerprint does not match because your finger, or the fingerprint reader is dirty. Clean them both and try again.

► **To enroll your fingerprint**

Enrolling your fingerprint involves placing your finger on the fingerprint reader three times in order to create a generalized fingerprint reading. This is done in order to achieve a more accurate reading and reduce image noise.

1. Apply your finger on the fingerprint reader and lift it when IDS5 tells you to. Repeat two more times.
2. IDS5 has made three different fingerprint records and will now try to create a single generalized one.
3. If the generalization fails, return to step 1.

4. If the generalization is successful, you can verify your enrolled fingerprint by typing your user name and password.

2.3 Concurrent user limit warning

If the warning: "Usage limits have been exceeded for some concurrent users licenses. The following licenses could not be fetched from the server:" is shown, one of the two following scenarios has occurred:

1. There is no basic product available, e.g. all available licenses for the product you have requested are currently being used by your colleagues. Please wait until a colleague logs out or contact your system administrator.
2. Not all add-ons are available, e.g. all available licenses for those particular add-ons are currently being used by your colleagues. You can still work with the basic product but not with the unavailable add-ons. For the add-ons to be available please wait until a colleague logs out or contact your system administrator.

For further information please refer to [section 4.9 Concurrent User Engine](#), [section 4.10 Roaming Desktop](#) and [section 12.9 Configuring License Properties](#).

2.4 Exiting IDS5

When you have finished working you normally perform a logout from IDS5 to give other users access to the Workstation. A logout can also occur automatically if the system has been idle for an extended period of time or if you have logged in to another workstation somewhere else.

► To perform a logout

1. From the **File** menu, select **Logout**.

The login dialog appears.

Usually there is no need to exit IDS5. However, if you are installing new equipment, or in cases of system errors it might be necessary to quit the entire application.

► To exit IDS5

1. From the **File** menu, select **Logout**.
2. In the login dialog, click **Exit**.

You will return to Windows.

2.5 Changing Password

▶ To change your password

1. From the **File** menu, select **Change password...**
2. In the **Change Password** dialog, enter the old password, the new password twice and then click **OK**.

You have now changed your password.

Note: The following characters are prohibited in passwords.

\		&	<	>	^	=	"	;	()	`	'	"	space
---	--	---	---	---	---	---	---	---	---	---	---	---	---	-------

3 System Overview

The following topics are included in this chapter:

- [The Information Window](#)
- [The Matrix Window](#)
- [The Image Windows](#)
- [The Quick Window](#)
- [The Print Previewer](#)
- [The Queue Window](#)

This section provides an overview of the different windows in the IDS5 application, describes what kind of information the different parts of the windows show, and illustrates the tasks that can be performed.

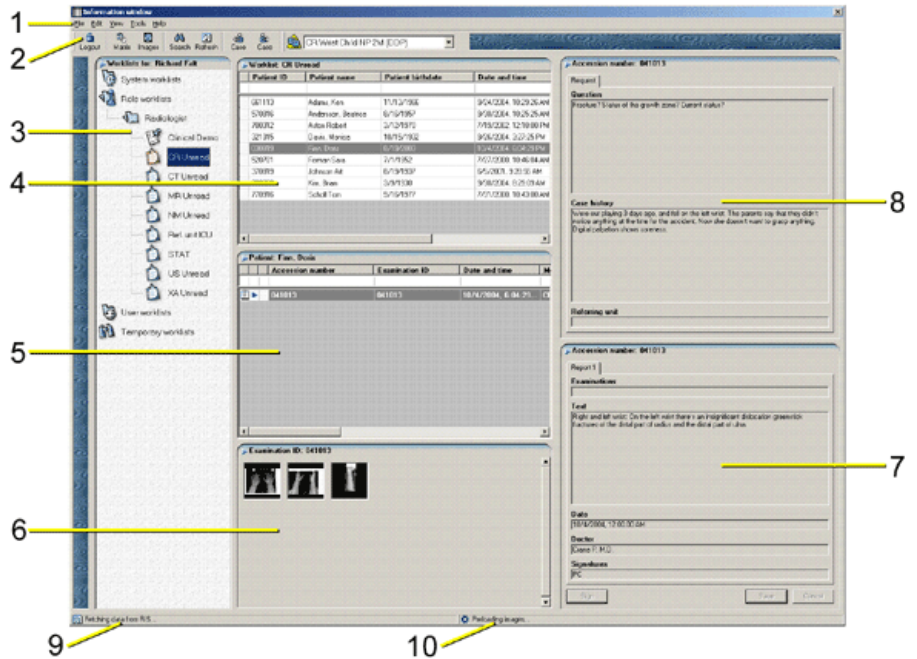
3.1 The Information Window

The Information Window enables you to view all information, apart from the full-size images, for any patient in the PACS.

The Information Window is primarily used for handling the higher layers of the data structure used by IDS5, i.e. worklists, patients, requests, and examinations. Retrieval of examinations from the archive is also done using the Information Window.

The main purpose of the Information Window is to provide an overview of the current worklist, and to select patients for image viewing.

The figure below shows the main elements of the Information Window.



The Information Window.

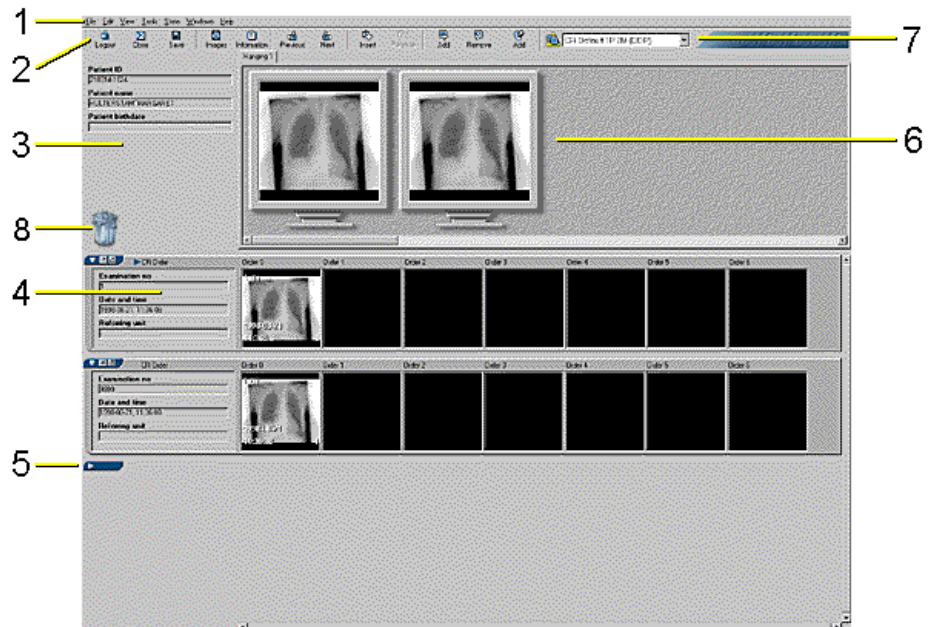
The Information Window consists of the following elements:

- Menubar (1) — Commands are available in drop-down menus on the menubar.
- Toolbar (2) — The configurable toolbar contains icon shortcuts to some of the commands available in the drop-down menus on the menubar.
- Worklist View (3) — Displays all available worklists.
- Patient List (4) — Displays all patients for the currently available worklist.
- Examination List (5) — Displays examinations for the currently selected patient.
- Series List (6) — The series of images for the currently selected examination are represented by thumbnails in the series list. Double-clicking on a thumbnail opens the Quick Window, displaying a full screen version of the thumbnail image.
- Report View (7), Request View (8) — Information for the request which corresponds to the currently selected examination, is displayed in the extreme right of the window. Electronic and scanned requests are shown here in the request view, and all reports for the request are shown in the report view. Double-clicking on a scanned request opens a fullscreen version of the scanned document.
- Fetching RIS data status (9) — The status bar shows when RIS data is being fetched.
- Preload status (10) — The status bar shows when preload of images is in progress.

3.2 The Matrix Window

The Matrix Window is used for organizing the relevant images for a patient. It is also convenient for obtaining an overview of the images in the examination request.

The figure below shows the main elements of the Matrix Window.




The Matrix Window.

The Matrix Window consists of the following elements:

- Menubar (1) — Commands are available in drop-down menus on the menubar.
- Toolbar (2) — The configurable toolbar contains icon short cuts to some of the commands available in the drop-down menus on the menubar.
- Patient Text View (3) — This area shows the personal ID, name and date of birth for the current patient.
- Matrix (4) — Below the patient text view and the miniature screens is the matrix. The matrix consists of a number of rows, one for each examination. Each row begins with an examination text view, showing some data about each examination. Series icons are located to the right of the examination text view and each represents one series in the examination. At the bottom and right side of the matrix there might be scrollbars to allow scrolling in the matrix, if some icons do not fit on the screen. Note: If examination wrapping is used, the series icons may be wrapped onto several rows within each examination. However all series icons within a single examination should be regarded as located on the same matrix row, even though they may be wrapped onto several physical rows. To learn more about configuring examination wrapping, please refer to [section 12.7 Configuring Windows Properties](#).
- Collapsed exams (5) — Examinations which are not included in the presentation (according to the DDP or manual presentation) are collapsed.

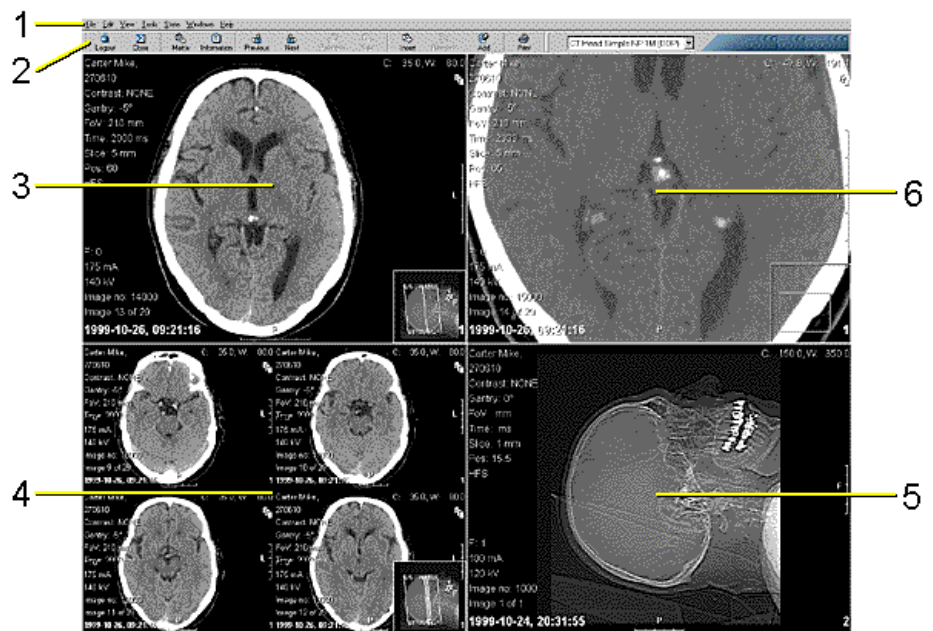
- Miniature screens (6) — The miniature screens symbolize the screens of the computer where the radiologist will view the images for this case.
- Presentation Selector (7) — This drop-down menu shows the currently selected DDP or manual presentation.
- Recycle bin and Reject bin (8) — The recycle bin is used for permanently deleting images. The reject bin is used for deleting images from this examination but allowing the rejected images to be analyzed at a later time.

Important:  For information on warning symbols next to the presentation selector, see [section 6.4 Applying a presentation \(manual or DDP\)](#).

3.3 The Image Windows

The Image Windows are used by the radiologist or clinician for the actual clinical viewing of the images. Images can be manipulated in an Image Window and a number of images can be displayed at once in different formats.

The figure below shows the main elements of the Image Window.



An Image Window.

An Image Window consists of the following elements:

- Menubar (1) — Commands are available in drop-down menus on the menubar.
- Toolbar (2) — The configurable toolbar contains icon short-cuts to some of the commands available in the drop-down menus on the menubar.
- Series in stack mode (3) — this partition shows a series of images in stack mode with a scanogram in the bottom right corner of the image. The visible image is denoted in the scanogram by a white line.

- Series in tile mode (4) — This partition show a series of images which has been tiled (2x2), with a scanogram in the bottom right corner. The visible images are denoted by white lines in the scanogram.
- Zoom to fit (5) — The size of this image has been zoomed to fit the partition.
- Zoomed with pan overlay (6) — This partition shows a section of the image which has been enlarged using the zoom function. The rectangle in the lower right corner represents the entire real image with the viewport or visible area of the image (a smaller rectangle) superimposed upon it.

The Image Window can be partitioned in different ways. Supported partitions are 1x1, 1x2, 1x3, 2x1, 2x2, 2x3, 3x1, 3x2 and 3x3. The 1x1 partition means that only one image appears on the screen. A 1x2 partition means that two images appear side by side on the screen, i.e. that the window comprises two *parts*. The figure above shows a 2x2 partitioning. It can be configured to toggle between the current partition mode and 1x1 mode by using a mouse double-click combination. Read more about this in [section 12.5 Configuring Image Tools Properties](#).

Important:

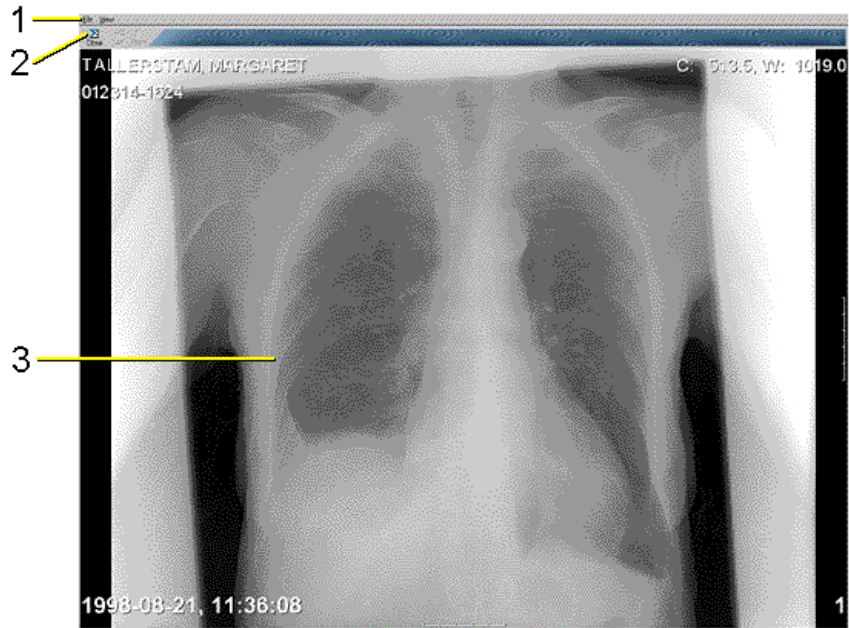


For information on warning symbols next to the presentation selector, see [section 6.4 Applying a presentation \(manual or DDP\)](#).

3.4 The Quick Window

The Quick Window is the window that pops up when you double-click on an image-thumbnail in the Information Window, or an image-icon in the Matrix Window (unless you have configured the Image window to be opened for these operations). The Quick Window is used for applying settings, such as grayscale settings, on a single image.

The figure below shows the main elements of the Quick Window.



The Quick Window.

The Quick Window consists of the following elements:

- Menubar (1) — Commands are available in drop-down menus on the menubar.
- Toolbar (2) — The configurable toolbar contains icon short-cuts to some of the commands available in the drop-down menus on the menubar.
- Image Display (3) — The selected image is shown in the remainder of the display.

Using the right mouse button, you can select various actions to perform on the image. Any action will then be performed simultaneously on the image's icon in the Matrix window.

3.5 The Print Previewer

The main purpose of the Print Previewer is to show what the print-out will look like when printed and it allows you to effectively and precisely control your print-outs. This facility lets you select a suitable partitioning, i.e. how many rows and columns with images the print-out should have. It also enables you to perform an automatic partitioning based on the modality of the first image. In the Print Previewer most of the image window commands can be performed on each separate image, like zooming, cropping, setting grayscale, flipping and rotating the image.

The figure below shows the main elements in the Print Previewer Window.



The Print Previewer.

The Print Previewer consists of the following elements:

- Menubar (1) — Commands are available through drop-down menus from the menubar.
- Toolbar (2) — The configurable toolbar contains icon short-cuts to some of the commands available through the drop-down menus on the menubar.
- Printer selection box (3) — Here you select which printer to use.
- Image area (4) — This is the most important part of the Print Previewer and is where the image parts are shown. The image area is a miniature of the real print-out.

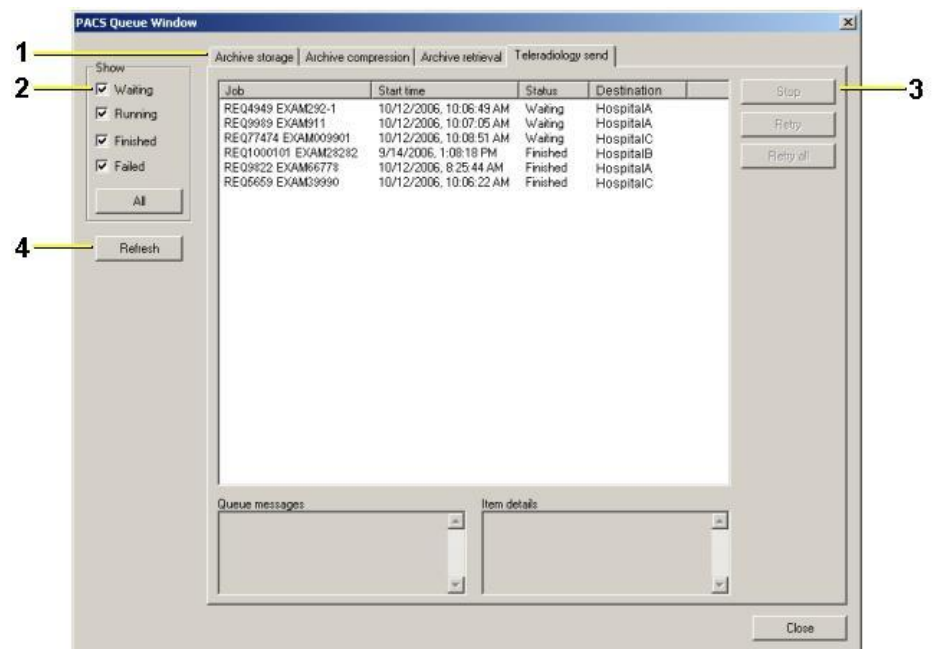
- The Print Previewer also has a status bar showing printer status (5), queue status (6), auto status (7), and the name of the current printer (8).
- The configure button (9) makes it possible to configure your Windows printer.

The Print Previewer can be partitioned in different ways. Supported partitions are everything from 1x1 to 5x5. The 1x1 partition means that only one image appears on the screen. A 1x2 partition means that two images appear side by side on the screen, i.e. that the window comprises two *parts*.

3.6 The Queue Window

The Queue Window is used for viewing the progress of certain tasks, like sending teleradiology and archiving. It can also be used to retry jobs that have failed and to cancel jobs.

The figure below shows the main elements of the Queue Window.



The Queue Window.

The Queue Window consists of the following elements:

- Queue tabs (1) — This is where you select which queue to view. Depending on how the system is configured and set up, one or several queues will be available. E.g. Teleradiology send, IDS5/home, Archive, Archive Compression, Archive retrieve, Prefetch.
- Progress status selection (2) — Statuses for the jobs that are displayed in queue.
- Command buttons (3) — This is where you select to retry or stop certain jobs in a queue.
- Refresh button (4) — Info about each queue is fetched with this button. Only the currently showing queue will be updated.

4 Key Concepts

The following topics are included in this chapter:

- [System, Role & User](#)
- [Worklists](#)
- [Default Display Protocols \(DDP\)](#)
- [Teaching Files](#)
- [Stacks](#)
- [Scheduled Demonstrations](#)
- [Collections](#)
- [Key Images](#)
- [Concurrent User Engine](#)
- [Roaming Desktop](#)

This section describes some of the key concepts in IDS5.

4.1 System, Role & User

The user concept in IDS5 comprises three levels: system, role, and user levels. Objects such as worklists and presentations are connected to one of these levels.

Connecting objects to a user means that only that user can view the object, and the object is not shown when another user is logged in to IDS5.

A user can be part of one or more roles, i.e. groups of users. Role objects can be accessed by users that are part of that role, but not by other users. Rights to perform certain tasks are given at role level. The set of rights for you as a user is the sum (union) of rights for all your roles.

All users belong to the system level role. A system level object will therefore be available for everyone.

Configurations are often connected to one of these three levels, e.g. the settings in the Options dialog. Normally a user can only change his personal settings. If there are conflicting settings, the User level configurations override role level configurations, and the role level overrides the system level. For users that are part of several roles, it is necessary to define the "Preferred role". If several role configurations conflict, the configuration of the preferred role will be used. All user and role settings are configured in WISE/tools by a system administrator.

4.2 Worklists

A worklist is a set of examinations that a User is to work with. For instance, it could be the set of cases that a radiologist is assigned to read. Which examinations are included in a worklist is defined by a search criteria. For example, a worklist may consist of all examinations originating from a specific modality.

Note: A worklist is dynamic, i.e. examinations may be added or removed over time.

Example: If the search criteria for a worklist is set to "modality is CT" all CT examinations will be added to the worklist. If a new CT examination is added to the PACS, this examination will automatically be included in this worklist.

You may sometimes see a reference to a "matched" examination. Matched examinations in worklists are examinations that match the specific search criteria.

4.3 Default Display Protocols (DDP)

Default display protocols (DDPs) are used to automatically arrange images according to your hospital's preferred layout principles. You will discover that DDP's will save a lot of time that would otherwise be spent manually arranging images.

A DDP is a *template*, or a set of rules, that define which images should be displayed, which settings should be used for these images, and which other examinations should be displayed along with the current examination.

A DDP consists of the following components:

- Examination display choice — The DDP determines which examinations to display together with the base examination. The base examination is usually the most recent examination, and is used by the IDS5 to select the appropriate DDP. Other examinations which are to be displayed are identified by examination type and chronology. The order of examinations is not part of a DDP, as examinations always are presented in chronological order.
- Number of monitors — Using a DDP makes it possible to define the number of monitors used to display the images. When the IDS5 selects a DDP it first checks the number of physical monitors on the Workstation, and where possible, selects a DDP that uses the same number of virtual monitors.
- Hangings — A hanging is the arrangement of images on the screens, and is comparable to image hangings on a light box. Apart from screen partitioning, image settings are also part of the hanging. There can be several hangings for each case. The full on-screen arrangement of a case, i.e. the group of hangings, is called a presentation. Since the output of a DDP is a presentation, a DDP automatically generates a full on-screen arrangement.
- Image/Series settings — You can determine the settings for images and for series of images, within a DDP. Such settings include window settings, zoom status, tile mode, choice of initial image, and whether or not a scanogram should be displayed, etc.

4.4 Teaching Files

Many radiologists today have a teaching file that consists of interesting examinations used for educational purposes. When reading a particularly interesting case during the course of normal work, the radiologist simply adds the examination to a teaching file.

Another use of teaching files is at demonstrations. In many clinical situations, demonstrations are a vital part of the radiologist's and the clinician's work. Examinations performed in a radiology department are regularly displayed and discussed by various medical professionals. In this case you use a teaching file with the examinations to be discussed.

The difference between a teaching file and an ordinary worklist is that teaching files are *static*, i.e. they are not based on any search criteria. Individual examinations have to be explicitly added to a teaching file.

4.5 Stacks

In IDS5 a stack is a number of images taken on the same occasion by the same modality. These images are handled together and are often treated as one single image. For more information on stacks please see [section 7.4 Operations on Stacks, Collections and Multiframe Sequences](#).

4.6 Scheduled Demonstrations

To provide even more support for clinical demonstrations, it is possible to create scheduled demonstrations. These are similar to ordinary teaching files in that they are *static*, i.e. they are not based on any search criteria. Individual examinations have to be explicitly placed in a scheduled demonstration.

A scheduled demonstration is more like a calendar than a single list of examinations, as it can contain several occasions specified at certain dates and times. In addition, the scheduled demonstration may have a schedule associated with it, for periodic demonstrations. A schedule makes it easier to add examinations to a demonstration, since the scheduled demonstration can guide the user to the next occasion according to the schedule.

4.7 Collections

In IDS5 a collection is also a number of images, but here the images are selected and assembled by the user. There are many similarities between stacks and collections, but also some important differences. For example, a collection does not normally have a scanogram associated with it.

4.8 Key Images

In IDS5, the concept of Key Images can be used to mark important or interesting images. Therefore, when viewing images you can use special commands to quickly navigate among key images.

4.9 Concurrent User Engine

The Concurrent User Engine server add-on package enables every Sectra workstation in the PACS to work according to a concurrent user model. This means that the Concurrent User Engine will keep track of the number of simultaneous users and allows all workstations in the PACS to start different types of IDS5.

4.10 Roaming Desktop

The Concurrent User Engine allows for a Roaming Desktop concept which presents the same desktop to you regardless of which workstation you log on to. You will get access to the same information, the same set of tools and settings as you are used to. For example whenever a user of the role "technician" logs on an IDS5/qa.net will start, if a user of the "radiologist" role logs on an IDS5/dx.net will start.

5 Using the Information Window

The following topics are included in this chapter:

- [Working with Worklists](#)
- [Working with Patients](#)
- [Working with Examinations](#)
- [Mismatch handling](#)
- [Scanned documents](#)
- [Import and export](#)

The Information Window gives you an overview of all the information stored in the PACS. To make it easier to find information about a certain type of patient, you can create worklists that contain patients that match a certain search criteria. You can browse through the examinations for each patient, look at requests and reports, fetch images from the archive, etc.

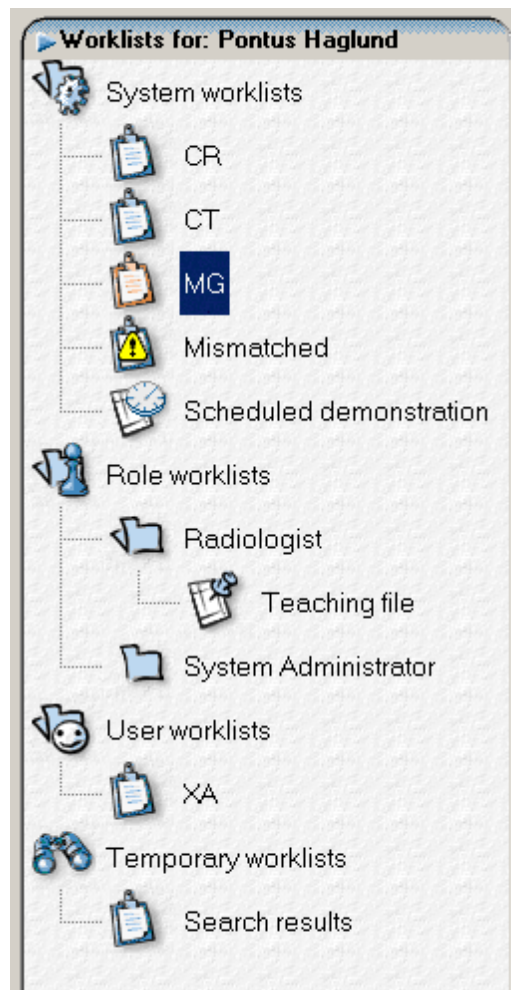
This section provides information about how to use the functionality offered by the Information Window to handle patient information in an effective manner.

5.1 Working with Worklists

All worklists and folders are displayed in the worklist view, see the figure below. There are four categories of worklists:

- System worklists — These worklists and folders are common to all users. There can also be a "Mismatched" worklist here. All examinations that can not be matched against the RIS will end up here, see [section 5.4.2 The "Mismatched" worklist](#). Note that this worklist can only be seen in IDS5/dx.net, IDS5/qa.net and IDS5/home.
- Role worklists — These worklists and folders are common to the users in your role. There is a subfolder for each role that each user belongs to.
- User worklists — These worklists and folders are personal for the current user.
- Temporary worklists — Temporary worklists and search worklists will appear here.

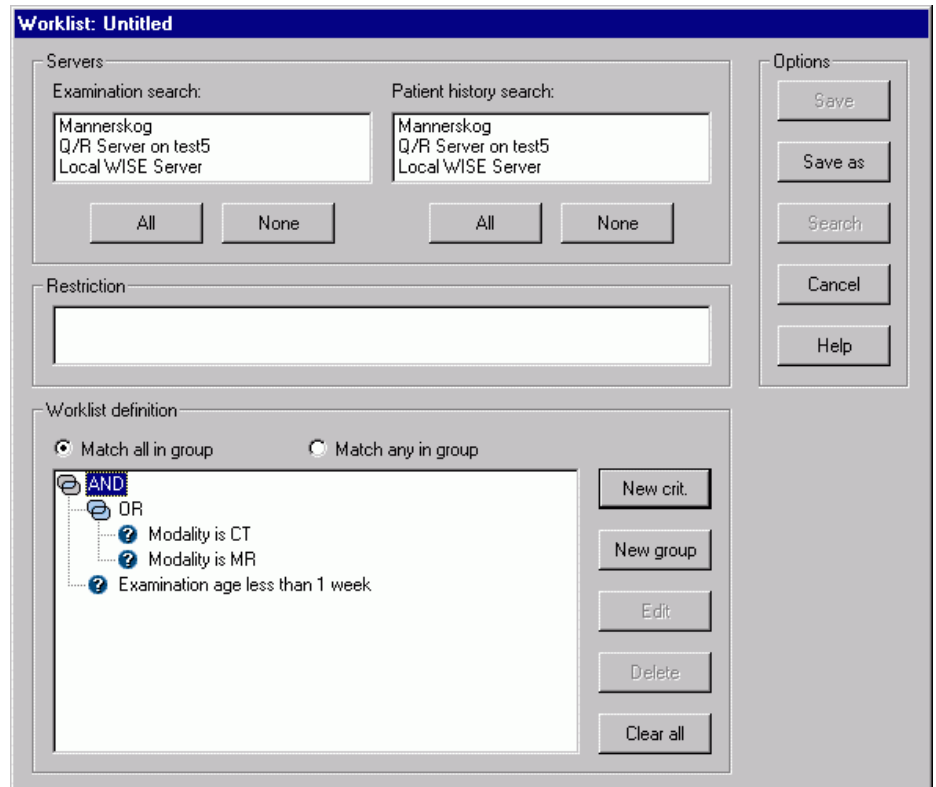
By double-clicking on a folder, the worklists in that folder are either expanded or collapsed. In the figure below all folders are expanded. Select a worklist/folder by clicking on it with the left mouse-button. The worklist/folder is then highlighted.



The worklist view.

5.1.1 Creating a new worklist

Worklists are specified by a search criteria. All examinations that match the search criteria will be placed in the worklist. The search criteria are specified in the Worklist dialog box (see figure below).



The Worklist dialog.

The Worklist dialog box consists of the following elements:

- | | |
|----------------------------|---|
| Servers | Displays the available servers that can be searched. The local WISE server is selected as the default. Click on the servers you want to search. |
| Restriction | The system administrator can impose restrictions that prevent you from performing certain kinds of searches. Any restriction is displayed in the restriction field. |
| Worklist definition | Displays the current search criteria, in the form of a tree structure. You enter a new criterion by clicking the New crit. button. A criterion input dialog appears, where you enter the attribute (e.g. "Modality"), the relation (e.g. "is"), and the value to compare with (e.g. "CT"). Criteria can be grouped, this means that a number of criteria are associated with a condition that states "Match all criteria in group" or "Match any criterion in group" (also known as AND and OR operations). Adding a group is done by clicking the New group button. New groups or criteria are always added within the currently selected group. You can organize the tree further by drag-and-drop of groups or criteria. The currently selected group's condition can be changed by the radio buttons Match all in group and Match any in group above the tree box. You can edit a criterion by double-clicking on it or by clicking the Edit button. Clicking the Delete |

button removes the currently selected criterion or group. The **Clear all** button clears the whole criteria.

Example: There is one group with the two criteria "Modality is CT" and "Modality is MR" and the **Match any in group** radio button is checked for that group. In addition, there is a criterion at root level that states "Examination age is less than 1 week". The **Match all in group** radio button is checked for the root level. This definition will generate a worklist with examinations that are less than one week old and either from a CT or an MR.

Be as specific as possible when defining the worklist. Imprecise criteria like "Body part contains a" is cumbersome for the server to process. If such a worklist is used often, it may affect the performance of the entire PACS. You should also avoid worklist definitions containing only criteria with the comparators "contains", "is not", "is not current user", "is defined" and "is undefined".

The comparator "is defined" means "has a value", or in other words "is not empty". The comparator "is undefined" of course means the opposite. The comparator "is not" is interpreted as "is defined, but is not equal to". In other words, an attribute that has no value will not match an "is not" criterion. To find such examinations, combine with an "is undefined" criterion. This is also the case with the comparator "is not current user", which is interpreted as "is defined, but is not equal to the login name of the currently logged in user".

Example: A criterion "Body part is not HEAD" will return all examinations that have a defined value, that is not equal to HEAD. To also find the examinations that

have no value at all for the body part attribute, the criteria should be "Body part is not HEAD **OR** Body part is undefined".

Note: When using Archive Status as the search criteria, the displayed archive status may differ from that chosen in the query. This is due to the way the IDS5 presents archive status for an examination. If, for example, both an original and a copy of an examination are available, IDS5 will set Archive Status to "Original" since "Original" has higher priority than "Copy". The available Archive Status values are, ordered by priority (highest priority first):

- Retrieving
- Sending
- Queued
- Failed
- Warning
- Original
- Archived
- Copy
- Undefined

Furthermore, when searching all examinations with a certain Archive Status, preferably use additional criteria to narrow down the search. Otherwise the number of hits will most certainly be too great. A suitable search expression could for instance be "Archive Status is Original **AND** Date and Time is less than 10/28/2003 AND RIS Status is Signed".

► **To create a worklist**

1. From the **Tools** menu, click **Worklists** and **New Worklist...**

The **Worklist** dialog appears.

2. Select which servers you want to search. The local WISE server is selected as default, but you can change this by clicking on the servers you want to search.
3. Specify the search criteria.
4. Click the **Save as** button to save the worklist.

The **Save as** dialog appears.

5. Type in a name for the new worklist.
6. Select whether the worklist should be saved for personal, role or system use by clicking in the drop-down list. Note that if you do not have permission to save for role or system use, these alternatives will not be displayed in the drop-down list. Note also that the name of the new worklist has to be unique, i.e. there cannot be two worklists with the same name, on the same level, under for example "System worklists".

7. Click the **Save** button.

The new worklist will be saved and displayed in the Worklist View.

5.1.2 Creating reject worklists

Note: To be able to create, edit or use reject worklists, you must have the **Reject Analysis Package** license and the **Reject Analyze Series** permission. This permission is available on a per role basis and can be configured in WISE/tools by your system administrator.

There are two special cases of a dynamic worklist applicable for sites employing [section 10.3 Reject analysis](#). These worklists work exactly the same as other dynamic worklists, as described above, with the following addition:

Rejected worklists	Only lists examinations containing rejected series, i.e. lists examinations that have one or several series with reject status Rejected new or Rejected analyzed. There is also the additional optional search criterion "reject reason". These are useful e.g. for teachers to illustrate how images should not be taken.
Reject analysis worklists	Only lists examinations containing rejected series that are to be analyzed, i.e. lists examinations that have one or more series with reject status Rejected new. There is also the additional optional search criterion "reject reason". These are used when performing reject analysis.

► **To create a reject worklist**

1. From the **Tools** menu, click **Worklists** and **New rejected worklist...** or **New reject analysis worklist...**
2. In the **Worklist** dialog you define your worklist just as for ordinary worklists. Additionally you can also search, or exclude, specific reject reasons. Most likely you do not want to see images that are soft deleted (reject reason "Soft delete"). This is achieved by adding the requirement "reject reason NOT EQUAL Soft delete".
3. Click the **Save as** button to save the worklist.
4. Type in a name for the new worklist.
5. Select whether the worklist should be saved for personal, role or system use by clicking in the drop-down list. The worklist will only be visible to users with the proper permissions, see above.
6. Click **Save**.

The new worklist will be saved and displayed in the worklist view.

5.1.3 Creating a Teaching File

There is a second type of worklists called Teaching files. These worklists are static, i.e. they are not based on search criteria. For an examination to be part of a teaching file it has to be explicitly placed there. Teaching files, for example, can be used to store interesting examinations.

► **To create a new teaching file**

1. From the **Tools** menu, click **Worklists** and **New Teaching File**.

The **New teaching file** dialog appears.

2. Type a name for the new teaching file.
3. Select whether the worklist should be saved for personal, role or system use by clicking in the drop-down list. Note that if you do not have permission to save for role or system use, these alternatives will not be displayed in the drop-down list. Note also that the name of the new teaching file has to be unique, i.e. there can't be two teaching files with the same name, on the same level, under for example "System worklists".
4. Click the **Save** button.

The new teaching file will be saved and displayed in the Worklist View.

There are several ways of adding one or more examinations to a teaching file. If an examination is added from the Matrix or Image windows, a specific teaching file presentation will be created automatically. This is not the case when adding an examination from the Information window (Patient or Examination lists).

1. The easiest way to add one or more examinations is to use the [Examination list](#).
2. It is also possible to add [all worklist examinations](#) (i.e. examinations that match the worklist criteria) for a number of patients, to a teaching file.
3. It is also possible to add the [current base examination](#) to a teaching file while viewing it in the Matrix or Image windows. In this case, the current presentation of the images will also be saved as a specific teaching file presentation, see [section 6.6 Creating a Manual Presentation](#).

► **To add an examination to a teaching file (Examination List)**

1. Select the examinations you want to add in the **Examination list**. By pressing the CTRL key, several examinations may be selected at the same time.
2. From the **Examination list** pop-up menu, select **Add to teaching file**.

The **Add exam** dialog appears.

3. Select the teaching file where you want to save the examinations.
4. Click the **Add** button. The selected examinations will be added to the selected teaching file.

▶ **To add all worklist examinations to a teaching file**

1. Select the patients whose worklist examinations you want to add to the **Patient list**.
2. From the **Patient list** pop-up menu, select Add examination to teaching file.
The **Add exam** dialog appears.
3. Select the teaching file where you want to save the examinations.
4. Click the **Add** button. The worklist examinations will be added to the selected teaching file.

▶ **To add the current base examination to a teaching file**

1. Select **Add base to teaching file** from the Matrix or Image window toolbar (or **Tools** menu).

The **Add exam** dialog appears.

2. Select the teaching file where you want to save the examination.
3. Click the **Add** button.

The examination will be added to the selected teaching file, and a teaching file presentation will be created.

5.1.4 Creating a Scheduled Demonstration

There is a third type of worklist that is called Scheduled demonstration. These worklists are static, i.e. they are not based on search criteria. For an examination to be part of a scheduled demonstration it has to be explicitly placed there. This type of worklist is similar to a calendar that contains entries on specific dates and times. Each entry works much like an ordinary teaching file in that it stores examinations statically. Scheduled demonstrations are well-suited for clinical demonstrations which follow a schedule.

▶ **To create a new scheduled demonstration**

1. From the **Tools** menu, click **Worklists** and **New Scheduled demonstration**.

The **New scheduled demonstration** wizard appears.

2. Type in a name for the new scheduled demonstration.
3. Select whether the worklist should be saved for personal, role or system use by clicking in the drop-down list. Note that if you do not have permission to save for role or system use, these alternatives will not be displayed in the drop-down list. Note also that the name of the new scheduled demonstration has to be unique, since there cannot be two scheduled demonstrations with the same name on the same level under for example "System worklists".
4. You may type something in the **Room** field.
5. You may type something in the **Note** field.

6. Click the **Next** button.
7. Enter the schedule for this worklist by selecting any number of days, selecting the time and responsible radiologist. Select whether the worklist schedule applies to every week, odd weeks or even weeks.
8. Click the **Next** button.
9. A list of referring units is shown. Checkmark all referring units that are likely to send patients that could be added to this scheduled demonstration.
10. Click the **Next** button.
11. The freeze time specifies how many hours before the demonstration actually takes place it is possible to add examinations to it. The default value is zero.
12. Click the **Finish** button.

The new scheduled demonstration is saved, and will be displayed in the Worklist View.

There are several ways of adding one or more examinations to a scheduled demonstration. If an examination is added from the *Matrix* or *Image* windows, a specific demonstration presentation will be automatically created. This is not the case when adding an examination from the *Information Window* (Patient or Examination lists).

1. The easiest way to add an examination is to use the [Examination list](#).
2. It is also possible to add [all worklist examinations](#) (i.e. all examinations that match the worklist criteria) for several patients, to a scheduled demonstration.
3. It is also possible to add the [current base examination](#) to a scheduled demonstration while looking at it in the *Matrix* and *Image* windows. In this case, the present presentation will be saved as a demonstration presentation, see [section 6.6 Creating a Manual Presentation](#).

► **To add an examination to a scheduled demonstration (Examination list)**

1. Use the Examination list to select the examinations you want to add to the scheduled demonstration. By holding down the CTRL key you can select several examinations at the same time.
 - a. Select **Add to: NAME (DATE)** from the Examination list pop-up menu under the sub-menu Scheduled demonstration. There might be several menu items of this kind in the menu. NAME is the name of the scheduled demonstration, and DATE is the date to which the examinations will be added. The date is calculated as the next following date according to the schedule of the demonstration worklist. These dynamic shortcuts are only available for those scheduled demonstrations that have the same referring units as any of the selected exams.
 - b. Select **Add to other demonstration** from the Examination lists pop-up menu under the sub-menu Scheduled demonstration. A dialog window will open where you may select any scheduled demonstration and date. The calendar in the dialog box shows you what dates are valid according

to the schedule. Click **Add to** to add examinations to the chosen demonstration at the chosen date.

Add to scheduled demonstration [X]

Name: Cardio demonstration
Neurology demonstration
Ortho demonstration
Urology demonstration

Date: ◀ september 2002 ▶

m	t	w	t	f	s
					1
2	3	4	5	6	7 8
9	10	11	12	13	14 15
16	17	18	19	20	21 22
23	24	25	26	27	28 29
					30

Time: 07:00 [↑] [↓]

Add

Cancel

► **To add all worklist examinations to a scheduled demonstration**

1. In the Patient list, select the patients whose worklist examinations you wish to add to the demonstration. By holding down the CTRL key you may select several patients at the same time.
 - a. Select **Add to: NAME (DATE)** from the Patient list pop-up menu under the sub-menu Scheduled demonstration. There can be several menu items of this kind. NAME is the name of the scheduled demonstration and DATE is the date to which the examinations will be added. The date is calculated as the next following date according to the schedule of the demonstration worklist. These dynamic shortcuts are only available for those scheduled demonstrations that have the same referring units as any of the selected exams.
 - b. Select **Add to other demonstration** from the Patient list pop-up menu under the sub-menu Scheduled demonstration. A dialog window will open where you may select any scheduled demonstration and date. The calendar in the dialog box shows you what dates are valid according to the schedule.

Click **Add to** to add the examinations to the chosen demonstration on the chosen date.

► **To add the current base examination to a scheduled demonstration**

1. a. In the Matrix or Image window toolbar (or **Tools** in the menubar), select **Add base examination to scheduled demonstration**.

A dialog window will open where you may choose any scheduled demonstration and date. The calendar in the dialog shows you what dates are valid according to the schedule. Click **Add to** to add the examinations to the chosen demonstration on the chosen date.

- b. In the Image window menubar (**Tools**), choose **Add base exam to: NAME (DATE)**. In the **Tools** menu there might exist several menu items of this kind. NAME is the name of the scheduled demonstration and DATE is the date to which the exams will be added. The date is calculated as the next following date according to the schedule of the demonstration worklist. These dynamic shortcuts are only available for those scheduled demonstrations that have the same referring units as any of the selected exams.

There are several ways of moving one or many examinations to another scheduled demonstration, or to another occasion within the same scheduled demonstration.

1. The easiest way is to use the [Examination list](#).
2. It is also possible to move [all worklist examinations](#) (i.e. all examinations that match the worklist criteria) for a number of patients, to another scheduled demonstration.

► **To move an examination to another scheduled demonstration using Examination list**

1. In the Examination list, select the examinations you wish to move from this scheduled demonstration to another scheduled demonstration. By holding down the CTRL key you may select several examinations at the same time.
 - a. Select **Move to next occasion** from the Examination list pop-up menu under the sub-menu Scheduled demonstration. The date is calculated as the next following date from the current occasion according to the schedule of the demonstration. The selected examinations, and any demonstration specific presentations, will be moved to the next occasion.
 - b. Select **Move to other occasion** from the Examination list pop-up menu under the sub-menu Scheduled demonstration. A dialog window will open where you may select any scheduled demonstration and date. The calendar in the dialog shows you what dates are valid according to the schedule. Click **Add to** to move the examinations and any demonstration specific presentations to the chosen demonstration on the chosen date.

▶ **To move all worklist examinations to another scheduled demonstration**

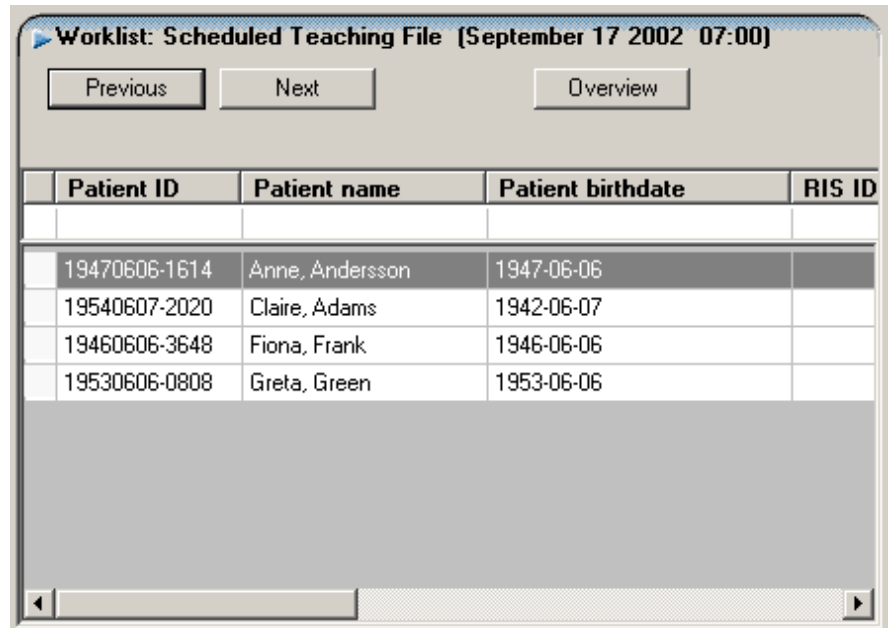
1. In the Patient list you select the patients whose worklist examinations you wish to move from this scheduled demonstration to another scheduled demonstration. By holding down the CTRL key you may select several patients at the same time.
 - a. Select **Move to next occasion** from the Examination list pop-up menu under the sub-menu Scheduled demonstration. The date is calculated as the next following date from the current occasion according to the schedule of the demonstration. The selected patients' worklist examinations, and any demonstration specific presentations, will be moved to the next occasion.
 - b. Select **Move to other occasion** from the Patient list pop-up menu under the sub-menu Scheduled demonstration. A dialog window will open where you may select any scheduled demonstration and date. The calendar in the dialog shows you what dates are valid according to the schedule. Click **Add to** to move the patients' worklist examinations and any demonstration specific presentations to the chosen demonstration on the chosen date.

▶ **To navigate between scheduled demonstration occasions**

Whenever a scheduled demonstration is selected in the worklist tree, a navigation bar becomes visible just above the patient list. The navigation bar shows information such as the date and time of the currently selected occasion.

1. There are two ways of jumping to another occasion within the same scheduled demonstration. The easiest way is to use the **Next** and **Previous** buttons. They will load the next or previous occasion within the scheduled demonstration.

Alternatively you can use the **Overview** button. This button opens a calendar dialog box where you can quickly see on what days examinations were added. Those are shown in style face digits. Select a date and click **OK** to jump to the first occasion on that day.



Patient ID	Patient name	Patient birthdate	RIS ID
19470606-1614	Anne, Andersson	1947-06-06	
19540607-2020	Claire, Adams	1942-06-07	
19460606-3648	Fiona, Frank	1946-06-06	
19530606-0808	Greta, Green	1953-06-06	

The scheduled demonstration navigation bar.

5.1.5 Editing a worklist

► To change the search criteria for a worklist

Sometimes you may want to change the search criteria for a worklist. For example, you may want to add all patients to an existing worklist where the modality is a MR.

1. Select the worklist whose search criteria you want to change.
2. From the Worklists pop-up menu, select **Edit worklist....**

The **Worklist** dialog appears.

3. Edit the search criteria.
4. Click the **Save** button to save changes. Note that the search criteria for the old worklist will be overwritten. If you want to create a new worklist click the **Save**

as button. This will bring up the **Save as** dialog box in which you can specify a new name for the worklist.

Note: It is not possible to edit the "Mismatch" worklist under "System worklists".

Tip: **Edit worklist...** is available not only for ordinary worklists, but also for scheduled demonstrations.

Tip: Selecting **Edit worklist...** for a scheduled demonstration opens a wizard which guides you through the different settings available for a scheduled demonstration. The wizard is exactly the same as when a scheduled demonstration is created.

5.1.6 Removing a worklist

▶ To remove a worklist

1. Select the worklist in question and click **Delete** from the Worklists pop-up menu.

Note: Deleting a scheduled demonstration deletes the entire list, not just that occasion!

5.1.7 Creating a new subfolder

▶ To create a new subfolder

You might want to add subfolders to be able to rearrange and group your worklists. For example you might want to put all your worklists containing stacks under a subfolder called "Stacks".

It is not possible to add subfolders to "Temporary worklists" or "Role worklists". You can only add a subfolder to "System worklists" or to a role if you have administrator privileges.

1. Select the folder where you want to create the new subfolder.
2. From the Worklist pop-up menu, select **New folder...**

The **New folder** dialog box appears.

3. Type in a name for the new subfolder. Note that the name of the subfolder must be unique.
4. Click the **OK** button.

The new subfolder is saved and will be displayed in the Worklist View.

5.1.8 Removing a folder

▶ **To remove a folder**

1. Select the folder and click **Delete** in the Worklists pop-up menu.

Note: The category folders, e.g. the "System worklists" folder, can never be deleted, nor can the folders for each role be deleted. All other folders can be removed, but you must have administrator privileges to delete folders under "System worklists" or those under a role.

5.1.9 Moving worklists or folders

▶ **To move a worklist or a subfolder**

By drag and drop you can move either worklists or subfolders (with all their contents) to other folders. However, you can not move worklists or folders as you wish, which the following restrictions describe.

- You cannot move a top folder, e.g. the "System worklists" folder.
 - You cannot move a role folder.
 - You cannot move one of the following worklists: "Mismatched", "Temporary" or "Search".
 - You cannot move anything to or under "Temporary worklists".
 - You can freely move folders and worklists under "System worklists" if you have administrator privileges.
 - You can freely move folders and worklists under each role, if you have administrator privileges.
 - You can freely move folders and worklists under "User worklists".
1. Drag the worklist or folder that you want to move and drop it on the destination folder.

The worklist or folder is moved to its new location.

5.1.10 DICOM Query/Retrieve

A DICOM Query/Retrieve (Q/R) server can be queried for information in the same way as a WISE server, by including it in either or both server fields in the worklist definition. Since image retrieval from Q/R servers is potentially very slow, images are not fetched to the workstation until explicitly requested. Images that are available but which have not yet been fetched, are represented by the text "Remote image" in the Matrix and Image windows.

► **To initiate fetching of delayed images**

1. Select **Fetch remote** (see [Reference Manual IDS5 \[4\]](#)) from the Examination list pop-up menu in the Information window, or from the Examination pop-up menu in the Matrix window.

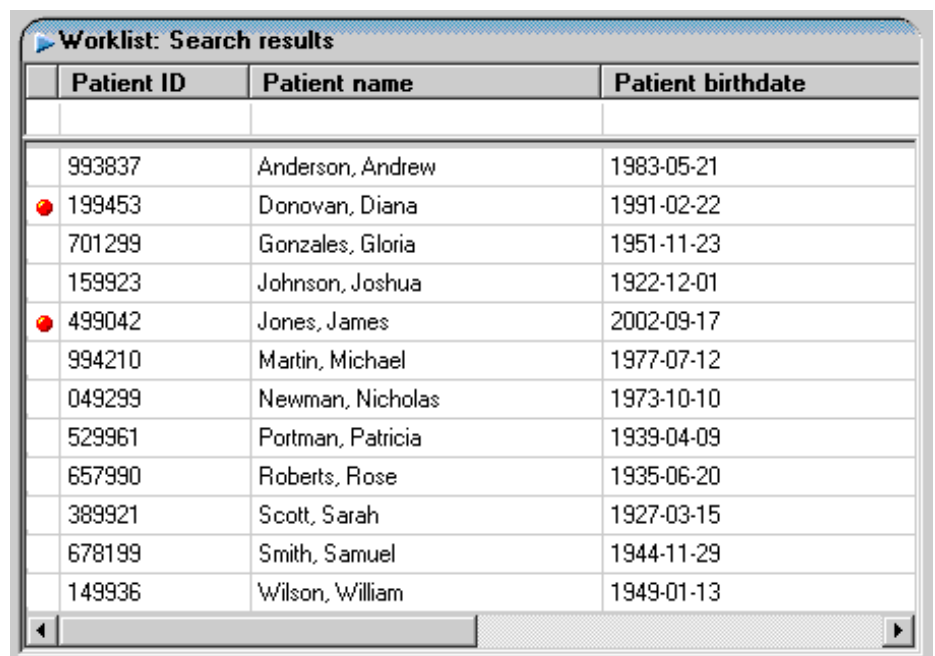
Images that are in the process of being retrieved are represented by the text “pending“. If needed, refresh the Matrix window when all images have been fetched to sort the images in the right order.

Q/R servers may also be queried using [Advanced search](#), by selecting the Q/R server in one or both server fields in the advanced search dialog box. The thumbnails of examinations found on the Q/R servers are black, as the images only are located on the remote server. To initiate a retrieve of the images, open the Matrix window, and select Fetch remote, or import the examination using the pop-up menu command **Import** in the Information window.

5.2 Working with Patients

The patient list displays all patients in a worklist. From the patient list you can select a patient and view all examinations for that patient. The examinations will be displayed in the examination list (see [section 5.3 Working with Examinations](#)). By double-clicking on a patient you can bring up the images for the first examination with a DDP applied (this is the same as selecting the patient and clicking **Open Images** from the **View**-menu).


The figure below shows the main elements in a Patient List.



Patient ID	Patient name	Patient birthdate
993837	Anderson, Andrew	1983-05-21
199453	Donovan, Diana	1991-02-22
701299	Gonzales, Gloria	1951-11-23
159923	Johnson, Joshua	1922-12-01
499042	Jones, James	2002-09-17
994210	Martin, Michael	1977-07-12
049299	Newman, Nicholas	1973-10-10
529961	Portman, Patricia	1939-04-09
657990	Roberts, Rose	1935-06-20
389921	Scott, Sarah	1927-03-15
678199	Smith, Samuel	1944-11-29
149936	Wilson, William	1949-01-13

The Patient List.

The patient list consists of the following elements:

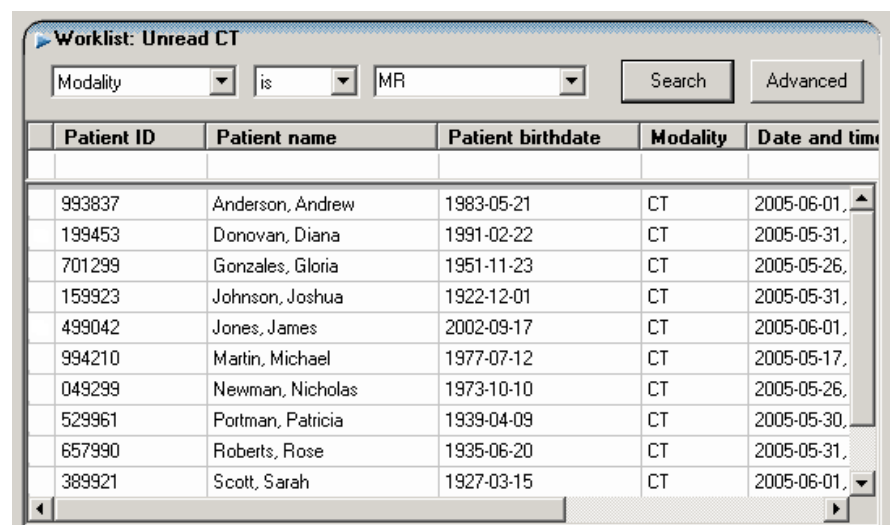
- Note:** Your local configuration may not show some columns on the screen, and their order may vary.
- **STAT column** — This is the column on the far left. The column has a red dot  if any of the cases (matched examinations) for the patient are STAT examinations, i.e. examinations with high priority. In the figure above, Diana Donovan and James Jones have the STAT mark set.
 - **Patient ID** — The personal ID of the patient.
 - **Patient name** — The patient's name.
 - **Patient birthdate** — The patient's date of birth.
 - **RIS ID** — Indicates the patient's ID in the connected RIS system, if it exists.
 - **Sex** — The patient's sex.
 - **Examination columns** — In addition to values that describe a patient, the list can also be configured to show information about examinations. The value that is shown on the patient level is the value for the first examination that matches the worklist. See [section 5.3 Working with Examinations](#) for more information on these columns.
 - **Filter fields** — These are shown in the row below the column headings. In this row you can type filter criteria that make it easier to locate a certain type of patient. You can learn how to filter patients in [To filter patients](#).

► **To perform a search**

A search can be performed when you are looking for examinations that fulfill a specific search criterion. For example you may want to look for examinations performed on a certain modality.

1. In the **Edit** menu or the toolbar, click **Search....**

The **Search** dialog appears above the Patient list.



2. Specify the search criteria. A search criteria has three parts; attribute, relation and value as described in the "Worklist definition" list item in [section 5.1.1 Creating a new worklist](#).
3. Click the **Search** button.
4. A cancel dialog is displayed. Click on the **Cancel** button to end the search.

A search is performed on the local WISE server, and all examinations that match the search criterion will be placed in a temporary worklist under the Search results node in the Worklist view. This worklist will be selected automatically. The search dialog can be closed by clicking the **Search** toolbar button.

► **To perform an advanced search**

Sometimes you may want to search the entire database for examinations that fulfill several different search criteria. For example you may want to look for examinations from a specific referring unit performed on a certain modality. In these cases you perform an advanced search.

1. From the **Edit** menu, click **Advanced search...**

The **Advanced search** dialog appears. This dialog is very similar to the Worklist dialog.

2. Add search criteria in the same way as in the **Worklist** dialog which is described in [section 5.1.1 Creating a new worklist](#).
3. Click the **Search** button.
4. A cancel dialog is displayed. Click on the **Cancel** button to end the search.

All examinations that match the search criteria will be placed in a temporary worklist under the **Search results** node in the Worklist view. This worklist will be selected automatically.

► **To perform an extended patient search**

This feature is used to search other servers for additional examinations concerning the selected patient(s).

1. Select the patients you want to search for in the patient list and click the right mouse-button to bring up the patient pop-up menu.
2. From the pop-up menu, click on **Extended patient search**.

All examinations found for the selected patients will be placed in a temporary worklist under the **Search results** node in the Worklist view. This worklist will be selected automatically.

Tip: You can configure the extended patient search function to determine which servers to search, and which search criteria are to be used when searching for the patients. The configuration is composed in the Options dialog, which is opened by selecting **Options** from the **Tools** menu.

▶ **To sort a patient**

If a worklist contains many patients it can be convenient to sort the list to make it easier to locate a specific patient. The patients can be sorted by Patient ID, Patient name, Patient birthdate or RIS ID, i.e. the columns in the patient list.

1. To sort a column, click on the column heading. Clicking the same column heading again, reverses the sort order.

▶ **To filter patients**

By specifying filter criteria you can limit the patients viewed in the patient list to only those that match the criteria.

1. Specify a criteria by typing text in the filter fields.

A field matches a certain criteria if it begins with that letter combination. Filtering is not case sensitive.

Tip: Typing **JO** in the patient name column will match all patients whose name begins with the letters "JO", "Jo", "jo" or "jO". Matching names are for example "John Smith" and "Joe West".

Wildcards can be used to make a more general selection. There are two wildcard characters, * which matches an arbitrary number of characters and ? that matches exactly one character.

***JO** matches all items containing "JO". ?JO matches all items with a "J" as the second letter and a "O" as the third.

Tip: Text can be entered in several filter fields, i.e. for several columns. Filtering is executed as soon as anything is entered.

▶ **To remove a patient from a teaching file**

1. Select the patient (or patients) in question from the Patient list pop-up menu, and click **Remove patient from teaching file**.

▶ **To remove a patient from a scheduled demonstration**

1. Select the patient (or patients) in question from the Patient list pop-up menu, and click **Remove patient from scheduled demonstration**.

5.3 Working with Examinations

The Examination List displays all the examinations for the patient currently selected in the Patient List. Various status information can be viewed for each examination. For example, the date and time when the examination was performed, on which modality the images were taken, and the such like.

When you select a patient, the Request View, Report View and Series List will be automatically updated. The Request View will show the electronic or scanned requests corresponding to the selected examination. The Report View shows all reports for the request, and the Series List will show thumbnails of all images in the examination.

By double-clicking an examination you can quickly see its related images. A DDP or manual presentation will be applied (see [section 6.4 Applying a presentation \(manual or DDP\)](#)) in the same manner as when you click **Open images** from the **View** menu.

The style of the text in the patient list is used to give various kinds of information. The following notation is used:

Bold text — Text displayed in bold style is used to denote examinations that match the worklist search criteria.

Italics — Text displayed in italics indicates that the examination is in the archive.

Gray text — Text displayed in gray indicates that the examination was once part of (i.e. matched) the worklist, but not any longer.






The Examination list is shown in the figure below.

Patient: Smith, Samuel					
	Accession no	Date and time	Modality	Body part	Archive status
	00003211050	2000-02-03, 09:01:54	CT	HEAD	Original
		2000-01-01, 12:32:23	MR		Queued
		1999-04-23, 13:11:12	NM	WHOLE B...	Original
		1998-12-15, 10:05:38	MR		Queued
		1998-12-03, 14:08:17	MR		Queued
	00003049299	1998-11-09, 00:00:00	G1ULJI	ULJ SCRO...	Original
		1998-10-20, 15:45:08	DR		Original
		1998-02-09, 18:34:43			Original
	00002701292	1996-09-17, 10:38:00	CR	Lungor	Original
		1995-02-21, 00:00:00	OT	Printer Test	Queued
					Original
					Original
			<i>OT</i>		<i>Original</i>
					Original
					Queued




The Examination List.

The examination list consists of the following elements:

Note: Due to local configuration some columns may not be visible on your screen, and their order may vary.

- Examination state — The column on the far left. This column displays a worklist icon  if the examination matched the worklist search criteria, and a red dot  if it is a STAT examination, i.e. an examination with high priority. The two icons can be combined  if the examination is both a STAT examination and matches the search criteria.
- Display state — The second column from the left. The current examination, that is to say the examination that is the base for what is displayed in the Image and Matrix windows, is denoted by an arrow  (the base examination). It is possible to set another examination as base examination by double-clicking on it. The other examinations that are included in the current presentation have checkmarks  in this column. These checkmarks are always synchronized with the expanded examination rows in the Matrix Window. It is possible to click in this column to remove or add a checkmark.
- RIS information state — The third column from the left. Normally, when images are taken at a modality, RIS data is automatically transferred to the workstation. If the radiology department doesn't have a RIS or the RIS connection is down, RIS values may have to be entered manually on the modality producing the images.

Note: Entering information manually is a potential source for errors.

The image import will check that the patient and request data matches. If a mismatch occurs, this is indicated by a warning icon  in this column. If the RIS was not available when the image import took place it is indicated by another icon  in the same column. The function **Update From RIS** on the Examination List pop-up menu should then be executed to verify the data. There is also the case when the PACS has been informed of an examination that is scheduled to take place some time in the future. Such an examination is indicated with a clock icon  in the third column.

- Accession no — The accession number, i.e. the ID of the examination. In some countries, where several examinations may be performed for each request, this is the ID of the request.
- Archive status — The archiving status for the examination.
- Body part — The body part that has been examined.
- Comments — Any comments about the examination.
- Date and time — The date and time when the examination was performed.
- Description — A description of the examination.
- DICOM Study ID — The DICOM Study ID tag, extracted when the examination was imported into the PACS.
- Examination code — A code that denotes the type of examination.

- Examination age — The time from when this examination was performed.
- Examination ID — The ID of the examination. Typically used when the Accession no column contains the ID of the request.
- Import status — The error code, if any, from the examination's import into the PACS.
- Institution name — The institution where the examination was performed.
- Modality — Specifies on which modality the images in the examination were taken.
- Physician name — The name of the physician that performed the examination.
- Reading radiologist — The radiologist that has read/is to read the images.
- Referring unit — The clinic that requested the examination.
- RIS state — The status of the examination in the RIS.
- Server — The name of the server where this examination is stored.
- Station name — The physical station where the examination was performed.
- Status — The status of the examination in the PACS.
- Storage — The type of storage for the examination.
- Study Instance UID — The DICOM Study Instance UID tag, extracted when the examination was imported into the PACS.

▶ **To add an examination**

1. Select the examination and select **New examination** from the Examination List pop-up menu. Enter the appropriate Accession number and Examination ID (or leave them as <Automatic>) and click **Search**. Neither the Accession number nor the Examination ID may contain comma (",") characters.

If the chosen combination of Accession number and Examination ID is unique, no examination is found and a message stating this fact is shown. Click **Create** to create a new examination. The new examination will be displayed in the Examination List

▶ **To delete an examination**

1. Select the relevant examination and select **Delete online examination** in the Examination List pop-up menu. Note that the examination will be irretrievably lost, i.e. it will be impossible to retrieve this examination ever again.

If the examination has been archived or scheduled with HL7, only images in the workstorage unit (online) will be deleted. An archived examination cannot be deleted from the archive. To delete a scheduled HL7 examination fully, it must be canceled, see [To cancel an examination scheduled with HL7](#).

▶ **To cancel an examination scheduled with HL7**

1. Select the relevant examination and select **Cancel scheduled examination** in the Examination List pop-up menu.
2. If the examination contains images, you will be asked to verify that you want to cancel the examination and delete the online images from the workstorage unit. An archived examination cannot be deleted from the archive. Click the appropriate button.

5.3.1 Adding a report to an examination

It is possible to add a report to an examination. This is a useful feature if, for example you want to add comments about the examination. If the required 'license bits' are present, it is also possible to sign the Report.

▶ **To add a report to an examination**

1. Select the examination for which you want to add a report.
2. From the **Report View** pop-up menu, click **Create new report**.
3. Fill in the **Text** field.
4. Click **Save** to save the report, and sign it later. Alternatively click **Sign** to both sign and save the report, see below.


The report is saved on the server.

▶ **To sign a report**

1. Select the examination for which you want to sign a report, and select the report you want to sign.
2. Click **Sign**.
3. A Signature dialog is displayed requiring you to authenticate yourself. For more details on authentication see [To perform a login](#).
4. Click **OK** to sign the report.

The report is saved on the server in 'signed' mode.

Note: Special privileges are required in the IDS5 system in order to be allowed to sign a report. If you try to sign without the necessary permission, an Error dialog box will be displayed, and the signing process interrupted.

Note: The following symbol indicates that the report contains voice clips that the current workstation cannot play: . The symbol is displayed to the right of the Sign button.

▶ **To edit a report**

It is possible to edit a report if it has been saved without a signature.

1. Select the examination for which you want to modify a report, and select the report you want to modify.
2. Select **Edit report** in the pop-up menu of the **Report view**.
3. Edit the report text.
4. Click **Save** to save the report, or click **Sign** to sign and save the report. Click **Cancel** to undo the changes.

5.3.2 Setting state for an examination

There are several types of state information that can be set for one or several examinations. These includes:

- Setting and resetting STAT.
- Setting status.
- Setting Reading Radiologist.
- Changing archive status from Copy to Original.

A STAT examination is an examination that requires immediate attention, and has the highest possible priority. As with film radiology, this urgency was denoted by a red sticker on the examination. In IDS5 a digital STAT mark can be set (attached) and reset (removed) on an examination. A STAT examination is indicated with a red dot ● in the Examination list. It is possible to configure the workstation so that an alert message is displayed when a STAT mark is set.

► To set/reset STAT for an examination

1. Select the examination for which you want to set STAT.
2. From the **Examination list** pop-up menu, select **Set STAT** for setting the STAT tag or **Reset STAT** for resetting the STAT flag.

In the Examination list the STAT indicator ● will be displayed or removed depending on whether STAT was set or reset.

After working with an examination, it may be necessary to change its status to indicate that it has been dealt with. Which status codes can be set depends on your workstation configuration Typical states are "Read" or "Dictated". Status can be set on single examinations, or groups of worklist examinations (i.e. examinations matching the worklist search criteria).

► To set the status for examinations

1. Select the examination(s) for which you want to change status.
2. From the **Examination list** pop-up menu, select **Set status** and select the new status, or select **Next status** to advance the status one step.

The new state will be displayed in the "Status" column of the Examination list.

There is also a set of “smart” commands for setting the next status (see [Reference Manual IDS5 \[4\]](#)). When applied in a worklist that selects examinations based on their status, these commands advance the status of the affected examination(s) to the status following the one selected by the worklist, regardless of the present status for the examination. This means that the command may be applied any number of times and will still leave the examination in the next status, counted from that selected by the worklist. This function reduces the risk of mistakes in accelerated workflows (such as screening). When applied in a worklist that does not specifically select a status, the “smart” commands work in the same way as the ordinary next-state commands.

You can specify who is going to be the reading radiologist for an examination. This can be useful, for example, if you want to create worklists for each radiologist in a department. By specifying a search criteria like "Reading Radiologist is Adam Smith" the radiologist Adam Smith will see only those examinations that have been assigned to him.

► **To set status for a group of worklist examinations**

1. Select the patients for which you want the worklist examinations to change status.
2. From the **Patient list** pop-up menu, select **Set status** and choose the new state, or select **Next status** to advance the status one step.

► **To set Reading Radiologist for an examination**

1. Select the examination for which you want to set the reading radiologist.
2. From the **Examination list** pop-up menu, select **Reading radiologist....**

A dialog appears displaying all users in the WISE database.

3. Select the reading radiologist from the list.
4. Click the **OK** button.

► **To set the current user as the reading radiologist**

1. Select the examination for which you want to set the reading radiologist.
2. From the **Examination list** pop-up menu, select **Set me as reading radiologist....**

The reading radiologist will be displayed in the "Reading radiologist" column of the Examination list.

► **Changing the archive status from Copy to Original**

1. Select the examination for which you want to change the status from Copy to Original.
2. From the **Examination list** pop-up menu, select **Set archive status to Original**.

A dialog appears where you are asked to verify that you want to change the archive status.

- Click the **Yes** button.

Changing the archive status this way can only be done for examinations with archive status Copy. For all other cases, the command is inactivated.

5.3.3 Properties

► **To view/modify properties of an examination**

- Select the examination and select **Properties...** in the **Examination list** pop-up menu.

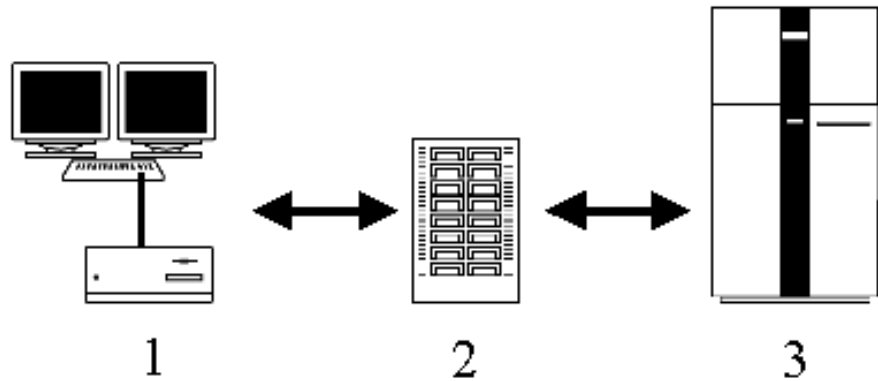
A dialog will be displayed where you can change some of the attributes.

If you are not an IDS5 administrator you cannot change any attributes in the dialog, and all fields will be displayed in gray (see figure below). When modifying patient and examination data, please note that correct data is of crucial importance.

Properties dialog.

5.3.4 Storing and retrieving examinations

Images can be stored in three locations, namely: on the workstation, in the workstorage unit (online), and in the archive. All examinations are stored indefinitely in the archive. The workstorage unit normally stores the last few days production of images so that they can be retrieved quickly. When displaying images on the workstation, the images are retrieved from the workstorage unit and copied to the workstation. The figure below illustrates the relationship between the different storage locations.



Storage locations.

The workstation (1) stores the images that are currently being viewed. The workstorage unit (2) typically stores images for the last few days of production; and the archive (3) stores all images that have been imported to the PACS.

It may take a few minutes to retrieve an examination from the archive, longer for archives using tapes or removable disks as storage medium.

By looking at the archive column in the **Examination list** you can view the current archive status for an examination. An examination can have the following archive status:

Original	The examination is an original and has not yet been archived.
Copy	The examination is a copy of another examination in the workstorage unit.
Queued	The examination is being queued for archiving.
Archived	The examination has been put in the archive.
Retrieving	The examination is being retrieved from the archive.
Warning	The examination is incomplete due to a failed retrieval attempt.

► To store an examination in the archive

1. Select the examination or examinations you want to store in the archive.
2. From the **Examination list** pop-up menu, click **Archive** and select which archive you want to store the examination(s) in.

The examination(s) are now copied to the archive.

Note: To be able to look at images that have been stored in the archive, you must first retrieve them from the archive.

► To retrieve an examination from the archive

1. Select the examination or examinations you want to retrieve from the archive. Note that only examinations that have status "Archived" or "Warning" can be retrieved.

2. From the **Examination list** pop-up menu, click **Retrieve from archive**.


The examination(s) are then transferred to the workstorage unit (online). The archive status of the examination(s) will change from "Retrieving" to "Archived" or "Warning" depending on the result of the operation. You may need to click **Refresh** to see the changes.

Note: If an examination gets the archive status "Warning", the retrieval was not entirely successful and the examination is incomplete. In this case you may retry to retrieve the examination from the archive, but should inform the system administrator.

5.4 Mismatch handling

During import operations, the examinations are mapped to existing data in both the PACS and the RIS (if one is connected). A number of conflicts may occur during this process. A common fault is that the specific Request ID is already connected to another patient. These conflicts are called mismatches. The reason is often that a manually entered ID is incorrect. The conflict is handled by using the **Examination administration** tool, see [section 5.4.1 Correcting mismatches](#).

The same type of errors may exist, even though no mismatch is detected. This happens when the erroneous data does not conflict with existing data. The remedy is the same.

The mismatched examinations are only visible in the built-in "Mismatched" worklist, see below. Another problem is when the RIS is unavailable during import. Data is normally validated through the RIS at that time. If no validation was possible, the examination will get the import status "Missing RIS info", shown as the symbol  in the Examination List. To update the examination with data from RIS when the RIS is available ('on-line') again, use the **Update from RIS** function, see below.

5.4.1 Correcting mismatches

Correcting a mismatch can be done in three different ways:

- Copying the contents of the examination to another examination.
- Moving the examination to another patient.
- Changing examination number.

These options are available in the examination administration wizard that can be opened by selecting **Examination administration** in the **Examination list** pop-up menu. The examination administration wizard provides guidance when correcting mismatches. Three options are available in the wizard that appears, and are explained below.

► To copy images

1. Select the **Copy** command and click **Next >**.

2. Enter the correct examination number for the mismatched examination and click **Next >**. Alternatively, click the **Suggestions...** button. This will open up a dialog listing probable target examinations. Select an examination in the list and click **OK**. The examination number will be filled in automatically. Click **Next >**.

A search is performed to determine if the target examination exists. If the request or examination is found, a page with information on what is about to happen will be displayed.

3. Clicking the **Finish** button will complete the copying process.

If the request is not found, you re-enter patient data for the target patient. This is done on the next page in the wizard.

4. First select whether the examination is for an existing or a new patient, and enter the relevant patient data.
5. Clicking **Next >** will perform a search for the entered patient data to ensure that there are no conflicts with existing patients.

Note: If "New patient" is selected and the patient already exists, the patient data will be changed on the wizard page.

Note: An image is not allowed to exist in more than one examination. Therefore, after the copying operation has been performed, you must delete the appropriate image(s) from the original examination and the copy, so that no duplicate images exist.

► **To move examinations**

1. Select the **Move** command and click **Next >**.
2. Enter the correct examination number for the mismatched examination and click **Next >**. Alternatively, click the **Suggestions...** button. This will open up a dialog listing probable target examinations. Select an examination in the list and click **OK**. The examination data will be filled in automatically. Click **Next >**.

A search is performed to determine if you are allowed to move the examination here. If the request is found, a page with information on what is about to happen will be displayed.

3. Clicking the **Finish** button will complete the moving process.

If the request is not found, you must re-enter patient data for the target patient. This is done on the next page in the wizard.

4. First select whether the examination is for an existing or a new patient, and enter the relevant patient data.

5. Clicking **Next >** will perform a search for the entered patient data to ensure that there are no conflicts with existing patients.

Note: If "New patient" is selected and the patient already exists, the patient data will be changed on the wizard page.

Note: To read more on how to configure what probable target examinations to show in the dialog described above, see System Administrator's Guide IDS5.

▶ **To change examination number**

1. Select the **Change examination number** command and click **Next >**.
2. Enter the correct examination number for the mismatched examination and click **Next >**.

A search is performed to determine if the target request exists. If the request is found for the current patient, or if the request is not found, a page with information on what is about to happen will be displayed.

3. Clicking the **Finish** button will complete the examination data change.

If the request is found for another patient, you are asked to enter different examination data that does not conflict with another examination.

Limitations

The examination administration wizard has a number of limitations that it is important to be aware of.

- An examination that has been archived cannot be changed or moved. It is only possible to copy images from these examinations to other examinations. Therefore, only the copy command is available for these examinations.
- The **Change examination number** command cannot be used to move the examination to another patient. Hence, the new accession number that is entered in the wizard, must be non-existent, or belong to the source patient. If an examination is marked as a mismatch, the personal ID may have been altered with a suffix. This command can then not be used to change examination number, since the examination will be connected to a patient with an incorrect personal ID (i.e. the correct personal ID with a suffix). It is necessary to use the **Move** command, and move the examination to a new patient with correct patient data.


▶ **To update an examination from RIS**

1. An examination which lacks RIS information is updated by selecting **Update from RIS** in the **Examination list** pop-up menu. Remember that you may need to apply **Refresh** to see the changes.

▶ **To reimport an examination**

1. An examination can be reimported completely by using the **Reimport to...** command that can be added to the **Examination list** pop-up menu. Enter the correct examination data in the **Reimport** dialog and click **OK**.

5.4.2 The "Mismatched" worklist

Mismatched examinations are only visible in the built-in "Mismatched" Worklist in the System Worklist folder. In this way, they can never interfere with the normal workflow. As in any worklist, all examinations for the patient in question are shown in the Examination List. The mismatched examinations are denoted with a warning symbol .

Examinations that lack RIS information can be seen in any worklist.

5.4.3 Troubleshooting

The table below gives guidance on how to remedy the different erroneous scenarios regarding Examination administration. Use the "IDS5 marking" and "ID status" to guide you to the correct scenario.

Note: When reading the troubleshooting table below, be sure to consider all possible cases before implementing a solution. Some scenarios are very similar but need different solutions.

Explanation to the columns:

- No. — Order number for each scenario, for reference purposes.
- IDS5 marking: Mism. — The examination is marked as "Mismatch" in IDS5. The marking is shown as a warning triangle in the Examination List of the Information Window, and as text in the "Import status" column. The examination is shown only in the "Mismatched" worklist.
- IDS5 marking: No RIS information — The examination is marked as "Missing RIS info" in IDS5. The marking is shown as an exclamation mark in the Examination List of the Information Window, and as text in the "Import status" column.
- ID status: Bad Pat ID — The patient ID is incorrect. It could belong to another patient.
- ID status: Bad Req ID — The request ID/accession number is totally incorrect. It could belong to another request.
- ID status: Suffix Req ID — The request ID/accession number is essentially correct, but has an extra letter at the beginning. A suffix, usually "A" is added when a mismatch is detected during image import.
- Description — This column describes what has happened before and during image import, to result in the current situation.
- Example — The Example column gives real-life examples of how the error was made.
- Remedy — This column gives instructions on how to remedy errors. The instructions refer to IDS5, unless otherwise specified.

No.	IDS5 marking		ID status			Description	Example	Remedy
	Mism.	No RIS info	Bad Pat ID	Bad Req ID	Suf-fix Req ID			
1.	-	-	-	-	-	An examination for patient P1 contains images for both P1 and another patient P2.	P1 has had an examination performed and the technician forgets to change the user details at the modality when taking P2's images.	<ul style="list-style-type: none"> ● Copy the contents of the examination to the correct patient (P2). The patient and request data for P2 should be added in the dialog. ● Delete appropriate series from both patients' examinations.
2.	X	-	-	X	-	Request R1 has an incorrect request ID/accession number, but it is connected to the correct patient.	At the modality, an incorrect request ID/accession number is given. The ID conflicts with an existing request for another patient.	<ul style="list-style-type: none"> ● Select the Change examination number command and enter the correct request and examination number.
3.	X	-	-	-	X	Request R1 with examination E1 has incorrect request ID/accession number. No mismatch has been detected for E1. The examination E2 is marked as mismatch, but has correct request ID/accession number, apart from a letter suffix.	At the modality, an incorrect request ID/accession number is given for R1. The ID does not conflict with an existing request for another patient and therefore the mismatch is not detected. All data is correct for E2 and its request R2 (for patient P2), but its request ID/accession number conflicts with the incorrect ID of R1.	<ul style="list-style-type: none"> ● Use Change examination number to correct the examination number for E1. ● Use Move to move E2 to the correct patient.
4.	X	-	X	-	X	Examination E1 is connected to the wrong patient or to a non-existing patient. E1 is marked as mismatch.	At the modality, an incorrect patient ID is given for E1. E1's request R1 is already known in PACS or RIS.	<ul style="list-style-type: none"> ● Use Move to move the examination to the correct patient.
5.	X	-	-	-	X	Examination E1 has correct request ID/accession number apart from a letter suffix and is marked as mismatch. E1's patient P1 has incorrect name or date of birth.	At the modality, incorrect patient name or date of birth is entered for E1. E1's request R1 is already known in PACS or RIS. The import process is configured to check for patient name and date of birth mismatches.	<ul style="list-style-type: none"> ● Select Move and enter correct examination number (without the suffix). ● Enter the correct patient data.

No.	IDS5 marking		ID status			Description	Example	Remedy
	Mism.	No RIS info	Bad Pat ID	Bad Req ID	Suf-fix Req ID			
6.	-	X	-	-	-	Examination E1 and its request R1 has correct IDs, but is marked with "Missing RIS info". R1 is not known in RIS.	Trauma case, where the request and/or patient is not known in RIS at the time of the image import to PACS.	<ul style="list-style-type: none"> ● Ensure that the request is created in RIS. ● Perform the Update from RIS function.
7.	-	X	-	-	-	Examination E1 and its request R1 has correct IDs, but is marked with "Missing RIS info". R1 is known in RIS.	The RIS connection was down during image import to PACS.	<ul style="list-style-type: none"> ● Perform the Update from RIS function.
8.	-	X	X	-	-	Examination E1 and its request R1 is connected to the wrong patient, or to a non-existing patient. E1 is marked as "Missing RIS info".	Trauma case, where an unknown patient is given a new patient ID, and temporary patient data. The request number is correct. The patient already existed in RIS, i.e. the new patient ID is invalid.	<ul style="list-style-type: none"> ● Ensure that RIS has correct data. ● Use the Change examination number command and enter a non-existing request and examination ID to temporarily change the examination. ● Use the Move command again to move the changed examination back to the correct ID's and patient. ● Perform Update from RIS.

No.	IDS5 marking	ID status			Description	Example	Remedy	
		No Mism. RIS info	Bad Pat ID	Bad Req ID				Suf-fix Req ID
9.	-	X	X	-	-	Examination E1 and its request R1 is connected to a non-existing patient. E1 is not known in RIS, and is marked as "Missing RIS info".	Emergency case, where an unknown patient is given a new patient ID, and temporary patient data. The patient does not yet exist in RIS.	<ul style="list-style-type: none"> ● Wait until the patient and examination have been entered in RIS. ● Use the Move command but enter non-existing temporary ID's to move the examination to the correct patient. ● Use the Change examination number command to reset the correct ID's. ● Perform Update from RIS.
10	-	X	X	-	-	Examination E1 is marked as "Missing RIS info", but is also connected to the wrong patient.	Combination of scenarios 4 and 7. Incorrect patient ID is given, and the RIS connection is down during the import.	<ul style="list-style-type: none"> ● Use the Move command but enter non-existing temporary ID's to move the examination to the correct patient. ● Use the Change examination number command to reset the correct ID's. ● Perform Update from RIS.
11.	-	X	-	X	-	Examination E1 is marked as "Missing RIS info", but also has incorrect request ID/accession number.	Combination of scenarios 2 and 7. Incorrect request ID/accession number is given, and the RIS connection is down during the import.	<ul style="list-style-type: none"> ● Use the Change examination number command, and enter the correct request and examination number. ● Perform Update from RIS.

No.	IDS5 marking		ID status			Description	Example	Remedy
	Mism.	No RIS info	Bad Pat ID	Bad Req ID	Suf-fix Req ID			
12	-	-	-	X	-	Request R1 with examination E1 has incorrect request ID/accession number. No mismatch has been detected for E1.	At the modality, an incorrect request ID/accession number is given for R1. The ID does not conflict with an existing request for another patient and therefore the mismatch is not detected.	<ul style="list-style-type: none"> ● Select the Change examination number command and enter the correct request and examination number.

5.5 Scanned documents

This sections describes scanning of documents as well as working with scanned documents.

5.5.1 Scanning documents

The IDS5 communicates with the physical scanner via a standard TWAIN interface. This makes it possible to use almost any scanner on the market. If the scanner has a document feeder it can be used to scan batches of papers unsupervised. For information on configuration of scanners, please refer to the [System Administrator's Guide IDS5 \[1\]](#).

► To select a scanner

1. Select **Select scanner** from the **Tools** menu.

This will display the TWAIN source selection dialog.

2. Select scanner from the dialog.

When a scanner has been selected, the Document Scanner is ready to be used.

► To scan a document without barcode

1. Place the document on the scanner glass, or in the document feeder if one is available.
2. Select the patient and the correct examination to scan the document to.
3. From the pop-up menu for the examination, select **Scan document**.

The document is now scanned and the document is stored in the PACS.

► To scan a document with barcode

1. Place the document on the scanner glass, or in the document feeder if one is available.

2. Select **Scan requests** from the **Tools** menu.

The document is now scanned, the barcode is read automatically and the document is stored in the PACS.

3. If a document has no barcode, or the Document Scanner fails to read it, the Missing ID dialog will be displayed.

Note: This dialog will also appear if a barcode was found that did not correspond to a known request ID in the PACS, or if there were more than one barcode found in the document.

Tip: A barcode might be unreadable for a number of reasons, e.g. smudged, wrinkled paper, low scanning resolution etc. For more information on configuration of scanners, please refer to the [System Administrator's Guide IDS5 \[1\]](#)

- a. Type the correct ID into the dialog and click **OK**.

The scanned document will be displayed in the background during this operation.

- b. After typing a request ID manually, the Document Scanner also requests an extra confirmation by displaying some user data that matched the given request ID.

► **To scan a batch of documents**

1. Place the documents in the scanner.
2. Select **Scan requests** from the **Tools** menu.

Note: When scanning several documents in a batch using a document feeder, it is possible to mix documents with and without barcodes. This is the same situation as scanning a batch where a couple of documents have unreadable barcodes. The Document Scanner handles this by scanning the entire batch and dealing with all documents with readable barcodes first. Then, as a second step, it goes through the ones it failed to allocate and requests manual entry of their request ID's. The same error handling as described above is applied here too.

5.5.2 Working with scanned documents

Scanned documents for the selected examination are displayed in the upper right corner of the Information window.

► **To view a scanned document**

1. Move the mouse holding the **left** mouse button to pan the view of the document.
2. Other tools, such as zooming, are available from the pop-up menu, reached by **right**-clicking in the scanned document view.
3. Zooming is also possible using the mouse wheel.

▶ **To view a scanned document in full-screen**

1. Double-click in the scanned document view to open up the document in full-screen mode, making it easier to read.

All mouse interaction in this window is the same as in the Information window. The Information window is, although visible, disabled while the full-screen scanned document window is open.

2. Double-click again in the scanned document window to close it.

▶ **To delete a scanned document**

Note: Deleting scanned documents requires your role to have permission to perform examination administration.

1. Select **Delete document** in the scanned document view pop-up menu (made visible by a right-click).
2. A warning dialog will be displayed and you need to both mark the checkbox and click **OK** to confirm the deletion.

Note: Documents in archives are not deleted by this function.

5.6 Import and export

An export may be initiated for a worklist, one or several patients, or one or several examinations for a patient. It may also be initiated for a stack or for an image in the Image window. The exported files are similar for all types of export with the following exceptions:

- Teleradiology does not include anything but the pure DICOM images
- When sending to an e-mail recipient, the viewer is not included
- Images in rejected series are not exported for external teleradiology, CD, user-defined folder, CD/DVD Production Center or e-mail export. They are however included for internal teleradiology and IDS5/home.

Export and import can be enabled and configured as described in System Administrator's Guide IDS5.

During export to a CD, user-defined folder, CD/DVD Production center or to e-mail, all images in the selected examinations are written to file. Any additional information, e.g. complementary information added after the date the image was created, or graphics (annotations or measurements added at the IDS5), will automatically be included in the export. Complementary information is added to the DICOM file, graphics are added to the images as overlays.

You can cancel the export at any time by clicking the **Cancel** button. When the export is done, you have to confirm the **Export status** dialog by clicking the **OK** button, which now is enabled.

Note: CDs, like other hard copy medical documents, should be handled according to the guidelines recommended by HIPAA. In most cases hospitals and/or imaging centers should follow the same tracking and signing procedures when sending out CDs as for film and/or reports. The procedures are not very well suited for E-mail, why we recommend using **Password protection** or **Anonymization** when exporting to e-mail recipients, see details below.

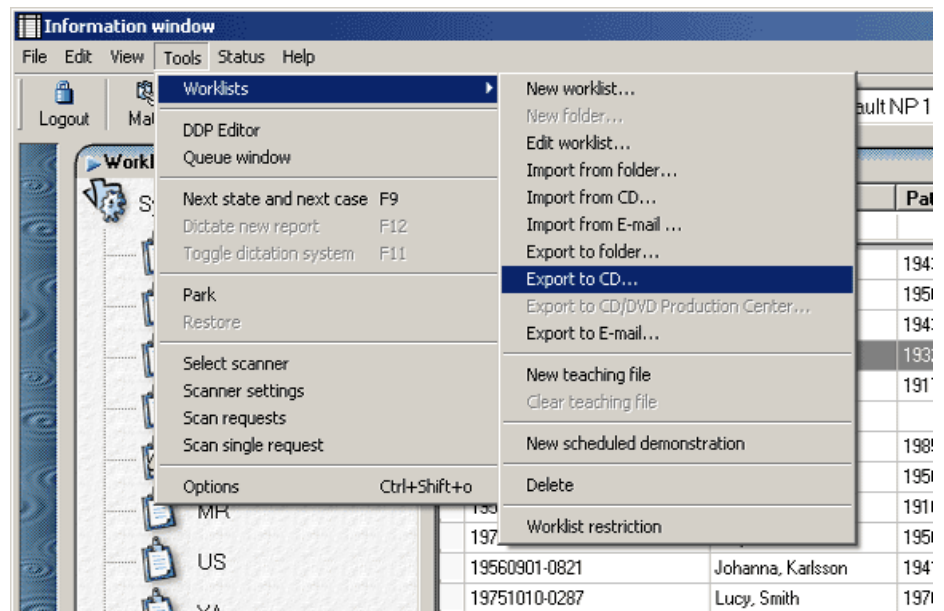
Note: CDs and DVDs should be verified manually after production to make sure that the media can be read and that the correct information has been exported.

5.6.1 Initiating the Export

The export may be initiated from a worklist, one/several patients or one/several examinations for a patient:

► **To export an entire worklist**

1. Select the worklist that you want to export.
2. From the **Tools** menu, **Worklists** sub-menu you can select to export all worklist examinations to a user-defined directory, CD, CD/DVD Production Center or to e-mail recipient(s).



The Tools, Worklists menu.

► **To export matching exams for patients**

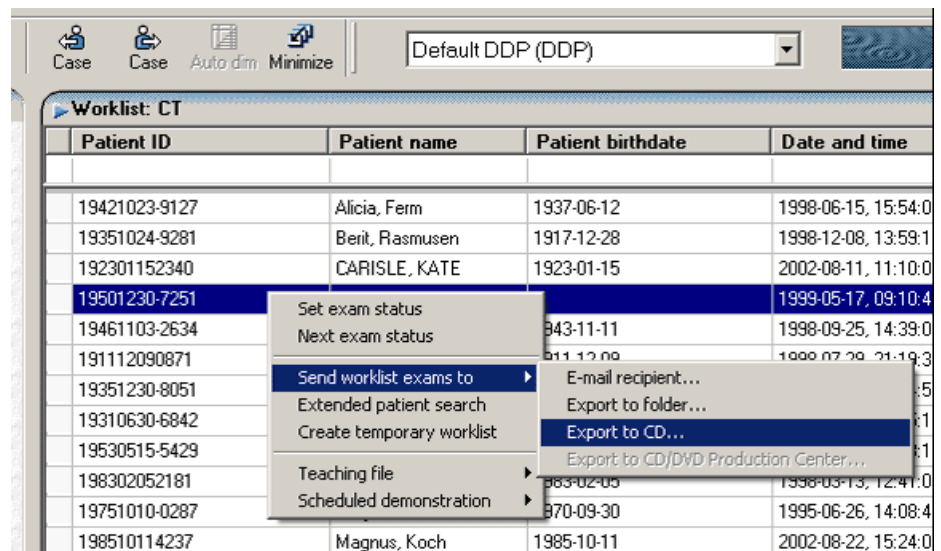
1. Select the worklist you want to export examinations from, or make a search.
2. Select the patient/patients to export matching exams for. Use Ctrl + left mouse button to select more than one patient.

3. Right-click on any of the selected items to display a pop-up menu.
4. Select **Send worklist examinations to** and then select a user-defined directory, CD, CD/DVD Production Center, e-mail recipient(s) or any other teleradiology destination that have been set up and are available.

Note: Only the examinations that match the worklist will be exported using this alternative.

► **To export selected examinations**

1. Select the worklist you want to export examinations from, or make a search.
2. Select the examination(s) you want to export.
3. Right-click on any of the selected items to display a pop-up menu.
4. Select **Send to** and then select a user-defined directory, CD, CD/DVD Production Center, e-mail recipient(s) or any other teleradiology destination that have been set up and are available.



The patient pop-up menu.

5.6.2 Export Options

The general options available for all export modes (except Teleradiology) are described below. There are specific options for each export type, which will be described later on.

Anonymize

The patient data is replaced with anonymous data. The values in the anonymized fields are written in English, and will not be translated to local languages. To indicate the sex and age of the patient the new name is of the type **Anonymous Male 1964**. The patient ID is recalculated and set to a new, patient unique value, ensuring that the patient gets the same anonymous ID at the next anonymized export.

The DICOM attributes that are changed are all members of the DICOM group 0010, Patient information. As mentioned above there is a new patient name (0010,0010) and a new patient id (0010,0020). The patient sex (0010,0040) and the patient age (0010,1010) are not changed, since this information is vital and cannot reveal the id of the patient. The two tables below describes the other affected DICOM attributes. The first table lists the attributes that have been removed completely, and the other shows the attributes that have been changed to a more anonymous value.

Removed DICOM attributes	DICOM attribute id
Patient's Insurance Plan Code Sequence	0010,0050
Other Patient IDs	0010,1000
Other Patient Names	0010,1001
Patient's Size	0010,1020
Patient's Weight	0010,1030
Patient's Address	0010,1040
Patient's insurance plan id	0010,1050
Military Rank	0010,1080
Branch of Service	0010,1081
Additional Patient History	0010,21B0
Last Menstrual Date	0010,21D0

Anonymized DICOM attributes	DICOM attribute id	New value
Issuer of Patient ID	0010,0021	anonymous
Patient's Birth Date	0010,0030	anonymous
Patient's Birth Time	0010,0032	anonymous
Patient's Birth Name	0010,1005	anonymous
Patient's Mother's Birth Name	0010,1060	anonymous
Medical Record Locator	0010,1090	anonymous
Medical Alerts	0010,2000	anonymous
Contrast Allergies	0010,2110	anonymous
Country of Residence	0010,2150	anonymous
Region of Residence	0010,2152	anonymous
Patient's Telephone Numbers	0010,2154	anonymous
Ethnic Group	0010,2160	anonymous
Occupation	0010,2180	anonymous
Smoking Status	0010,21A0	anonymous
Pregnancy Status	0010,21C0	0004 (0004 = unknown)

Anonymized DICOM attributes	DICOM attribute id	New value
Patient's Religious Preference	0010,21F0	anonymous
Patient Comments	0010,4000	anonymous

Note: Patient information in other DICOM fields are not removed, hence the images that are exported cannot be guaranteed to be completely anonymous.

Note: All reports and scanned documents are excluded from the export when the anonymize option is active.

Send only key images

If the image series contains key images, the export will only include these. If there are no key images, the series will not be exported at all. This is checked for each series in each examination that is exported.

Send questions and case histories

The questions and case histories, if any, are included in the export.

Send reports

The report text is included in the export. If the report is unsigned the CD export config file will decide whether the reports will be included or not. Voice clips related to the report will not be exported. This option is not enabled when Anonymous is checked.

Send scanned documents

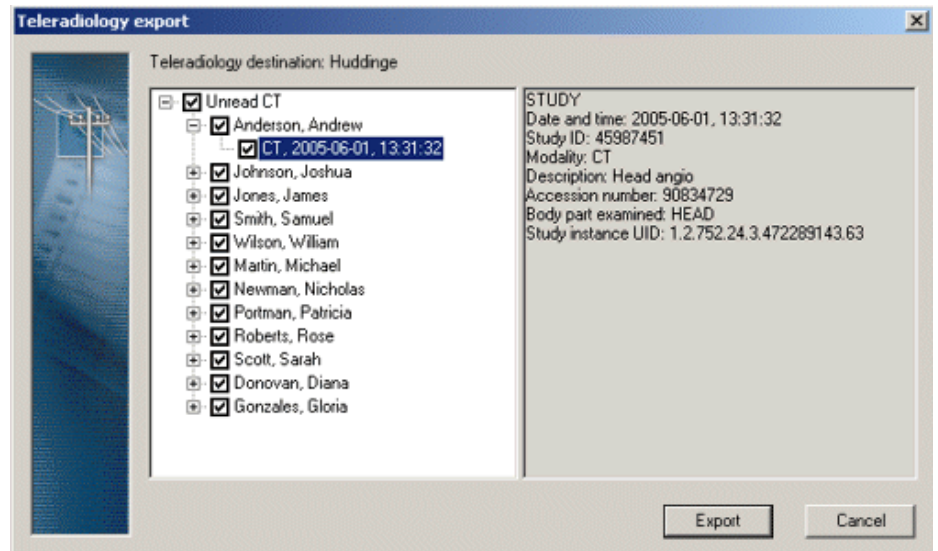
Scanned documents, if any, are included in the export. This option is not enabled when Anonymous is checked.

5.6.3 Export with Teleradiology

When selecting to export to a teleradiology destination, a dialog appears stating the selected destination. The dialog also contains a tree view of all the patients and examinations that are exported. If any of these examinations should not be sent, they can be deselected by clicking the corresponding checkbox in the tree view. Click **Export** when you are ready to start the export.

The labels for the examinations in the tree view are the same as the collapsed labels in the Matrix window for examinations, please read [section 12.7 Configuring Windows Properties](#).

Note: If there are no destinations available in the sub menu, or if your preferred destination is unavailable, Teleradiology has not been set up properly or is not available. Please contact your system administrator for further assistance.



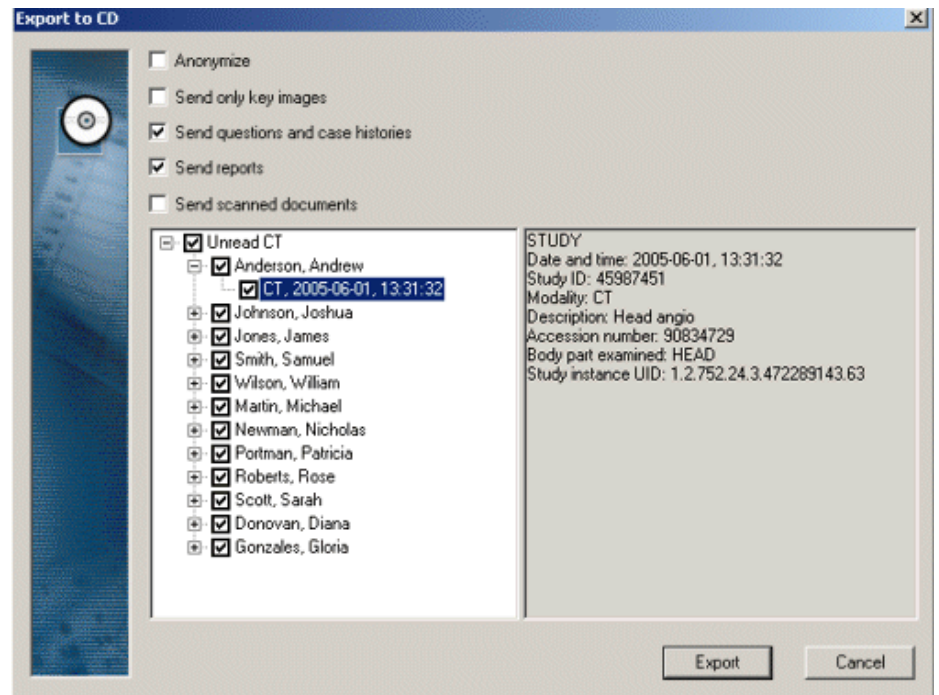
The Teleradiology export dialog.

5.6.4 Export to a CD

After selecting to export to CD, a dialog appears with the options described in [section 5.6.2 Export Options](#). Select the appropriate options before starting the export. The dialog also contains a tree view showing the selected patients and their corresponding examinations. You can uncheck the checkboxes for examinations that should not be exported, to exclude the examinations from the export.

The labels for the examinations in the tree view are the same as the collapsed labels in the Matrix window for examinations, please read [section 12.7 Configuring Windows Properties](#) for further information.

Note: When exporting directly to a CD, the CD must be formatted so that IDS5 can write to it in the same way as it writes to the hard disk. To format the CD, use packet writing software such as Drag-to-Disc (formerly DirectCD) by Roxio and InCD by Nero.



The CD export dialog.

Note: CD viewer is included on the exported CD.

5.6.5 Export to a user-defined folder

As an alternative to exporting to CD you can export examinations to any folder located on the local file system or a remote host, e.g. a USB memory stick.

► Export to a user-defined folder

1. Click **Tools->Worklists->Export to folder...**
2. In the export dialog box, select the appropriate export options, as described in [section 5.6.2 Export Options](#).
3. The tree view shows the selected patients and their corresponding examinations. You can clear the check boxes for examinations that should not be exported.
4. Click **Export**.
5. Select the destination folder to export to.
6. Click **OK**.

The exported data will be stored in the selected destination folder.

The exported data will be stored in the selected directory.

Note: When exporting to a user-defined folder make sure the windows user has write permissions at that destination.

Note: CD viewer is included on the exported folder destination.

5.6.6 Export to a CD/DVD Production Center

After selecting to export to a CD/DVD Production Center, a dialog appears with the options described in [section 5.6.2 Export Options](#). The options that are not described above, are listed here:

CD/DVD Production Center This option determines which of the configured CD/DVD Production Centers that should receive this order. The default CD/DVD Production Center can be configured per role.

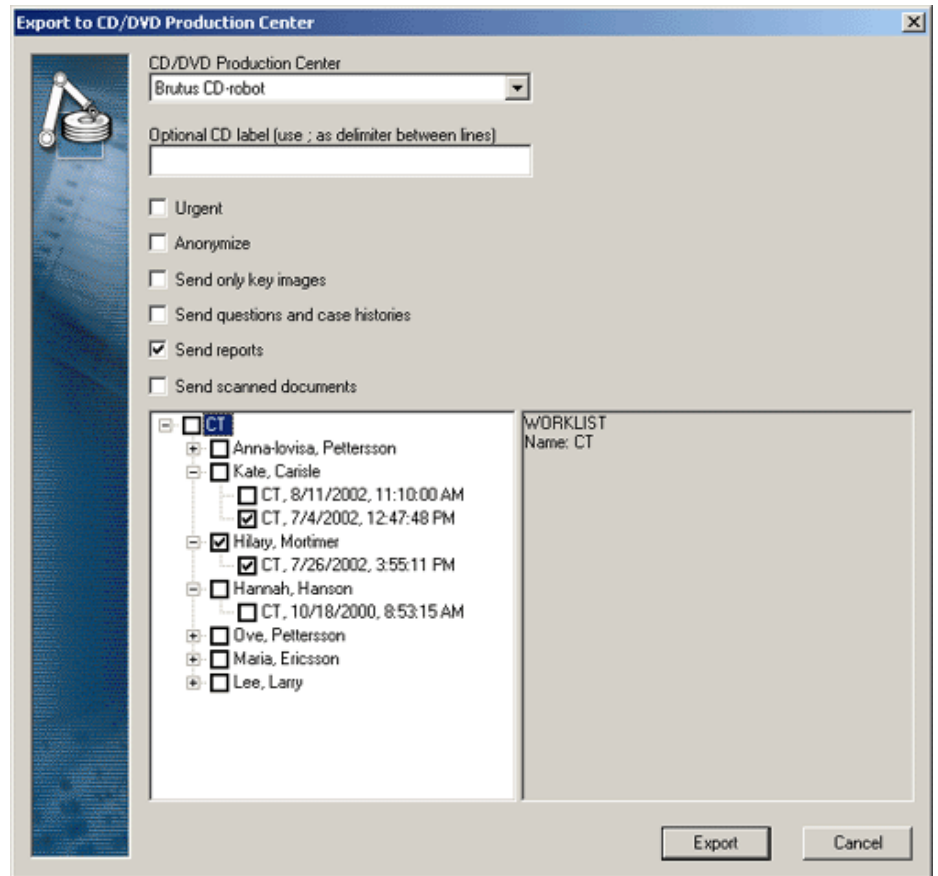
Urgent If this option is checked this order will get high priority. This means that it will be processed before all orders that has lower or no priority. (The urgent queue is processed in the order they were placed in queue.)

Optional CD label This is an optional field that will be printed on the CD/DVD label by the CD/DVD Production Center. Each line is separated by a semicolon (;). For example, "Address;Hospital;Country" will print:

Address
Hospital
Country

Note: It is recommended to use a maximum of three lines with approximately 25 characters each. However, it is possible to have more lines and/or characters per line, but then smaller fonts will be used to fit the text on the CD.

The dialog also contains a tree view showing the selected patients and their corresponding examinations. You can uncheck the checkboxes for examinations that should not be exported, to exclude the examinations from the export. The labels for the examinations in the tree view are the same as the collapsed labels in the Matrix window for examinations, please read [section 12.7 Configuring Windows Properties](#) for further information.



The CD/DVD Production Center export dialog.

All files that will be included on the CD/DVD, are sent to the CD/DVD Production Center. The status window tells when the job has been placed, and states the order number. The CD/DVD Production Center takes care of the order and produces the CD/DVD. If the production fails after the order has been placed, IDS5 will not receive any notice of this. On the CD/DVD Production Center host any failed orders can be opened to see who initiated the export and when. The order on the CD/DVD Production Center will have a name like order_#####, where ##### is the order number given by the IDS5. When an order has been processed and the CD/DVD is finished, the files will remain at the CD/DVD Production Center host. Any IDS5 that exports to that CD/DVD Production Center after an order is finished will remove the files before it places its own order. Even files belonging to failed orders are removed, except for the order file itself, that states who initiated the export.

Note: CD viewer is included on the produced CD.

5.6.7 Export to an E-mail Recipient

After selecting to export to a E-mail recipient, a dialog appears. In addition to the general options described in [section 5.6.2 Export Options](#), the e-mail export can be password protected.

Password protection

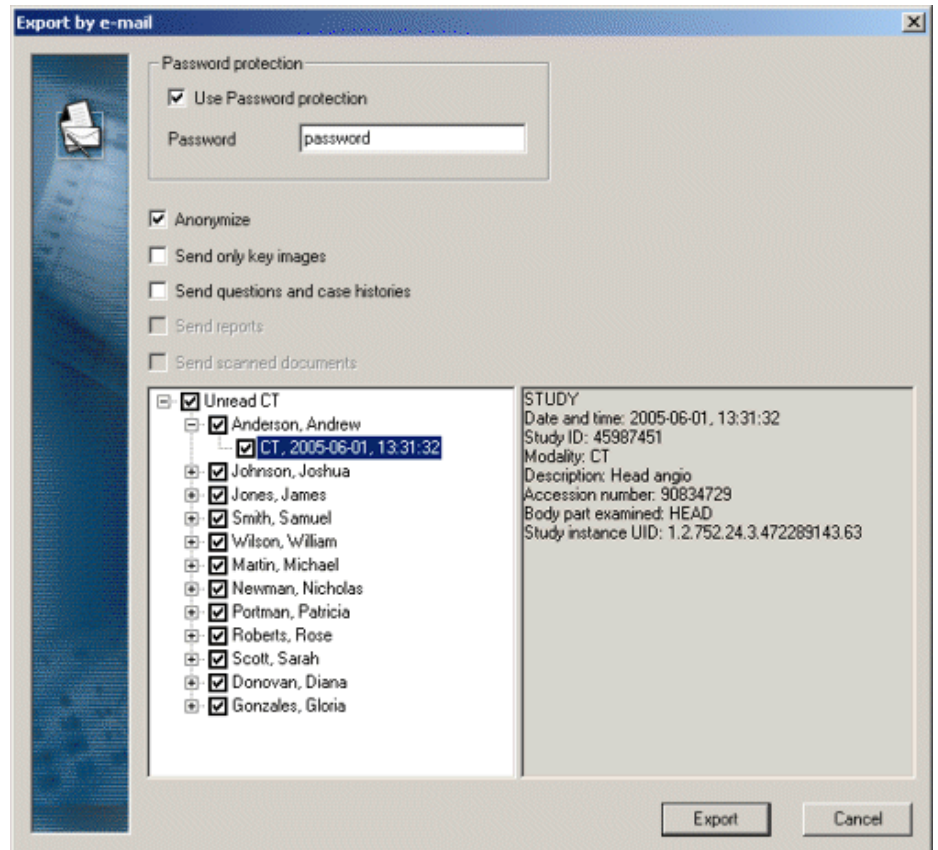
A password can be specified to protect the file that is exported. This password must be delivered to the recipient, preferably by other means than E-mail.

Select the appropriate options before starting the export.

The dialog also contains a tree view showing the selected patients and their corresponding examinations. You can uncheck the checkboxes for examinations that should not be exported, to exclude the examinations from the export. The labels for the examinations in the tree view are the same as the collapsed labels in the Matrix window for examinations, please read [section 12.7 Configuring Windows Properties](#) for further information.

When the **Export** button is clicked the export will gather all the files that should be included. An E-mail is created with the default E-mail program and the files are included as an attachment.

Note: This export will be carried out on open computer networks and with a well known standard protocol. This means that it is important to protect patient data. To ensure patient privacy, make sure to use either **Anonymize** or **Password protection**.



The E-mail export dialog.

Note: Exporting to E-mail requires that the computer has an installed and configured E-mail program. Please refer to your system's manual for instructions on how to install and configure the E-mail program. IDS5 will use the default E-mail program when exporting to E-mail, which makes it important to ensure that the configured E-mail program is default in Internet Options. Open the Internet Options under the Control Panel and click the Programs tab. Under this tab the default E-mail program of the system can be seen.

Note: Export via e-mail is intended for e.g. second opinions on individual images. It is not suitable to export entire large examinations via e-mail, as they put heavy load on the e-mail system. Check the size of the files before exporting via e-mail and consult your system administrator for recommendations. For large files, consider using telerad instead.

5.6.8 Import from a CD

The contents of a CD may be imported into the PACS.

Note: A DICOM compliant CD contains an index file called DICOMDIR which keeps track of all images on the CD. If this file is missing or broken, IDS5 still can try to import the images. In these cases, IDS5 will display a dialog and let you choose if you want to try to import the images or not.

▶ **Import from a CD**

1. Click **Tools->Worklists->Import from CD...** to start the CD import.
2. In the dialog that appears there is a tree view showing the contents. In this tree view, information about the patients and examinations can be found. Check the examinations that are to be imported and click **Import**.
3. Open the temporary worklist **Imported** to access the newly imported examinations.

5.6.9 Import from a user-defined folder

DICOM files located on the local file system or a remote host may be imported into the PACS.

Note: A DICOM compliant folder contains an index file called DICOMDIR which keeps track of all images in the folder. If this file is missing or broken, IDS5 still can try to import the images. In these cases, IDS5 will display a dialog and let you choose if you want to try to import the images or not.

▶ **Import from a user-defined folder**

1. Click **Tools->Worklists->Import from folder...** to start importing from the desired location.
2. Navigate to the desired folder to import from and click **OK**.
3. In the dialog that appears there is a tree view showing the contents. In this tree view, information about the patients and examinations can be found. Check the examinations that are to be imported and click **Import**.
4. Open the temporary worklist **Imported** to access the newly imported examinations.

5.6.10 Import from E-mail

When receiving an E-mail with an attachment of DICOM images, just double click the file and the import will start automatically. This requires that an IDS5 is already running and that a user is logged in. This is to prevent the import from being started for another user. If needed, a dialog will ask for a password. The import continues exactly as the Import from a CD. If the attachment is first saved locally, the import may be started by selecting the **Tools->Worklists->Import from E-mail...** command and opening the saved file from the open dialog that is displayed.

5.6.11 Import from DICOM Query/Retrieve Server

Examinations located on a [section 5.1.10 DICOM Query/Retrieve \(Q/R\)](#) server are displayed in the information window examination list with archive state Q/R. Apply the command **Import** from the pop-up menu in the Information window to import the examination to WISE. The archive state changes to Original and the examination is now located both in the WISE and at the Q/R server.

6 Using the Matrix Window

The following topics are included in this chapter:

- [Matrix Window Organization](#)
- [Arranging Images](#)
- [Adjusting Image Settings](#)
- [Applying a presentation \(manual or DDP\)](#)
- [Creating a DDP](#)
- [Creating a Manual Presentation](#)
- [Working with text notes](#)
- [Deleting images](#)

The Matrix Window is used to prepare images for viewing in the Image window. Preparation normally involves deletion of failed series, adjustment of image settings (orientation, grayscale, cropping etc), arranging images for comparison between different examinations or different types of images (another organ or another view of the same organ) and the such like.

You can use the functionality offered by the Matrix window to perform electronic hanging of images.

6.1 Matrix Window Organization

The Matrix Window consists of four main parts, the Patient text view, the Recycle Bin, the miniature screen view and the examination matrix itself.

6.1.1 The Patient Text View

The Patient Text View displays patient ID, patient name, and patient date of birth. This is purely an information field. The figure below is a snapshot of the Patient text view.

Patient ID	270912-4536
Patient name	Allen Daniel
Patient birthdate	9/12/27

The Patient Text View.

6.1.2 The Reject Bin and Recycle Bin

The bin is used for deleting images. There are two types of bins - reject and recycle bin - but in the common scenario you will only have one of these bins available.



The Reject bin — is used as a temporary storage for images that are to be deleted from this examination but kept in the system for future reject analysis.



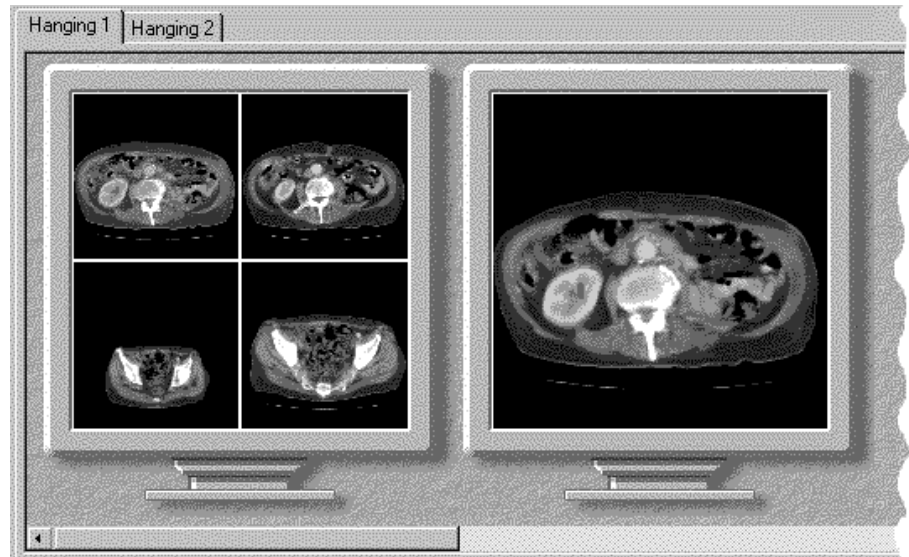
The Recycle bin — is used as a temporary storage for images that are to be permanently deleted from the system.

Images may be put in the bin either by using drag and drop, or the command **Reject Series/Delete Series**, which is available on images displayed in the matrix. The **Reject bin** command, **Empty Reject bin**, deletes the images from the examination. The images are now placed in special reject analysis worklists. The **Recycle bin** command, **Empty Recycle bin**, permanently deletes the images from the system.

6.1.3 The Miniature screen view

The Miniature screen view shows screens symbolizing the screens of the computer where the radiologist will view the images for the current request. The layout of the screens is determined by the current hanging. There can be more than one hanging to each examination. You can switch between different hangings by clicking on the tabs above the miniature screens.

You can change the order of the hangings by drag and drop. Click on one of the tabs above the miniature screens, and drag it to another tab. The hanging you moved will be placed before the hanging you dragged it to.



The Miniature screen view.

6.1.4 The Presentation Selector


The Presentation Selector on the toolbar shows all available presentations for the current base examination, both manual presentations and DDP's. The presentations in the list are sorted so that the most relevant presentation is first in the list.

A code is displayed after each presentation's name, indicating what type of presentation this is. The following codes exist:

- | | |
|---|--|
| (M) - Manual presentation | This code means that this presentation has been manually created by a user. A manual presentation can be made for a single user, for a role or for all users in the system. |
| (TF) - Teaching file | This code indicates a manual presentation that is associated with a specific teaching file. If the current worklist is the teaching file or scheduled demonstration, the presentation will be selected before any other manual presentations or DDP's. |
| (DDP) - Default display protocol | This indicates a presentation created from a default display protocol. |

The codes (M+) and (TF+) can also be shown, indicating that the presentation is associated with an examination other than the current base examination. This can be the case if the workstation has been configured to show presentations for all

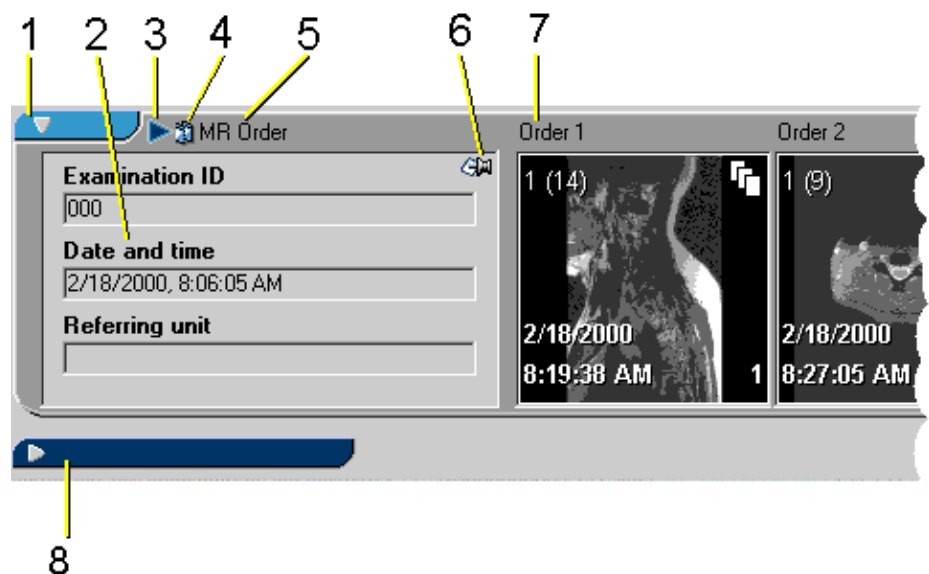
examinations in the current request, or for all examinations that match the worklist search criteria for the current patient.

Important:  For information on warning symbols next to the presentation selector, see [section 6.4 Applying a presentation \(manual or DDP\)](#).

6.1.5 The Matrix

The Matrix consists of a number of rows, one for each examination in the request. All rows are sorted so that the latest examination is always on top. The idea behind the matrix is to have images of the same type in the same column for every examination. By organizing images in this way, it is easier to compare images from different examinations.

Note: It is possible to wrap the icons within each examination. If this is done, examinations may consist of several rows of icons. For examinations with many series this gives an improved overview of the examination. However, the principle of having images of the same type in the same column will no longer be valid.



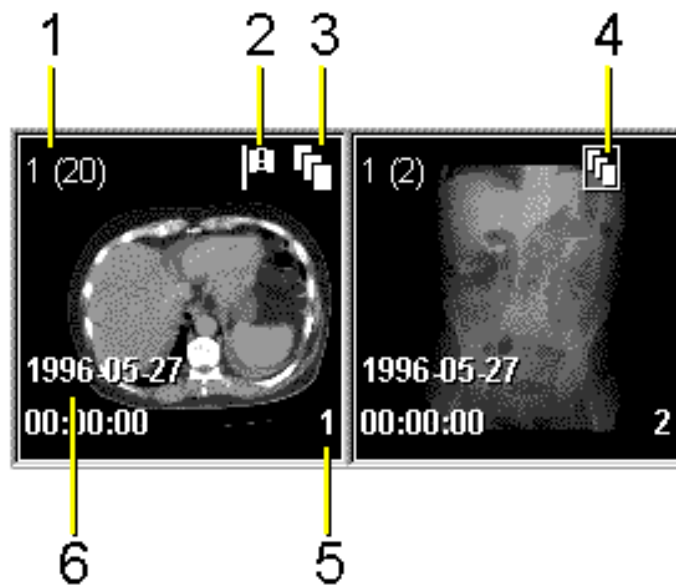
The Matrix.

1. Expand/Collapse button for an expanded examination.
2. Examination Text View.
3. Base examination symbol.
4. Examination part of a presentation.
5. Examination type label.
6. Text Note symbol.
7. Series type label.
8. Expand/Collapse button for a collapsed examination.

Each row in the matrix begins with an Examination text view showing some data about each examination (2). If a Text Note is attached to the examination this is indicated by a small drawing-pin icon (6). Above the Examination text view is a row that displays additional information about the examination (3, 4, 5). If the examination is a base examination, this is indicated by an arrow to the left of the Examination type header (3) and the Examination button has a slightly paler color than usual (1). If the examination is part of a presentation, this is indicated by a small symbol showing two overlapping images (4). The text information in the Examination header describes the examination type (5). To the right of the examination text view are the Matrix icons, one for each series in the examination. Above each Matrix icon is a type label that indicates the series type (7).

An examination can either be expanded or collapsed. In the figure above one expanded examination (1) and one collapsed examination (8) is shown. Which examinations are expanded and collapsed is determined by the DDP or the manually selected presentation. Clicking on the Expand/Collapse button manually expands or collapses an examination. The information displayed in collapsed and expanded mode is configurable, please read [section 12.7 Configuring Windows Properties](#).

Each Matrix icon contain a series of images. This can either be a single image, a stack of images, or a collection of images. The figure below shows two matrix icons.




Matrix icons.

1. Current displayed image, and total number of images in a stack or collection.
2. Image symbol - key image.
3. Image symbol - stack.
4. Image symbol - collection.
5. Matrix position.
6. Date and time when the image was produced.

To the upper left corner of each image are two numbers, representing the current viewed image in a stack or collection and the total number of images in the stack

(1). In the left Matrix icon above, the first image of twenty is displayed. For single images the number combination "1(1)" is shown.

Stacks, collections, and multi-frame sequences are identified by the icon in the upper right corner. The icon to the left contains a stack (3) and the icon to the right contains a collection (4). Multi-frame sequences are indicated by the symbol .

Important or interesting images can be marked as key images. The key image symbol is shown in the left matrix icon (2).

The date and time when the image was taken is shown to the lower left (6). To the lower right is a number that indicates the position of the series in the matrix (5). This position number is also shown in the Image windows, and can be useful when navigating in the matrix from an Image window.


6.1.6 Delayed and Pending Images

When a worklist spans over one or more DICOM Q/R archives, images may turn up as black squares containing the word "delayed". This means that the image exists in the archive, but has not yet been moved to the workstation to avoid unnecessary delays. To retrieve delayed images for a patient, select **Fetch delayed** in the patient pop-up menu. While the image is being transferred from the archive, it will be represented by the text "pending".

6.2 Arranging Images

Before images are presented in the Image Windows it may be necessary to arrange them properly in the matrix. This might, for example, include grouping images of the same type together, defining key images, changing the series type, etc.

6.2.1 Collections

A collection is two or more images that have been grouped together. There are two main reasons for wanting to create a collection. First, a modality might send a series of images that are easier handled as stacks, in which case all the images in an examination can be collected together. Second, there may be a varying number of images in two different examinations that are compared, in which case images of the same type are collected to preserve the concept of the matrix, i.e. images of the same type are placed in the same column. In the Matrix window and Image windows, collections are always marked with the collection symbol .

► To create a collection

1. Hold down the CTRL-key while using the mouse to drag the images that are to form the collection onto each other. When dropped, the dragged images will be placed last in the collection. Note that even other collections can be added to an existing collection.
2. Repeat step 1 until all desired images have been placed in the collection.

A new collection of the images that have been dragged together will then be created.

Note: A collection of images can only be made with images from the same modality, that has the same bit depth, and the same number of samples per pixel. Images that have been manually calibrated cannot be added to a collection for safety reasons. To collect such images, you must first remove any manual calibration.

► **To create a collection of all images in an examination**

1. From the **Patient text view** pop-up menu, select **Collect all**.

All images in an examination will be put into one collection.

Note: The **Collect all** command will collect "as much as possible". This means that if there are images in an examination that do not match, they will be put into different collections. For safety reasons, images that have been manually calibrated will not be collected.

► **To split a collection**

1. Select the collection you want to split.
2. From the Matrix icon pop-up menu, click **Collection** and **Split**.

The images in the collection will be split up.

6.2.2 Key Images

The concept of key images can be used to mark important or interesting images. From the Image Windows you can use special commands to quickly navigate between key images. For more information on how you can move between key images, please read [section 7.5 Key Images](#).

► **To set or reset the key image tag**

1. Place the mouse pointer over the image (matrix icon) that you want to mark as a key image.
2. From the Matrix icon pop-up menu, click **Key Images** and **Set All** to set this image, stack or collection as a key image. Alternatively, click **Reset All** to remove the key image tag.

If a key image tag is set, a key image symbol will be visible in the matrix icon.

6.2.3 Joining Images - basic scoliosis function


The term "joining two images" means that two images are "glued" together to form a new one. To be able to join two images, they must have the same width in pixels, same channels, same bit depth and the same photometric details. They must also both not be in stacks.

▶ **To join two images**

1. Hold down the SHIFT-key while using the mouse to drag the images that are to form the joined image.

The image you are dragging is called the source image, and the other image is denoted target image. The cursor will change its appearance depending on where the mouse is positioned over the target image.

If the cursor is on the upper half, the source image will be joined above the

target image and the cursor will look like this: 

If the cursor is on the lower half, the source image will be joined below the

target image and the cursor will look like this: 

2. Release the mouse-button and confirm the joining operation by clicking the **OK** button in the dialog box. Otherwise click the **Cancel** button. The new image will be placed last in the collection.

6.2.4 Force Examination Type Matching

If an examination has the wrong examination type, i.e. the Examination type label does not correspond to the examination being performed, it is possible to force a change of the examination type.

▶ **To force examination type matching**

1. From the Examination text view, click **Force examination type**, and select the correct examination type.

The examination type label will change to the selected examination type.

▶ **To remove a forced examination type matching**

1. From the Examination text view, click **Force examination type** and **Remove forced examination type**.

The examination type will change back to its original state.

6.2.5 Force Series Type Matching

If an image in a series has been put in the wrong position in the Matrix, i.e. the type label does not correspond to the actual image, it is possible to force the image to change its series type.

▶ **To force series type matching**

1. Drag and drop the Matrix icon that is in the wrong place, to the cell that has the correct type label (the type label is shown above each cell).

When the image is dropped it is automatically matched to the right series type. If there was an image already occupying the series type, this image will be moved to the last position in the examination row.

► **To remove forced series type matching**

1. Place the mouse pointer on the series whose forced series type matching you want to remove.
2. From the Examination row pop-up menu, click **Remove forced series type**.

The initial images will reappear in their original place.

6.3 Adjusting Image Settings

From the Matrix Window it is possible to perform various kind of image processing. This includes changing the orientation of the images, cropping, grayscale operations, etc.

► **To change the orientation of an image**

1. Place the mouse pointer above the image whose orientation you want to change.
2. From the Examination row pop-up menu, click **Orientation** and select the operation you want to perform. The following operations are available:

Flip vertical	Flips the image vertically, along the horizontal axis.
Flip horizontal	Flips the image horizontally, along the vertical axis.
Rotate 90°	Rotates the image clockwise a quarter-turn.
Rotate 180°	Rotates the image clockwise a half-turn.
Rotate 270°	Rotates the image clockwise a three quarter-turn.

► **To invert the image**

Note: Some images contain information about which part of the image is regarded as the background. If **Invert** is applied to such an image, only the foreground is inverted. This significantly enhances the readability of an inverted image.

1. Place the mouse pointer above the image you want to invert.
2. From the Examination Row pop-up menu, click **Invert**.

► **To perform cropping, grayscale operations, zooming etc**

1. Place the mouse pointer on the image whose image settings you want to change.
2. From the Examination Row pop-up menu, click **Open quick window**. Alternatively, you can double-click on an image to bring up the Quick Window

(unless you have configured that the Image window should be opened for this operation).

The Quick Window will be opened, in which it is possible to adjust image settings like cropping, grayscale, zoom etc. When the Quick Window is closed the miniature image icon will be automatically updated to reflect the new image settings. For more information on how you use the Quick Window, see [chapter 8 Using the Quick Window](#).

6.4 Applying a presentation (manual or DDP)


When you select an examination in the Information Window a DDP or manual presentation will automatically be applied. The images in the examination will be hung according to the selected DDP or presentation. IDS5 selects a DDP or presentation based on certain rules:


- A manual presentation has higher priority than DDP's. If a manual presentation exists it will be chosen before any of the DDP's. Manual presentations are sorted so that the user presentations appear first, then role presentations, and finally the system presentations.
- Among the DDP's, the one that "uses" as many as possible of the available examinations for a specific patient, will be applied.

Example: A patient has three examinations prior to the base examination. In this case, a DDP defined for three prior examinations will therefore have higher priority than a DDP defined for one prior examination.

The currently selected DDP or manual presentation is shown in the presentation selector in the toolbar. By clicking in the drop-down list you can manually apply a specific DDP or presentation.

The following warning symbols may be displayed next to the presentation selector, indicating that you are not viewing all relevant images:

Important:  This symbol indicates that there are images in the current base examination that are not displayed in the current presentation. If all images in the base examination are added to the presentation, the symbol will disappear, see [section 6.6 Creating a Manual Presentation](#).

Important:  This symbol indicates that there are more miniature monitors (virtual screens) in the presentation than physical monitors available for your workstation. Select a presentation with the correct number of monitors from the presentation selector, or create a suitable manual presentation, see [section 6.6 Creating a Manual Presentation](#).

6.5 Creating a DDP

To create a custom DDP you use the DDP editor. In the editor you can define templates for how images for certain types of examinations should be viewed (i.e. number of monitors, screen partitioning, zoom level, stack tiling, etc).

► To start the DDP Editor

1. From the **Tools** menu, select **DDP Editor**.

The DDP Management dialog appears displaying all available DDP's.

2. Click **New** to create a new DDP, or select an existing DDP, and click **Edit** to edit this DDP.

The DDP editor window will be opened.

The DDP editor window is similar in appearance to the Matrix window, see the snapshot below. At the top is the Miniature Screen view, and at the bottom the examination row templates. As this is a *template*, no images are displayed, just the examination and series *types*. In the figure below, the examination type is CR Chest, and the series types are AP and Lateral. The image being viewed is AP.



The DDP editor.

The normal workflow when creating DDP is as follows:

1. Specify the number of screens that should be used.

2. Specify the screen partitioning for each screen.
3. Specify which examinations should be used.
4. Specify where each image should be presented, i.e. perform a hanging.
5. Specify image settings.
6. Specify image synchronization groups, i.e. define the behavior of the group synchronization command.
7. Save the DDP.

6.5.1 Adding and Removing Screens

You can both add and remove screens. The number of screens should be equal to the number of computer monitors used for image viewing by the radiologist.

▶ **To add a miniature screen**

1. From the **Hanging** menu, select **Add monitor**.

A new miniature screen will be inserted on the extreme right. Up to four screens are supported.

▶ **To remove a miniature screen**

1. From the **Hanging** menu, select **Remove monitor**.

The screen on the extreme right will be removed.

6.5.2 Determining Screen Layout

Each screen can be partitioned in several different ways. Supported partitioning is 1x1, 1x2, 1x3, 2x1, 2x2, 2x3, 3x1, 3x2 and 3x3. The 1x1 partition means that only one image appears on the screen. A 1x2 partition means that two images appear side by side on the screen. A 3x1 partition means that there are three images above each other.

▶ **To partition the screen**

1. Place the mouse pointer over the miniature screen whose partition you want to change.
2. From the **Miniature Screen** pop-up menu, click **Partition** and select the desired partitioning, i.e. **1x1**, **1x2**, **1x3**, **2x1**, **2x2**, **2x3**, **3x1**, **3x2** or **3x3**.

You can also specify the stack tiling if stacks or collections are being displayed.

▶ **To specify stack tiling**

1. Place the mouse pointer over the miniature screen whose stack tiling you want to change.

2. From the **Miniature Screen** pop-up menu, click **Stack tiling** and select the desired tile mode, i.e. **Stack 1x1**, **Stack 2x2**, **Stack 3x3** or **Stack 4x4**.

6.5.3 Adding Examinations

A DDP can contain one or more examinations. When a DDP is applied to a case, IDS5 will try to match your DDP with the available examinations.

► **To add an examination to the DDP**

1. From the **Examination** menu, select **Add examination**.

A new examination row will be added. To the left of the examination row there are two drop-down lists.

2. From the upper drop-down list, select which type of examination should be matched. This can for example be a CR Order, CR Chest or CT Head.
3. From the lower drop-down list, select which examination within a certain type should be matched. This can for example be the most recent examination, the oldest examination, etc.

Examinations can be removed by selecting **Remove examination** from the **Examination Row** pop-up menu.

6.5.4 Hanging Images

Image templates can be hanged by dragging the matrix icons from the matrix to the desired position on the miniature screens. The miniature screens will then be updated to reflect the images that are to be presented.

6.5.5 Specifying Image Settings

A DDP can apply a number of image settings. Which settings are available depends on which IDS5 product you are running. More information on some of the settings can be found in other parts of this document; see the links below. The complete list is:

- Automatic crop (see [section 7.3.4 Cropping](#))
- Zoom (see [section 7.3.2 Zooming](#))
- Flip (horizontally, vertically or both)
- Rotation (0°, 90°, 180° or 270°. Note that rotation is applied before flipping.)
- Horizontal alignment (the horizontal alignment of the image when it is zoomed to fit the window)
- Vertical alignment (the vertical alignment of the image when it is zoomed to fit the window)
- Initial slice (which slice of a stack that initially displayed)

- Stack tiling (see [section 7.4.2 Viewing a Stack](#))
- Scanogram (see [section 7.4.4 Using Scanograms](#))
- Slab mode (see [section 7.16 Slab view](#), cannot be combined with Clinical Applications)
- MPR (whether [section 7.17 MPR - Multiplanar reconstruction](#) should be started)
- 3D (whether [section 7.18 3D - Volume rendering](#) should be started)
- NM control (if the Nuclear Medicine control is to be visible)
- Palette (which color palette that should be applied)
- Clinical Applications (whether a [Clinical Application](#) should be started, cannot be combined with Slab mode)
- Presentation states (whether a [DICOM presentation state](#) should be applied)
- Display CAD results (whether a [CAD presentation](#) should be displayed)

6.5.6 Specifying Image Synchronization Groups

Group synchronization is designed to make image synchronization more efficient, as the selection of images to be synchronized can be prepared in a DDP or a manual hanging. The images that belong to the same synchronization group are then automatically synchronized when the **Group synchronize** command is applied. The alternative would be to manually synchronize the images.

► **To specify a synchronization group**

1. From the Miniature Screen pop-up menu click **Group Sync** to select a synchronization group for each screen.

Membership of synchronization groups is used to control the behavior of the **Group Sync** command, which is available in the image window.

2. Four synchronization groups are available for each hanging, and the default value for a screen is none. The synchronization group to which a DDP screen belongs, is set by selecting one of the available synchronization groups, i.e. **Sync group 1** to **Sync group 4** in the pop-up menu that appears when right-clicking on the DDP screen.

For more information about group synchronization, please read the [Group Sync](#) command description.

6.5.7 Saving a DDP

When you have determined the screen layout and hung the images, save the DDP.

► **To save a DDP**

1. From the **File** menu, select **Save as...** (if you are editing an existing DDP you can select **Save** if you want to overwrite the old DDP).

The **Save as** dialog appears.

2. Type in a name for the new DDP.
3. Select whether the DDP should be saved for personal, role, or system use by clicking in the drop-down list. Note that if you do not have permission to save for role or system use, these alternatives will not be displayed in the drop-down list.
4. Click the **Save** button.

The DDP is now saved on the server.

6.6 Creating a Manual Presentation

In some cases a presentation based on a DDP is not sufficient. This might be the case if you, for instance, want to use another screen partitioning than the one offered by the DDP. In these cases you can create a manual presentation. A manual presentation gives you full control over how images are hung.

Creating a manual presentation normally involves the following steps:

1. Add or remove miniature screens.
2. Determine the screen partition of each miniature screen.
3. Define which image is to be shown in each partitions area of each screen.
4. Adjust image settings (for more information on how to adjust images settings, please read [section 6.3 Adjusting Image Settings](#)).
5. Save the presentation.

6.6.1 Adding Screens

You can both add and remove screens. The number of screens should be equal to the number of computer monitors at the installation used by the radiologist for image viewing.

► **To add a miniature screen**

1. From the **Edit** menu, select **Add monitor**.

A new miniature screen will be inserted at the extreme right. Up to four screens are supported.

► **To remove a miniature screen**

1. From the **Edit** menu, select **Remove monitor**.

The screen on the extreme right will be removed.

6.6.2 Determining Screen Layout


Each screen can be partitioned in several different ways. Supported partitions are 1x1, 1x2, 1x3, 2x1, 2x2, 2x3, 3x1, 3x2 and 3x3. The 1x1 partition means that only one image appears on the screen. A 1x2 partition means that two images appear side by side on the screen. A 3x1 partition means that there are three images above each other.

► To partition the screen

1. Place the mouse pointer over the miniature screen whose partition you want to change.
2. From the **Miniature Screen** pop-up menu, click the desired partitioning, i.e. **1x1**, **1x2**, **1x3**, **2x1**, **2x2**, **2x3**, **3x1**, **3x2** or **3x3**.

6.6.3 Hanging Images

Images can be manually hung by dragging the image icons from the Matrix to the desired position on the miniature screens. The miniature screens will be updated to reflect the images that are to be presented. Clicking on an image in one of the miniature screens will invert the corresponding Matrix icon, so that you can see which image is actually hung. The cursor will look like this before dropping images

on a miniature screen: 

6.6.4 Hanging Examinations

Entire examinations can be manually hung by dragging the examination to the desired position on the miniature screens. The miniature screens will be updated to reflect the images that are to be presented. New miniature screens will be automatically added, when required, using the same partition as the previous miniature screen.

6.6.5 Hanging Key Images

The key images of stacks or collections can be manually hung by pressing the SHIFT-key while dragging the image icon. The result of this action will be to present all the key images in the stacks or collections miniature screens on miniature screens. New miniature screens will be automatically added, when required, using the same partition as the previous miniature screen. Hanging examinations while pressing the SHIFT-key hangs all of the examination's key images. The cursor will look like this before dropping key images or examinations on a miniature screen:



6.6.6 Start Clinical Application

A manual presentation can also start a Clinical Application automatically. To achieve this, the Clinical Application should be running in the Image windows when the presentation is saved. Move to the Image window and start a Clinical Application for the appropriate images, using the sub-menu **Clinical applications** in the pop-up menu. Please, see also [section 1.5.2 Clinical Applications](#).

6.6.7 Saving a Manual Presentation

When you have determined the screen layout and hung the images, save the presentation.

► **To save a presentation**

1. From the **File** menu, select **Save presentation** or **Save presentation as....** If you select **Save presentation as...** you will be given the opportunity to save the presentation under a new name.

The **Save as** dialog appears.

2. Type in a name for the new presentation.
3. Select whether the presentation should be saved for personal, role, or system use by clicking in the drop-down list. Note that if you do not have permission to save for role or system use, these alternatives will not be displayed in the drop-down list.
4. Click the **Save** button.

The presentation is saved on the server. To remove a presentation, select **Remove presentation** from the **File**-menu.

6.6.8 Teaching File Presentations

A teaching file presentation is a presentation that is specific for a certain teaching file or scheduled demonstration occasion. The presentation will be automatically selected when you are working in that teaching file or occasion. There are two possible workflows when using teaching file presentations.

One way is to fill the teaching file or occasion with examinations, see [section 5.1.3 Creating a Teaching File](#). Then create the presentation in the teaching file or occasion. In this case, presentations are saved just as in an ordinary manual presentation (see above), where you specify that it should be saved for the teaching file instead of system, role or user.

An alternative workflow is to arrange the presentation while working with the examination in another worklist. Then, by adding the base examination to the teaching file or occasion, see [section 5.1.3 Creating a Teaching File](#), the current arrangement will be automatically saved as the teaching file presentation.

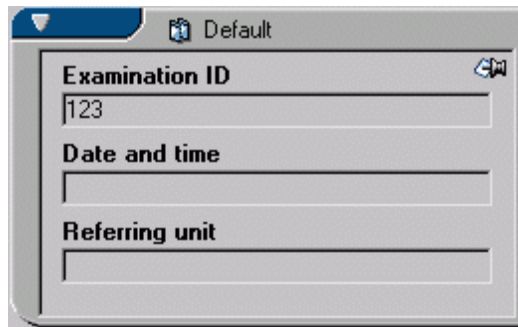
6.6.9 Report presentations

A "Report presentation" is presented to users of the IDS5/web product and it is also exported to DICOM media, while other types of presentations are not.

A presentation becomes a Report presentation if it is saved either by using the **Save report presentation** command or by selecting type "Report presentation" in the **Save presentation as...** dialog. It is not possible to select a name for a Report presentation, since there can only be one Report presentation per base examination.

6.7 Working with text notes

Each examination can have a text note with additional information, just like a post-it note. The note can be removed, added, and edited if you have the necessary privileges to do this. If an examination has a text note attached to it, the drawing-pin icon is shown in the upper right corner of the Examination text view (see figure below).



► To view a text note

1. Click the text note icon in the upper right corner of the Examination text view.
2. The text note is placed on top of the Examination text view.
3. Close the text note by pressing Escape, or by clicking the cancel icon in the upper right corner of the text note (see figure below).



► To remove a text note

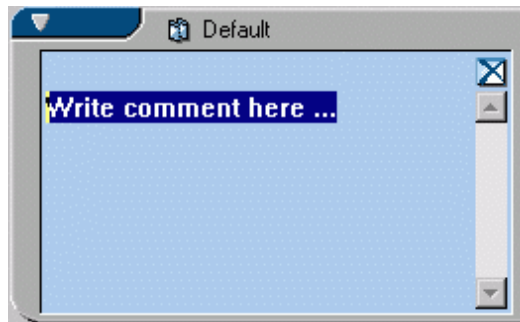
1. Right click the **Examination text view** to display the pop-up menu, and select **Text note, Remove**.

2. The text note icon will disappear from the **Examination text view**.

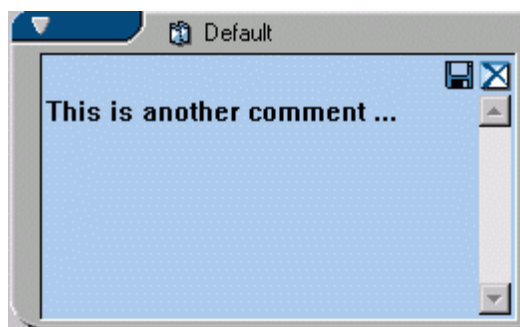
► **To add a text note**

1. Right click the **Examination text view** to display the pop-up menu, and select **Text note, Add**.

A new text note will be displayed, with a default message (see figure below).



2. Type your comment about this examination and click the **save** icon, i.e. floppy disc in the upper right corner (see figure below).



The text note will be closed and saved and the text note icon will appear in the Examination text view.

► **To edit a text note**

1. Right click the **Examination text view** to display the pop-up menu, and select **Text note, Edit**.
2. The text note will now be shown with the text highlighted.
3. Edit the text as necessary, and save your changes by clicking the **save** icon.

Alternatively ...

4. If you are viewing a text note, right click the note and select **Edit** from the pop-up menu.
5. Make the necessary changes and save the note as above.

6.8 Deleting images

Images are deleted by dragging them to the bin. There are two types of bins - reject and recycle bin - but in the common scenario you would only have one of these bins available.

- The **reject bin** is used as a temporary storage for images that are to be deleted from this examination but kept in the system for future reject analysis.
- The **recycle bin** is used as a temporary storage for images that are to be permanently deleted from the system.

6.8.1 Using the reject bin

Note: To be able to delete images by placing them in the reject bin, you must have the **Reject Analysis Package** license and the **Reject Series** permission. This permission is available on a per role basis and can be configured in WISE/tools by your system administrator.

When rejecting series they are deleted from that examination and patient. However, the rejected series will be available together with a reject reason and comment in special reject analysis worklists. Series can be rejected from the Matrix window as well as directly from the Quick or Image windows. It is possible to reject a single series as well as stacks and collections. When rejecting a stack or a collection all images will be rejected with the same reject reason and comment.

► To reject series

1. Drag-and-drop the image icon to the reject bin or select **Reject series...** from the image icon menu.

You can also reject series directly from the Quick window or Image window by selecting **Reject series...** from the pop-up menu.

2. In the **Reject dialog**, select a reject reason for the rejection. You can also enter a reject comment, which is mandatory if you have selected the reject reason **Other failure**.

If your site is not employing reject analysis, please select reject reason "Soft delete".

3. Click **OK**. The series is now placed in the reject bin awaiting confirmation and you can continue working with the patient.
4. Before leaving the patient, the reject bin must be emptied, i.e. either you must confirm the rejections you have done or restore the images. From the reject bin menu, select **Confirm all rejections**.



An empty reject bin

Reject bin containing images

► **To undo a rejection before confirmation**

Before the rejection has been confirmed it is possible to undo the rejection.

1. Open the reject bin window by double-clicking the reject bin, or by selecting **Open reject bin** in the **Reject bin** menu.
2. Right-click the image icon that you want to restore and select **Restore series**. The series will disappear from the **Reject bin** window and reappear in the matrix.

Alternatively you can select **Restore all series** to restore all series in the reject bin.

3. Click **Close** to close the reject bin window.

Since rejected series are not actually deleted from the system but only from that particular examination, it is also possible to restore rejected images after the rejection has been confirmed. For more information see [To restore rejected images after confirmation](#).

6.8.2 Using the recycle bin

Note: To be able to delete images by placing them in the recycle bin, you must have the **Delete exam/series** permission. This permission is available on a per role basis and can be configured in WISE/tools by your system administrator.

When deleting series they are permanently removed from the system. Series can be deleted from the Matrix window as well as directly from the Quick window. It is possible to delete single series as well as stacks but not collections. A collection must be split and the images deleted separately.

Note: It is only possible to delete images that have not yet been archived.

► **To delete series**

Warning: Image deletion cannot be undone.

1. Drag-and-drop the image icon to the recycle bin or select **Delete series...** from the image icon menu.

You can also delete series directly from the Quick window by selecting **Delete series...** from the pop-up menu.

The series is now placed in the recycle bin awaiting confirmation and you can continue working with the patient.

2. Before leaving the patient, the recycle bin must be emptied, i.e. either you must confirm the deletions you have done or restore the series. From the **Recycle bin** menu, select **Empty recycle bin**.
3. Note that image deletion cannot be undone. Confirm the deletion by clicking in the confirmation dialog checkbox and clicking **OK**.



An empty recycle bin



Recycle bin containing images

► **To restore deleted images**

Before the recycle bin has been emptied it is possible to undo the deletion.

1. Open the recycle bin window by double-clicking the recycle bin, or by selecting **Open recycle bin** in the **Recycle bin** menu.
2. Right-click the image icon that you want to restore and select **Restore series**. The series will disappear from the recycle bin window and reappear in the matrix.

Alternatively you can select **Restore all** to restore all series in the recycle bin.

3. Click **Close** to close the reject bin window.

7 Using the Image Windows

The following topics are included in this chapter:

- Image Window Organization
- Image symbols
- Operations on Images
- Operations on Stacks, Collections and Multiframe Sequences
- Key Images
- Synchronizing Images
- Adjust images individually
- Performing Measurements
- Putting Annotations in an Image
- Overlay plug-ins
- Navigating among Images
- Fetching Images
- Image Calibration
- Viewing Virtual 3D Images
- Image Addition
- Slab view
- MPR - Multiplanar reconstruction
- 3D - Volume rendering
- The NM Control
- Color Palettes
- Clinical Applications
- Mammography screening
- Mammography CAD
- DICOM Presentation States
- Compressed images

The Images Windows are used for inspecting and comparing images or stacks. You can have up to four Image Windows, one on each monitor, showing images from different examinations or organs from a patient. The layout of images in each Image Window is determined by the hangings defined in the Matrix Window. In the Image

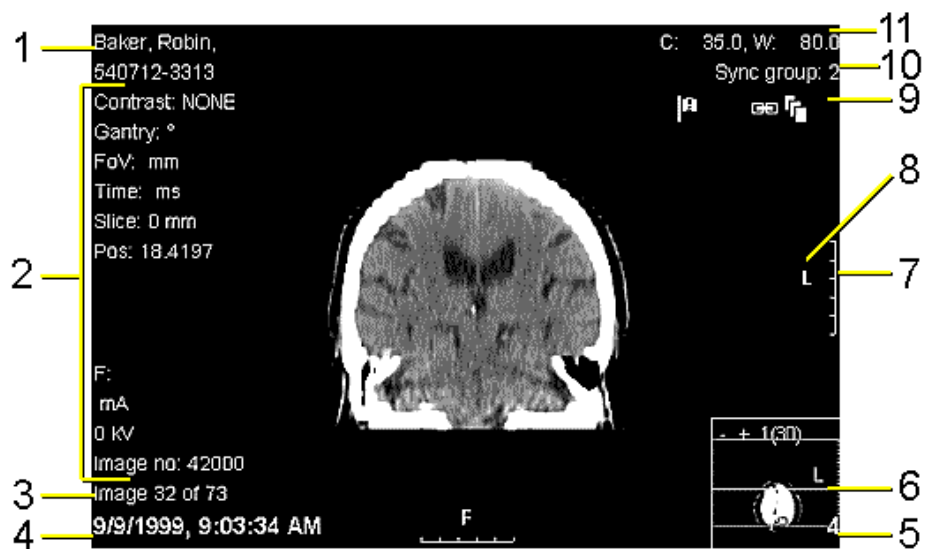
Window you also have access to a range of operations for manipulating images, e.g. different kinds of measurements, zooming, setting grayscale, etc.

This section describes how to use the functionality offered by the Image windows.

7.1 Image Window Organization

Besides the image being viewed, the Image Window also contains an overlay with status information about the image.


The figure below shows a snapshot of the Image Window.



The Image Window.

1. Patient information.
2. Information from the modality.
3. Current viewed image and the total number of images in a stack or collection.
4. Date and time when the image was produced.
5. Image position in the matrix.
6. Scanogram.
7. Ruler.
8. Side markings.
9. Image symbols, here showing: key image, synchronization and stack symbols.
10. Synchronization group number if member of a synchronization group.

11. Center and width of grayscale window.

Important:  For information on warning symbols next to the presentation selector, see [section 6.4 Applying a presentation \(manual or DDP\)](#).

Patient information is displayed in the upper left corner, i.e. patient name and ID (1). Below the patient ID information relating to the modality being used (2). If a stack or collection is being viewed the position of the current image, along with the total number of images in the stack or collection will be shown in the lower left corner (3). Also at the bottom left is the date and time when the image was produced (4).

In the upper right corner, the center and width of the grayscale window is displayed (11). If the image belongs to a synchronization group, the synchronization group number is shown (10). Below this are the image symbols (9), here showing that this particular image is marked as a key image, that the view is synchronized with another image view and that we are viewing a stack. All the available image symbols are listed and described in [section 7.2 Image symbols](#) below.

A calibrated image can be supplemented with rulers at the sides (7). Which image types have rulers and where they are located is specified in the system configuration. If a ruler is displayed, it is usually 5 centimeters long and has centimeters markings each centimeter.

To the left of the ruler there is a side marking, indicating the orientation of the image (8).

Important: The orientation information is taken from the DICOM image and depends on the correctness of the information in the DICOM image. Thus, if the information is incorrect in the DICOM image, these side markings should not be used as indicators for the true orientation of the image.

At the bottom right is a scanogram that is used to show which part of a stack (or parts if in tile mode), that is currently being viewed (6). The position of the image in the matrix is also shown in the bottom right corner (5).

► **To hide/show image information**

1. To hide some of the information presented in the Image window select **Image Information** from the **View** menu and select **Minimum**.

All information is however not hidden. For example, patient name and ID are still displayed. This information can be hidden by selecting **Anonymized** image information. To view all available information again, select **Maximum**.










7.2 Image symbols












The image symbols are displayed in the upper right corner of the [Image Window \[96\]](#), giving additional information of the currently viewed image such as type and view state. The available image symbols are described in the table below:

Adjust images individually



The series is currently being adjusted individually. The command enables individual

	adjustments of series that are part of a collection. Image operations are always applied simultaneously to all slices in a stack. Read more in section 7.7 Adjust images individually .
Collection	 The series is a collection. A collection is a group of images assembled by the user. Read more in section 4.7 Collections and section 7.4 Operations on Stacks, Collections and Multiframe Sequences .
Compression	 The image has sometime in the past undergone some kind of lossy image-compression. It does not mean that the image currently is compressed. Read more in section 7.25 Compressed images .
Cropped image	 The image is cropped. Read more in section 7.3.4 Cropping .
Edge enhancement	 The image is edge enhanced. Read more in section 7.3.6 Edge Enhancement .
Flipped horizontally	 The image is flipped horizontally. Read more in section 7.3.7 Flipping and Rotating Images .
Flipped vertically	 The image is flipped vertically. Read more in section 7.3.7 Flipping and Rotating Images .
Key image	 The image is a key image. Key images are used to mark important or interesting images. Read more in section 7.5 Key Images .
Mammography CAD	 The examination includes a Mammography Structured Report with CAD results. Note that the symbol only indicates the existence of a Structured Report in the examination, not that the current image has CAD findings. Read more about Mammography CAD in section 7.23 Mammography CAD .
Multiframe	 The image is a multiframe. A multiframe is a single file containing several images (frames). Film sequences are an example of multiframe images, but there are other types as well. Read more in section 7.4 Operations on Stacks, Collections and Multiframe Sequences and section 7.4.6 Using Cine loops .

Overlay plugin running	 An overlay plug-in is visible. An overlay plug-in is a special purpose-built overlay that is not fully integrated into the IDS5 workstation, but installed separately. Read more in section 7.10 Overlay plug-ins .
Presentation state available	 The image contains presentation states which can be applied. A DICOM presentation state describes how the image should be presented in terms of e.g. annotations, orientations and window/level. Read more in section 7.24 DICOM Presentation States .
Presentation state not fully displayed	 A presentation state has been applied but contains unsupported information which is not displayed. Read more in section 7.24 DICOM Presentation States .
Rejected Analyzed	 The image is rejected and has been analyzed. Read more in section 10.3 Reject analysis .
Rejected New	 The image is rejected and has not been analyzed. Read more in section 10.3 Reject analysis .
Rotated 90°	 The image is rotated 90° clockwise. Read more in section 7.3.7 Flipping and Rotating Images .
Rotated 180°	 The image is rotated 180°. Read more in section 7.3.7 Flipping and Rotating Images .
Rotated 270°	 The image is rotated 270° clockwise, which is the same as 90° counter-clockwise. Read more in section 7.3.7 Flipping and Rotating Images .
Slab mode running	 The stack is shown in slab mode. In slab mode several slices are grouped together into slabs, resulting in a smaller stack of images compiled from the original stack. Read more in section 7.16 Slab view .
Slab mode warning	 The stack is unsuitable for slab viewing (it might not be parallel, contain jumps in location etc.) Read more in section 7.16 Slab view .
Stack	 The series is a stack. A stack is a number of images taken on the same occasion by the

same modality. Read more in [section 7.4 Operations on Stacks, Collections and Multiframe Sequences](#).

Synchronized images



The image views are synchronized with each other. When an operation, such as scrolling in a stack, is applied to one of the synchronized images, the same operation will be applied to all images that are synchronized with it. Read more in [section 7.6 Synchronizing Images](#).

Warning - not all images hung



This symbol indicates that there are images in the current base examination that are not displayed in the current presentation. The symbol is displayed next to the presentation selector. Read more in [section 6.4 Applying a presentation \(manual or DDP\)](#).

Warning - not all monitors displayed



This symbol indicates that there are more miniature monitors (virtual screens) in the presentation than physical monitors available for your workstation. The symbol is displayed next to the presentation selector. Read more in [section 6.4 Applying a presentation \(manual or DDP\)](#).

Virtual 3D



The stack can be viewed in virtual 3D. Virtual 3D stacks are created using the Sectra 3D Package and allows you to view the image set in virtual 3D. Read more in [section 7.14 Viewing Virtual 3D Images](#).

7.3 Operations on Images

IDS5 offers a wide range of image operations in order to give as much support as possible while viewing images. This section describes how to use these operations.

Ordinary operations such as zoom or pan are provided as so called interaction modes. A view is set to a certain interaction mode and the functionality of that mode is always available directly on the left mouse button. Other functionality such as edge enhancement and the magnifying glass are operations that must be explicitly triggered from menu options etc.

7.3.1 Interaction modes

The interaction mode of an image view describes which operation to perform when the mouse is actively used. There are three interaction modes valid on images: **Pan**, **Zoom** and **Window/Level**. These can be set explicitly from the Image Window

pop-up menu. The left mouse button is always tied to the current interaction mode. This means that the user decides what actions left mouse button operations should correspond to.

The user can change interaction mode on-the-fly by using any of the three modifier keys CTRL, SHIFT or ALT. When the modifier keys are released, the old interaction mode will be active again.

Tip: Interaction modes can be applied to several images simultaneously. E.g. zooming in several images or browsing several stacks. Read more in [section 7.6 Synchronizing Images](#).

It is possible to map a certain mouse button combination to a specific interaction mode. Read more on how to [configure interaction modes](#).

If you are using a default active command, please see [Default active command](#) for restrictions regarding interaction modes in combination with default active commands.

► To use interaction modes

1. Display the Image Window pop-up menu and select the **Zoom** interaction mode.
2. Hold down the left mouse button in the image view.
3. Move the mouse back and forth.

If zooming works properly, you zoom in and out in the image dynamically.

4. Make sure that the image is zoomed in.
5. Select the **Pan** interaction mode from the Image Window pop-up menu.
6. Hold down the left mouse button in the image view.
7. Move the image back and forth and to the left and to the right.
8. Press the Ctrl key while moving the mouse.

Zoom will be activated and the image will be zoomed.

The other interaction modes work the same way - hold down the left mouse button and move the mouse.

Zoom	Zooms the image continuously. The ALT modifier key activates the Pan interaction mode. The image might appear slightly fuzzy when performing zoom. This is normal. Release the mouse-button and the image will automatically regain its focus.
Pan	Pans the image. Note that an image can only be panned if it is zoomed in. The CTRL modifier key activates the Zoom interaction mode. The SHIFT modifier key restricts panning horizontally or vertically.
Window/Level	Adjusts the grayscale of the image. Note that this can only be done for grayscale images. The CTRL modifier key adjusts the sensitivity of the interaction mode. The SHIFT modifier key

restricts Windowing/Leveling to affect only the window width or the window center. The Window/Level functionality can be configured.

Note: To use the **Zoom** interaction mode, your computer must have a graphics card that supports hardware acceleration. If continuous zoom does not work satisfactory on your workstation, it is very likely that either the graphics card does not support hardware acceleration, or hardware acceleration in IDS5 is disabled. Please read [section 12.4 Configuring Image Display Properties](#) for further information regarding hardware acceleration.

Note: There are two additional interaction modes, **Browse** and **Rotate** that are only valid on stacks or collections. Read more in [section 7.4 Operations on Stacks, Collections and Multiframe Sequences](#).

7.3.2 Zooming

You can use "zoom in" to obtain a close-up view of a part of the image, or "zoom out" to see more of the image at a reduced magnification.

► To zoom an image

1. Zoom by using the **Zoom** interaction mode.
2. From the Image window pop-up menu, select **Zoom** and click on the zoom-operation you want to perform. The following operations are supported:

Zoom in	Magnifies the image view by a factor of two. Note that there is a limit to how much an image can be magnified depending on the available memory in the workstation.
Zoom out	Reduces the image view by a factor of two.
Zoom to fit window	Zooms the image to fit the screen (or screen part) exactly.
True size (image)	Zooms the image so that 1 cm on the screen corresponds to 1 cm in the image. Note that both the image and the screen must be calibrated before you can use this command. Please read section 7.13 Image Calibration for more information on how to calibrate an image.
Pixel to pixel (1:1)	Zooms the image so that there is a one-to-one relationship between pixels on the screen and pixels in the image file. This is to ensure that you will see exactly what is in the image file, and all the information in the image will be seen.
Quadrant zoom	A single command that zooms the image by a factor of 1.8 and moves focus to the image quadrants. Focus is moved to the next quadrant by activating the same command again. When

all quadrants have been displayed, the image zooms out again .

Toggle Zoom

A zoom command that toggles between a magnification of the image view by a factor of two, and the zoom factor the image view had prior to executing the command. The toggle zoom command also has the ability to zoom in a specific direction for images that have a defined laterality, e.g. mammograms. The command will zoom towards the left side for images with "L" laterality, to the right for images with "R" laterality and to the center for other images.

An alternative to zoom with the Zoom interaction mode is to use the **Zoom control**. The **Zoom control** is displayed by clicking the **Show zoom control** command. A small window is displayed. Move the mouse pointer on top of this window. Click and hold the left mouse-button while moving the mouse up and down. The mouse movements will then continuously zoom as described above. The **Show zoom control** command is not available in the menus by default. However, it can be added, as described in [section 12.2 Configuring Menus and Toolbars](#).

7.3.3 The Magnifying Glass

The magnifying glass is at hand when you quickly want to enlarge small parts of an image. Once you have activated the magnifying glass you move it over an image, the magnified part of the image will be displayed in the glass. The figure below displays a snapshot of the magnifying glass.



► To use the magnifying glass

1. From the Image window pop-up menu, click **Magnifying glass** or use the short-cut CTRL+g. The glass will appear with its center above the point you chose to activate it.

- Move the glass over the current image by holding down the left mouse-button and dragging the glass over the image.
- Increase the magnification in the glass by rotating the mouse-wheel forward while the mouse pointer is over the glass.
- Decrease the magnification in the glass by rotating the mouse-wheel backward while the mouse pointer is over the glass.
- Resize the glass by taking hold of the bottom right corner (the small white square) of the glass. Drag the corner to increase/decrease the size of the glass and release the button when you are done.
- To freely adjust the grayscale is done in the same way as in the Image window. When you are done the grayscale setting in the glass will be applied to the image under glass.
- When you are done, right click on the glass to hide it.

Tip: Magnifying glass operations can be applied to several images simultaneously. Read more in [section 7.6 Synchronizing Images](#).

7.3.4 Cropping

Cropping means that you cut out some part of the image. This can be useful, if for example you want to remove white borders in image plate images. Cropping can be performed either manually or automatically. When an image is cropped it is

marked with the **cropped image symbol** .

Note: No image data is deleted when an image is being cropped. By performing a reset you can view the entire image again.

It is also possible to toggle between cropped states.

► To perform manual cropping

1. From the Image Window pop-up menu, click **Crop** and **Crop image**.
2. Move the mouse-pointer to the upper left corner of the part that is to be cut out, and click the left mouse-button.

A rectangle will appear, defining the area that is to be cut out.
3. Move the mouse-pointer to the lower right corner of the part that is to be cut out, and click the left mouse-button.
4. If needed, adjust the rectangle by dragging its edges or corners while holding down the left mouse-button.
5. Double-click on the image or press RETURN, to crop the image. If you decide not to crop the image, press DELETE to remove the rectangle without cropping the image.

▶ **To perform automatic cropping**

1. From the Image Window pop-up menu, click **Crop** and **Automatic crop**.

The image will be automatically cropped. Automatic cropping is based on calculating variations in the image statistics. There are two different Autocrop implementations: an old based on standard deviation calculation, and a new based on line/edge detection. Which one is currently active is controlled by a configuration parameter. The default setting is to use the new algorithm for CR images, and the old one for all other modalities.

The result of this operation depends very much on what the image looks like. If you try to crop an image that has no "natural" boundaries, the cropping operation will fail. Note that statistical parameters must be configured for each modality by the system administrator.

▶ **To reset cropping**

1. From the Image Window pop-up menu, click **Crop** and **Reset cropping**.

The cropping operation will be reset and the whole image will be visible again.

▶ **To toggle between crop states**

1. From the Image Window pop-up menu, click **Crop** and **Toggle crop state**.

The image toggles between the current state and previous crop state.

7.3.5 Setting Grayscale

One very useful operation is adjustment of the image grayscale. This can be done in different ways:

- Choosing settings in the image, with settings originating from the modality.
- Using the function keys F1 - F12 to select predefined grayscale windows for a certain type of modality. It is also possible to add predefined grayscale windows for each modality.
- Repeatedly applying the same step command to step through the predefined grayscale windows.
- Using interaction modes and freely adjusting the grayscale using the mouse.

▶ **To select settings originating from the modality**

1. From the Image window pop-up menu, click **Window/Level** and select the desired grayscale setting from the modality. The name of these grayscale settings depends on how they have been set up by the system administrator.

▶ **To use predefined grayscale settings**

1. From the Image Window pop-up menu, click **Window/Level** and select the desired predefined grayscale setting.

All predefined settings are associated with a function key (F1 - F12) that can be used as a shortcut. The shortcut key is specified to the right of each command in the pop-up menu.

► **To step through predefined grayscale settings**

These commands are preferably activated by using shortcut keys. The shortcut keys are specified to the right of each command in the pop-up menu. Please read [chapter 12 Setting Options](#) for a description of how to define and review existing shortcuts.

1. On the Image Window pop-up menu, point to **Window/Level** and then click one of the following repeatedly:
 - **Step W/L** to begin stepping through the defined grayscale settings as defined on the function keys. The command returns to the original grayscale settings when all defined settings have been applied one by one.
 - **Step all W/L** to begin stepping through all the defined grayscale settings defined both in the displayed DICOM image itself and as defined on the function keys. The command returns to the original grayscale settings when all defined settings have been applied one by one.

Note: To be able to use the **Step all W/L** command you must have the **Mammography** license.

► **To define grayscale settings**

1. From the Image Window pop-up menu, click **Window/Level** and **Define...**
The **Define Window Level Settings** dialog appears.
2. In the **Modality** drop-down list, select for which modality the new setting will be valid.
3. In the **Name** field, type in a name for the new setting.
4. In the **Width** and **Center** fields, type in the width and center of the grayscale window.

Note: The **Width** and **Center** fields in the dialog contain preset values from the current image.

5. Click the **Add** button.

The new setting is added to the Image Window pop-up menu, and a function key (F1 - F12) is also automatically assigned to the new setting. To remove a predefined setting, select it in the **Define Window Level Settings** dialog, and click the **Remove** button.

► **To freely adjust the grayscale**

1. Default for free grayscale adjustment in the Image Window is to use the Window/Level interaction mode on the middle mouse button. However, this can be configured differently (Read more in [section 12.10 Configuring Interaction Modes](#)). Moving the mouse while holding the middle mouse-button

down (Window/Level interaction mode expected), will interactively change the center, and width of the grayscale window. Pressing CTRL while moving the mouse will make the grayscale settings change more slowly, thereby making it easier to make small grayscale adjustments. Pressing SHIFT while moving the mouse makes it possible to only change either width or center depending on which direction the mouse is moved first. Mouse movement directions can be configured using the Options dialog. Please read [section 12.5 Configuring Image Tools Properties](#) for more information. The default setting is the following:

Moving to the left	The image gets brighter.
Moving to the right	The image gets darker.
Moving up	The contrast increases.
Moving down	The contrast decreases.


- An alternative to use the Window/Level interaction mode is to use the W/L control. The W/L control is displayed by the **Show W/L control** command. A small window is displayed. Move the mouse pointer to this window. Click and hold the left mouse button. Moving the mouse will then correspond to changing the grayscale as described in the first list item above. The **Show W/L control** command is not available by default in the menus. However, it can be added, as described in [section 12.2 Configuring Menus and Toolbars](#).

► **To invert the image**

- From the Image window pop-up menu, select **Window/Level** and select **Invert**.
The current image is inverted.

Note: Some images contain information about which part of the image is regarded as the background. If Invert is applied to such an image, only the foreground is inverted. This significantly enhances the readability of an inverted image.

7.3.6 Edge Enhancement

You can easily enhance the edges in an image by applying the advanced edge enhancement filter provided by IDS5. Edge enhancement can for example be used to improve visualization of small blood vessels in the lungs. Images with edge enhancement are always marked with the **edge enhancement symbol** .

The level of edge enhancement can be configured to achieve stronger or weaker edge enhancement effect, as described in [section 12.5 Configuring Image Tools Properties](#).

Note: If [statistics measurements](#) are performed on an image that has been edge enhanced, the statistics result will be based on the processed image data and not on the original image data. The result will most likely differ from the result obtained if the statistics measurement were done on the unprocessed image.

► **To perform edge enhancement**

1. From the Image Window pop-up menu, select **Edge enhance**, or use the short-cut CTRL+e.

The current image is edge enhanced. The edge enhancement symbol is displayed in the upper right corner of the image, and the pop-up menu option Edge enhance is tick marked.

► **To undo edge enhancement on an image**

1. From the Image Window pop-up menu, unselect the tick marked **Edge enhance**, or use the short-cut CTRL+e.

7.3.7 Flipping and Rotating Images

You can easily change the orientation of images. This can be useful if the image has been incorrectly read into the PACS. When an image is rotated or flipped, it is marked with one of the orientation image symbols (see below).

► **To change the orientation of an image**

1. Place the mouse-pointer above the image whose orientation you want to change.
2. From the Image Window pop-up menu, select **Orientation** and click on the operation you want to perform. The following operations are available:



Flip horizontal — Flips the image horizontally, along the vertical axis.



Flip vertical — Flips the image vertically, along the horizontal axis.



Rotate 90° — Rotates the image clockwise a quarter-turn.



Rotate 180° — Rotates the image a half-turn.



Rotate 270° — Rotates the image clockwise a three quarter-turn.

7.3.8 Default Image Settings

If an image state has been altered in some way, such as by a change of grayscale settings, or a change of orientation, the new state can be made the default setting for the image.

▶ **To set the default state**

1. From the Image Window pop-up menu, click **Save as default**.

The new state is immediately shown in the Matrix window thumbnails and everywhere in the Image Windows where the image is currently shown.

▶ **To perform an image reset**

If you have made changes to an image and want to return to the default state you can reset the image.

1. From the Image Window pop-up menu, click **Reset image**.

All image settings that you have changed will be reset to the images default settings. Only settings such as grayscale, orientations, cropping, etc are restored. Annotations and measurements will not be reset.

7.4 Operations on Stacks, Collections and Multiframe Sequences

This section describes how to use functions that are specific to stacks and collections.

Note: The operations described in this section are valid for both stacks and collections. Try to think of the word "stack" as "stack or collection".

Ordinary operations such as zoom or pan are provided as so called interaction modes. A view is set to a certain interaction mode and the functionality of that mode is always available directly on the left mouse button. Other functionality such as edge enhancement and the magnifying glass are operations that must be explicitly triggered from menu options etc.

7.4.1 Interaction modes

The interaction mode of an image view describes which operation to perform when the mouse is actively used. There are five interaction modes valid on stacks: **Pan**, **Zoom**, **Window/Level**, **Browse** and **Rotate**. These can be set explicitly from the Image Window pop-up menu. The left mouse button is always tied to the current interaction mode. This means that the user decides to what actions left mouse button operations should correspond to.

The user can change interaction mode on-the-fly by using any of the three modifier keys CTRL, SHIFT or ALT. When the modifier keys are released, the old interaction mode will be active again.

Tip: Interaction modes can be applied to several images simultaneously. E.g. zooming in several images or browsing several stacks. Read more in [section 7.6 Synchronizing Images](#).

It is possible to map a certain mouse button combination to a specific interaction mode. Information on mouse configuration is available in [section 12.10 Configuring Interaction Modes](#).

If you are using a default active command, please see [Default active command](#) for restrictions regarding interaction modes in combination with default active commands.

► **To use interaction modes**

1. Display the Image Window pop-up menu and select the **Zoom** interaction mode.
2. Hold down the left mouse button in the image view.
3. Move the mouse back and forth.

If zooming works properly, you zoom in and out in the image dynamically.

4. Make sure that the image is zoomed in.
5. Select the **Pan** interaction mode from the Image Window pop-up menu.
6. Hold down the left mouse button in the image view.
7. Move the image back and forth and to the left and to the right.
8. Press the Ctrl key while moving the mouse.

Zoom will be activated and the image will be zoomed.

The other interaction modes works the same way - hold down the left mouse button and move the mouse.

Zoom Zooms the image continuously. The ALT modifier key activates the Pan interaction mode. The image might appear slightly fuzzy when performing zoom. This is normal. Release the mouse-button and the image will automatically regain its focus.

Pan Pans the image. Note that an image can only be panned if it is zoomed in. The CTRL modifier key activates the Zoom interaction mode. The SHIFT modifier key restricts panning horizontally or vertically.

Window/Level Adjusts the grayscale of the image. Note that this can only be done for grayscale images. The CTRL modifier key adjusts the sensitivity of the interaction mode. The SHIFT modifier key restricts Windowing/Levelling to affect only the window width

or the window center. The Window/Level functionality can be configured.

- Browse** Browsing a stack. Note that this interaction mode can only be used for image stacks. The ALT modifier key activates the Pan interaction mode. The CTRL modifier key activates the Zoom interaction mode.
- Rotate** Rotates a virtual 3D stack. Note that this interaction mode can only be used for virtual3D stacks. The ALT modifier key activates the Pan interaction mode. The CTRL modifier key activates the Zoom interaction mode.

Note: To use the Zoom interaction mode, your computer must have a graphics card that supports hardware acceleration. If continuous zoom does not work satisfactorily on your workstation, it is very likely that either the graphics card does not support hardware acceleration, or hardware acceleration in IDS5 is disabled. Please read [section 12.4 Configuring Image Display Properties](#) for further information regarding hardware acceleration.

7.4.2 Viewing a Stack

Images in a stack can either be viewed one at a time, or you can tile the screen to show several images simultaneously. Partitioning the screen is useful if you want to compare images in a stack.

► To tile a stack

1. From the Image Window pop-up menu, click **Stack tile** and select the tile mode you want to use.

The following tile modes are available:

- **1x1** (CTRL+1), only one image from the stack is shown. It is possible to configure that a mouse double-click combination in any image in any tile will display that particular image in 1x1 mode. Read more in [section 12.5 Configuring Image Tools Properties](#).
 - **2x2** Moving down (CTRL+2), **3x3** (CTRL+3) and **4x4** (CTRL+4). Here four, nine or sixteen images respectively are shown from the stack. Images are placed so that they fill the new partition from left to right. Example: If you have a stack containing four images, A, B, C and D, and you view them using a 2x2 tile. The upper left image will be A, the upper right B, the lower left C and the lower right will display image D.
2. The image you select the command on will be shown in the upper left corner of the new tile. For example, if you have a 3x3 tile mode and select the 2x2 tile

mode on the middle image, the tile mode will change to 2x2 with that image in the upper left corner of the new tile.

Tip: By using the short-cuts with CTRL+2 to 4 you can browse through a stack in larger steps than by using the mouse-wheel. For example, if you have a stack in a 4x4 tile mode and want to browse the stack fifteen images at a time, position the mouse over the lower right image while repeatedly pressing CTRL+4. In this way the image in the lower right corner will move to the upper left corner each time you select the command.

7.4.3 Moving Around in a Stack

The Image Window provides a variety of methods to move around in a stack (i.e. displaying different parts of the stack).

► **To move up and down in a stack**

1. Use the **Browse** interaction mode to move around in the stack. The **Browse** interaction mode can be mapped to a certain mouse button combination (See [section 12.10 Configuring Interaction Modes](#)) or it can be explicitly selected from the Image Window pop-up menu to respond to left mouse button actions. Browse is mapped to the mouse button combination Left + Middle by default.
2. From the Image Window pop-up menu, click **Stack navigation** and select **Page up/Page down** or **Line up/Line down** to move up or down in the stack. When you are viewing a single image from the stack, e.g 1x1 tile mode, the Line and Page commands have the same effect. When using 2x2 tile mode, for example, **Page Up** means moving backwards in the stack four images (i.e. a whole page) while **Line Up** means moving backwards two images (i.e. one line).
3. While the mouse pointer is over the stack, roll the mouse-wheel forward or backward. One step of the mouse wheel correspond to **Line up** or **Line down**.
4. A Scroll control is also available. You display the scroll control by selecting the **Show scroll control** command. A small window is displayed. Move the mouse-pointer to this window. Click and hold the left mouse-button. Mouse movements up and down will then correspond to stack scrolling as in step 3 above. The **Show scroll control** command is not available in the menus by default. However, it can be added, as described in [section 12.2 Configuring Menus and Toolbars](#).

► **To move to the first or last image in a stack**

1. From the Image Window pop-up menu, click **Stack navigation** and select **First** to move to the first image in the stack, or select **Last** to move to the last image in a stack.

7.4.4 Using Scanograms

A scanogram is used to show which part of the stack (or parts if in tile mode) is currently being viewed. If a scanogram is associated with a stack, the scanogram is shown in the lower right corner of the image.

There can be more than one scanogram associated with a stack. You can move between multiple scanograms by clicking on the + and - signs in the upper left corner of the scanogram.

► **To move in a stack using a scanogram**

1. Click on the slice you want to display.

The selected slice highlighted and the Image window is updated with the selected slice.

► **To hide/show scanograms**

1. From the Image window pop-up menu, click **Scanogram**, and then select **Hide scanogram** to hide the scanogram, or select **Show scanogram** to make the scanogram visible.

7.4.5 Using the Localizer

The Localizer is used for navigating between several stacks in a study, with for instance axial, sagittal and coronal slices. While one stack is being viewed, it is possible to activate Localizers in the other corresponding views. If the mouse pointer is moved to one of the other views, a Localizer for that stack is shown instead.

If the currently viewed stack is shown in tiled mode, several Localizer lines are shown in the corresponding views. To determine which line belongs to which tile, make sure that tile zooming is configured to execute on a mouse double-click combination and use that combination on the tile to enlarge it. The Localizer line for this tile in the corresponding views will be displayed.

Another feature of the Localizer is the crosshair marker in the viewed stack. The position of the crosshair is marked by a tick on the corresponding Localizer lines. Note that there may be many positions in the currently viewed stack image that correspond to the same tick on a Localizer line. In technical terms, the crosshair and Localizer line tick are not necessarily the exact same point in 3D space. However, the tick is always the correct projection of the crosshair.

If the crosshair marker is configured to be used for stack navigation, corresponding views will update with the closest projection as the crosshair marker changes position. Note that if a corresponding view is in tile mode, the closest projection is displayed in the top left tile. The crosshair marker is moved by dragging it with the left mouse button or by double click in the view while holding down the SHIFT button. Please read [chapter 12 Setting Options](#) to find out how to configure the crosshair marker.

► **To hide/show Localizer**

1. From the Image Window menu, click **View** and **Localizer**. Select **Hide localizer** to hide the Localizer, or **Show localizer** to make it visible. **Show simple localizer** displays the Localizer lines without the crosshair. It is possible to configure the default state of the Localizer, please read [chapter 12 Setting Options](#).

7.4.6 Using Cine loops

A cine loop is a way to view all images in a stack. The images are shown after each other like an animation. There are two kinds of cine loops, the **cine loop** which restarts from the beginning of the stack when the end is reached and the **bounce loop** that plays backwards through the stack again when it reaches the end of the stack.

▶ **To start a cine loop/bounce**

1. From the Image Window pop-up menu, click **Cine loop** or **Cine bounce**.

▶ **To stop a cine loop**

1. From the Image Window pop-up menu, click **Stop cine**.

Important: If you are running a cine loop on a collection of series, and you have already run a cine loop on one of the series before collecting them, you should be aware that the cine loop range will be set to the beginning and end of the series where the cine loop was last run. Looping over the created collection will thus only display this original series. You can however adjust the loop range to include the complete collection using the cine tool. Please refer to [section 7.4.7 Using the Cine Tool](#) for more information on setting the loop range.













7.4.7 Using the Cine Tool

The Cine Tool is an extension of the cine loop. If your IDS5 is equipped with the Cine Tool, it will appear as in the snapshot below, when you start a cine loop or bounce loop.



The cine functions from top to bottom, left to right:

ECG/Frame indicator	ECG/Frame indicator shows the currently displayed frame, selected range and the ECG curve. The control is also used to select the frame to display. If no ECG information is available a slider for positioning and range selection is shown instead.
Thumb wheel	▮▮▮▮ This control is used for accurate positioning in the sequence. Drag the thumb wheel to the right to move forward, or to the left to move backward in the sequence.
Frame	Frame shows the currently displayed frame number together with the total number of frames in the sequence.

Speed control	This slider controls the speed and direction of the animation. The default setting is the true frame rate, if the image contains such information.
Speed	Shows the current frame rate (FPS=frames per second). If the true frame rate is below the selected frame rate, a warning symbol is shown  . The true speed is normally lower than the selected frame rate while loading the images in the first run.
Minimize	 This button minimizes the cine control. Reset the cine control to its original size by clicking on the minimized cine control.
Quit	 This button stops the cine loop and closes the cine control.
First/Last	 These buttons jump to the first/last image in the sequence
Step backward/step forward	 These buttons steps one frame backward/forward in the sequence.
Start range/Stop range	 These buttons selects the animation range. Start range selects the displayed frame as the first frame in the interval and Stop range selects the displayed frame as the last frame in the interval.
Play/Pause	 These buttons plays or holds the sequence respectively.
Reset	 This button resets the speed to the default value.
Hide image information	 This button hides the image information when playing the sequence. A higher frame rate can be achieved when the image information is hidden.
Loop/Bounce	 This button toggles the animation mode. Loop runs the sequence in the same direction, Bounce runs the sequence forward and backward alternately.
ECG on / ECG off	 This button shows/hides the ECG. A higher frame rate can be achieved when the ECG is turned off.
Position	 This button moves the control from the bottom to the top of the image and vice versa, allowing you to position it where it does not cover interesting areas of the image.

The animation is stopped in the same way as a normal cine animation, by clicking **Stop cine** in the pop-up menu.

Using Jog/shuttle to control Cine Tool

The multiframe support package supports integration with Contour Design ShuttlePro jog/shuttle multimedia control. Using the buttons on the control is a fast way to access needed functionality in the cine tool e.g. when viewing coronary angiography studies.


More information about the jog/shuttle is available in the PDF-document **Jog shuttle label kit** on the [Sectra User Web](#)¹. Follow the link "Sectra Tools for Cardiovascular Imaging" at [Sectra User Web](#)².

7.5 Key Images

Images can be marked as key images to indicate that they are important or interesting. You can set the key image tag both from the Matrix window (see also [section 6.2.2 Key Images](#)) and from the Image Window.

► To set/reset the key image tag for an image

1. From the Image Window pop-up menu, click **Key images** and select **Set** to set the key image tag, or **Reset** to remove the tag. If you are viewing a stack or collection, you can use the **Set all** and **Reset all** commands to set or reset the key image tag.

If the key image tag is set, the key image symbol will be visible in the upper right corner of the image .

It is possible to navigate quickly between different key images in an examination. There are several different commands that can be used to move between key images in an examination, and key images in a stack or collection.

► To move between key images in an examination

1. From the Image Window pop-up menu, click **Key images** and **Fetch left** to move to the previous key image in an examination, i.e. the closest key image to the left of the current image in the matrix. Select **Fetch right** to move to the closest key image to the right of the current image in the matrix.

► To move between key images in a stack or collection

1. From the Image Window pop-up menu, click **Key images** and select one of the following commands:

Go to previous Moves up in the stack to the closest key image slice.

Go to next Moves down in the stack to the closest key image slice.

¹ <http://userweb.sectra.se>

² <http://userweb.sectra.se>

Cine to previous	Starts a cine animation to the closest upper key image slice.
Cine to next	Starts a cine animation to the closest lower key image slice.

7.6 Synchronizing Images

Images and stacks can be synchronized. This means that when an operation is applied on one of the synchronized images, the same operation will be applied to all images that are synchronized. Images that are synchronized are always marked with the

synchronized image symbol .

Operations that are handled by all synchronized images are:

- grayscale
- zoom
- magnifying glass
- invert
- flip
- rotate

Note: Synchronizing the magnifying glass is optional, and is configurable per examination type. Read more in [section 12.11 Configuring exam type specific settings](#).

Operations that are handled by all synchronized stacks are:

- page up/down
- line up/down
- cine loop/bounce
- stop cine
- stack tile mode
- reset image

Three different modes can be used when traversing synchronized stacks. Which traverse mode is used depends on how much information a stack contains and what we have configured:

Slice number When a synchronized stack is traversed, all other synchronized stacks will be traversed with the relative change in slice number.

Table position	When a synchronized stack is traversed, all other synchronized stacks will, if possible, be traversed with the relative change in table position.
3D	When a synchronized stack is traversed, all other synchronized stacks will, if possible, be traversed with the relative three dimensional change in the patient's body.

▶ **To synchronize images or stacks**

1. From the Image Window pop-up menu, click **Synchronize**.

The synchronization symbol will be shown in the upper right corner of the image.

▶ **To release synchronization of image or stacks**

1. From the Image Window pop-up menu, click **Release sync**.

The synchronization symbol will disappear, indicating that this image is no longer synchronized.

▶ **To group synchronize images or stacks**

Group synchronization is meant to make image synchronization more efficient as the selection of images to be synchronized can be prepared in a DDP or a manual hanging. The images that belong to the same synchronization group are then automatically synchronized when the Group synchronize command is applied.

1. From the Image Window pop-up menu, click **Group Synchronize**.

Group synchronization is applied to all images and stacks in the current hanging that are members of synchronization groups. This membership is indicated in the image information by the text "Sync group:" followed by the number of the synchronization group. The **Group Synchronize** command is a toggle command which means that the same command is used for both synchronization and release. The synchronization state of the image is indicated by the presence of the synchronization symbol in the upper right corner of the image.

Tip: Group synchronization can be enabled automatically when an examination is opened if synchronization groups have been defined (either in a DDP or manually). Please read more in [section 12.11 Configuring exam type specific settings](#). For details on how to define synchronization groups in a DDP please refer to [section 6.5.6 Specifying Image Synchronization Groups](#).

▶ **To specify synchronization groups for image or stack**

1. From the Image Window pop-up menu, click **Sync group**.
2. Select a synchronization group from the submenu.

The image information for the current image is updated to reflect the new synchronization group settings. These new settings may be stored as a manual

presentation. For more information on how to create a manual presentation, please read [section 6.6 Creating a Manual Presentation](#).

Note: When you save a manual presentation you should save it for system use, otherwise the presentation may not be available to the radiologist that viewing the case. It is also possible to change an image synchronization group while it is synchronized but the behavior may be unexpected since synchronization information will become inconsistent. We therefore recommend that you 'release' synchronization before changing to another synchronization group and then reapply group synchronization after the modifications have been made.

Tip: Synchronization groups can be defined in a DDP. Please read more in [section 6.5.6 Specifying Image Synchronization Groups](#).

7.6.1 Mirrored synchronization

Note: To be able to use mirrored synchronization you must have the **Mammography** license.

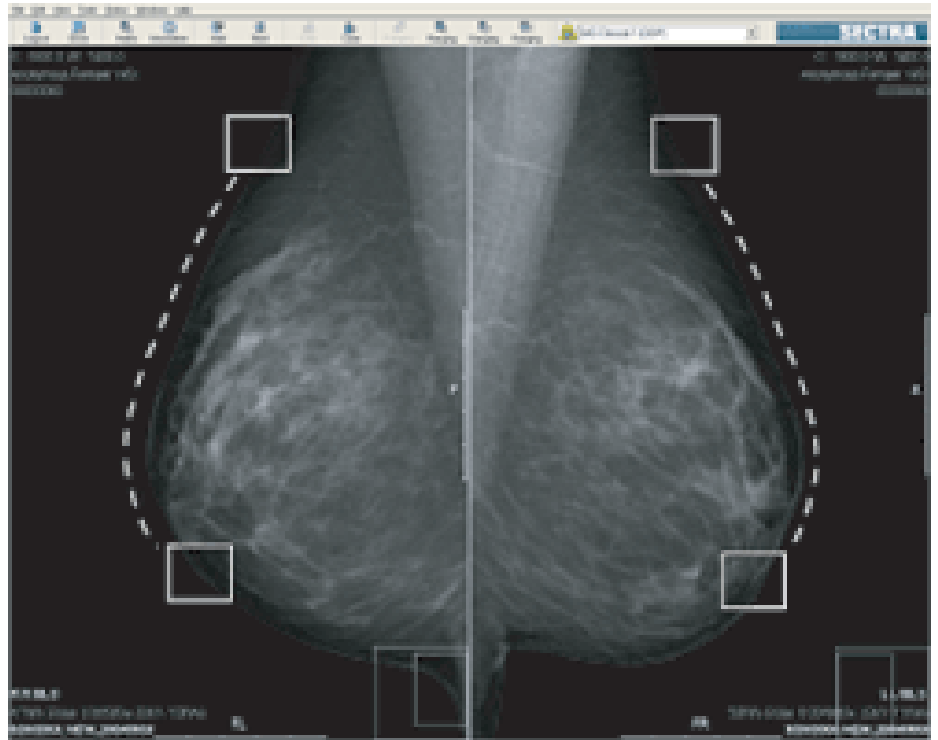
In certain reviewing situations it is useful to be able to mirror panning and magnifying glass operations in synchronized images. This is true for e.g. reading mammography cases when breast images are hung chest wall to chest wall. Mirrored synchronization allows you to compare corresponding areas in the left and right breast with the magnifying glass or by panning the zoomed images.

Note: Synchronizing the magnifying glass is optional, and is configurable per examination type. Read more in [section 12.11 Configuring exam type specific settings](#).

► Sample workflow

1. Configure mirrored synchronization for examination types of your choice, e.g. mammography examinations, as described in [section 12.11 Configuring exam type specific settings](#).
2. Open a mammography examination and hang two breast images chest wall to chest wall.
3. From the Image window pop-up menu, select **Synchronize** in both images.
4. Zoom in and pan in the right breast image.

Both images are zoomed. The panning is mirrored in the left breast image, as compared to the right breast image, and allows you to compare corresponding areas in the two breasts.



Mirrored synchronization

7.7 Adjust images individually

When working with images in a collection, each image operation normally affects all images simultaneously. If **Adjust images individually** is selected, subsequent image operations will affect one image at the time.

When **Adjust images individually** is deactivated, subsequent image operations will again affect all images simultaneously, and possibly override previous individual adjustments.

If the collection consists of stacks, **Adjust images individually** will adjust the different stacks individually in relation to each other. This means that image operations are always applied simultaneously to all images in a stack.

The  symbol indicates that **Adjust images individually** is selected.

7.8 Performing Measurements

You can easily perform various kinds of measurements in an image, i.e. measure the distance between two points, or determine the area of some part of an image. You can also measure grayscale statistics in an image.

Note: In certain IDS5 products the use of measurements is restricted. To create measurements, the "Image view" module is needed (the available modules are found by selecting **About...** in the **Help** menu of the Information Window). The measurements created are temporary and will disappear at logout unless the "Measurements" module is available. If your workstation has the Nuclear Medicine option, two additional measurement methods are displayed in the Image window pop-up menu: **NM Statistics area** and **NM Statistics circle**. In addition to the statistics Standard deviation and Mean value, the NM statistics also provide max. pixel value, min. pixel value, total pixel sum, number of pixels and (for **NM Statistics area**) area.

Note: In ultrasound images, it is only possible to undertake distance and area measurements within the tissue or color flow region.

Note: If there is no calibration information in the image, a message stating "Not calibrated" will appear on the screen when trying to perform measurements. IDS5 marks images that have been manually calibrated with an annotation reading "Image manually calibrated". Please read more about how to calibrate an image in [section 7.13 Image Calibration](#).

Warning: You should always verify that the current image calibration is valid when reading measurements, since the readouts of the measurements are dynamically calculated based on the current calibration. Note that IDS5 does not automatically compensate for the image magnification factor when the image is calibrated. Please read more in [section 7.8.1 About calibration and pixel spacing](#).

Warning: Distances and areas should normally not be measured in virtual 3D stacks, as these show 3D views with perspective, i.e. if two objects are the same size in reality but one appears in front of the other in the Virtual 3D view, the back one will look smaller. Virtual 3D stacks may be calibrated manually to enable measurements, but please keep the perspective in mind when measuring.

► To measure distances

1. From the Image Window pop-up menu, click **Measure**, and select **Distance**.
2. Click in the image to select the starting point for the distance to be measured.
A line will be drawn from the starting point to the mouse pointer.
3. Click in the image to set the end point for the distance to be measured.
4. If necessary, adjust the line by clicking and dragging its start or end point while holding down the left mouse button.

The distance between the start and end point will be displayed.

▶ **To measure angles**

1. From the Image Window pop-up menu, click **Measure**, and select **Angle**.
2. Click four times to put two lines on the screen. Alternatively hold down the CTRL-key and click three times in the image to create the desired angle by respectively placing the end of the first leg, the base, and the end of the second leg.

The angle will be calculated between the extensions of the two lines.

▶ **To measure areas**

1. From the Image Window pop-up menu, click **Measure**, and select **Area**.
2. Mark the area you want to measure by defining the corners of a polygon. Each time you click the left mouse button, a new corner is added to the polygon.
3. Quit defining the area by double-clicking.

The area of the specified polygon will be displayed.

▶ **To measure statistics in a circular area**

1. From the Image Window pop-up menu, click **Measure**, and select **Statistics circle**.
2. Click in the image to specify the center of the circle to be drawn.
3. Drag the mouse to define the radius of the circle and click the left mouse-button when a suitable radius is reached.

The grayscale mean value and deviation within the circular area will be displayed.

▶ **To measure statistics in a circular area and display a histogram of the grayscale values**

1. From the Image Window pop-up menu, click **Measure**, and select **Histogram circle**.
2. Click in the image to specify the center of the circle to be drawn.
3. Drag the mouse to define the radius of the circle and click the left mouse button when a suitable radius is reached.

The grayscale mean value and deviation, total number of pixels and the histogram of the grayscale values within the circular area will be displayed.

▶ **To measure statistics in an area defined by a polygon**

1. From the Image Window pop-up menu, click **Measure**, and select **Statistics area**.
2. Mark the area you want to measure by defining the corners of a polygon. Each time you click the left mouse button, a new corner will be added to the polygon.
3. Quit defining the area by double-clicking.

The grayscale mean value and deviation in the polygon will be displayed.

► **To measure statistics in an area defined by a polygon and display a histogram of the grayscale values**

1. From the Image Window pop-up menu, click **Measure**, and select **Histogram area**.
2. Mark the area you want to measure by defining the corners of a polygon. Each time you click the left mouse button, a new corner will be added to the polygon.
3. Quit defining the area by double-clicking.

The grayscale mean value and deviation, total number of pixels and the histogram of the grayscale values in the polygon will be displayed.

► **To measure a single pixel value**

1. From the Image Window View menu, select **Show pixel value**.

A display next to the mouse pointer will continuously show the grayscale value of the single pixel it is pointing at. This display can be turned off by selecting Show pixel value again.

► **To move or remove a measurement**

1. Measurements in the image can always be moved to another place. To move a measurements, select it by clicking on it and dragging it to the desired position using the mouse.
2. To remove a measurement from an image, select it by clicking on it and press **Delete**.

Note: There are some restrictions on removing measurements as [described below](#).

The grayscale statistics and pixel value measurements are calculated using the actual pixel values. If these measurements are performed on an image that has been edge enhanced or on an image from slab mode, the statistics result is based on the processed image data and not on the original image data. The result will most likely differ from the result obtained if the statistics measurement is done on the unprocessed image. In the same way the results will vary for an image with different zoom level, differently sized image views, for monitors with different resolutions and for printed images.

Measurements shown in gray cannot be changed or deleted. This gray coloring is used when only temporary measurements are available. Existing permanent measurements are therefore displayed in gray, as are archived measurements. Permanent measurements that exist when an image is archived, will also be archived. Measurements created on an IDS5/dx.net or an IDS5/qa.net cannot be changed on an IDS5/cl.net . On an IDS5/cl.net workstation, you must also have the necessary permission to save the measurements, i.e. creating permanent measurements. These privileges can be configured by a system administrator. If you can create permanent measurements, you can also change and save existing permanent measurements.

7.8.1 About calibration and pixel spacing

In order to perform measurements in an image, the physical size of a pixel must be known. This is commonly referred to as an image's *pixel spacing*. The pixel spacing is either available in the image's DICOM header or via manual calibration. An image may be tagged with several DICOM tags providing pixel spacings based on different assumptions.

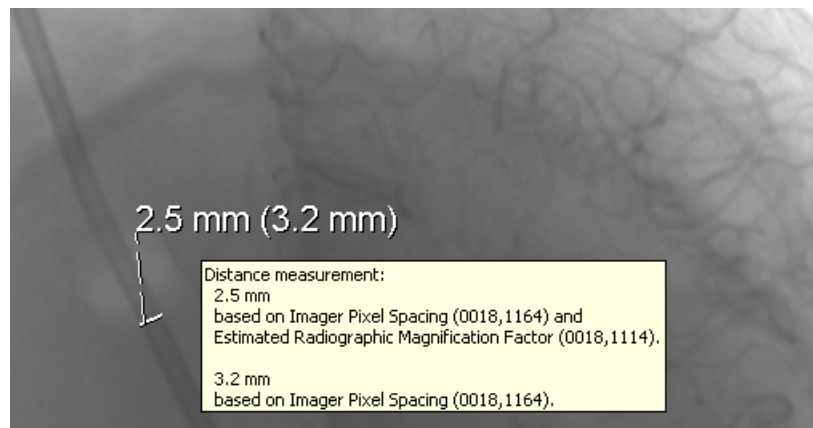
In particular in projection radiography, a measurement may return different results depending on the pixel spacing it is calculated from. When this is the case, as in the example below, two measurement results will be displayed where the first result is an estimate of the in-patient measure and the second result is the measurement on the image plate.

IDS5 selects what measurement(s) to display according to the ranking order of priority recommended in the DICOM standard documentation. This is described in the table [below](#).

► To find out the base for a measurement

1. Place the pointer over a measurement.

A tooltip will appear describing how the measurement was calculated. The tooltip disappears when the pointer is moved away from the measurement.



Measurements calculated from pixel spacings generated from manual calibration or the DICOM tags Pixel Spacing (0028, 0030) and Estimated Radiographic Magnification Factor (0018, 1114) will reflect estimates of in-patient measures, while measurements calculated from pixel spacings generated from the DICOM tag Imager Pixel Spacing (0018, 1164) will reflect measures on the image plate.

Measurements are performed based on the information provided in the image. This means that they can never be more accurate than what the actual image allows, which in turn will influence both the number of displayed decimals and grayscale statistics. The number of decimals that is displayed is also dependent on how the image is zoomed and what the actual pixel size is. For example if the pixel size is 0.15 mm and the image is zoomed 1:1 it will result in one decimal being shown when measuring distance, but two decimals when measuring area, since $0.15 * 0.15 = 0.0225$. If the image is zoomed in, the precision will increase and the measurements can be displayed with more decimals. Angle measurements are always presented with one decimal digit. Grayscale statistics measurements are presented without decimals.

Ranking order of priority between different pixel spacings:

Rank	Pixel spacing information available	Pixel spacing information used for measurement
1.	Manual calibration	Manual calibration. The image will be marked with an annotation reading "Image manually calibrated".
2.	Ultrasound DICOM tags (0018, 6011/6014/602C/602E)	Ultrasound DICOM tags (0018, 6011/6014/602C/602E)
3.	Pixel Spacing (0028, 0030) Imager Pixel Spacing (0018, 1164) Estimated Radiographic Magnification Factor (0018, 1114)	Two results are displayed: 1. Pixel Spacing (0028, 0030) 2. Imager Pixel Spacing (0018, 1164) If the results are identical, only one is displayed.
4.	Imager Pixel Spacing (0018, 1164) Estimated Radiographic Magnification Factor (0018, 1114)	Two results are displayed: 1. Quotient of Imager Pixel Spacing (0018, 1164) and Estimated Radiographic Magnification Factor (0018, 1114) 2. Imager Pixel Spacing (0018, 1164) If the results are identical, only one is displayed.
5.	Pixel Spacing (0028, 0030)	Pixel Spacing (0028, 0030)
6.	Imager Pixel Spacing (0018, 1164)	Imager Pixel Spacing (0018, 1164)
7.	No calibration information available	A message reading "Not calibrated" is shown when you try to perform a measurement.

7.9 Putting Annotations in an Image

Annotations (graphics or text) can be used to mark or comment interesting parts of an image. There are two kinds of text annotations. Text written with the **Text** command can easily be deleted or hidden. Text written with the **Text mark** command, on the other side, is more difficult to delete, and cannot be hidden. When an examination is archived, text annotations can no longer be altered or removed.

The idea behind these alternatives is that text written with the **Text** command should be used for ordinary comments, while text written with the **Text mark** command should be used for very important text, such as side markings, which should always be visible.

Unlike the side markings that display the image orientation, annotations can be used as absolute indicators for the image orientation. Although the side markings display the orientation information from the DICOM image, there is no guarantee

that this information is correct. Instead, annotations should be used in order to indicate true image orientation and position.

Note: In certain IDS5 products the usage of annotations is restricted. To create annotations, the "Image view" module is needed (the available modules are found by selecting **About...** in the **Help** menu of the Information window). Annotations created on an IDS5/dx.net or an IDS5/qa.net cannot be changed on an IDS5/cl.net .

Note: The created annotations are temporary and will disappear at logout, unless the "Annotations" module is available. On an IDS5/cl.net workstation, you must have the necessary privileges to be able to save annotations. Privileges can be configured by a system administrator. For patient safety reasons, the **Text** and **Text mark** annotations are not available as temporary annotations. If you can create permanent annotations, you can also change and save existing permanent annotations.

Annotations shown in gray cannot be changed or deleted. This gray coloring is used when only temporary annotations are available. Existing permanent annotations are therefore displayed in gray, as are archived annotations. Permanent annotations that exist when an image is archived, will also be archived.

It is also possible to view DICOM overlays in the images. Note that only DICOM overlays that are stored in the image's pixel data is supported.

► **To create a text annotation**

1. From the Image Window pop-up menu, click **Annotate**, and select **Text** or **Text mark** (see description above for an explanation of the differences between these two commands).
2. Click in the image at the position where you wish to place the text.
3. Type in the text.

The text will be displayed as you write. If you want to edit an existing text, click on the text that you want to modify and make the necessary modifications. To move the annotation to a different position, click on the text once. The text will be surrounded by a broken rectangle. Move the mouse-pointer to the broken rectangle and press the left mouse-button. The text will now be surrounded by a solid rectangle. While holding the left mouse-button down, drag the annotation to the desired new position.

► **To create a predefined annotation**

1. For information on how to create or modify a predefined annotation, please read [section 12.5 Configuring Image Tools Properties](#).

► **To use predefined annotations**

1. From the Image window pop-up menu, click **Annotate**, and select **Text** or **Text mark** (see description above for an explanation of the difference between these two commands).
2. Click in the image at the position where you wish to place the text.
3. Scroll the mouse-wheel to select a predefined annotation

The predefined annotation will be displayed by updating the contents of the edit text rectangle. This function may also be used to erase text quickly by selecting the empty text choice which is available as one of the predefined texts.

4. Type in additional text (if necessary).

► **To remove a text annotation**

1. Click on the text you want to remove.

The text annotation will be surrounded by a broken rectangle.

2. Click on the broken rectangle.

The text annotation will be surrounded by a solid rectangle.

3. If the text you want to remove was created with the Text command, press DELETE. If the text you want to remove was created with the Text mark command, press SHIFT+CTRL+DELETE.

Note: It is not possible to remove text marks for examinations that have been archived.

► **To create a line annotation:**

1. From the Image window pop-up menu, click **Annotate**, and select **Line**.

2. Click in the image to define the starting point for the line.

A line will be drawn from the starting point to the mouse-pointer.

3. Click in the image to define the end point for the line.

4. If necessary, adjust the line by clicking and dragging its start or end point with the left mouse-button.

If you want to delete a line annotation, click on the line and press DELETE.

► **To create a polyline annotation**

1. From the Image window pop-up menu, click **Annotate**, and select **Polyline**.

2. Click in the image to define the starting point for the first line.

3. Click in the image again to define a corner and the starting point for the next line.

4. When the last line has been drawn, double-click to define its endpoint.

5. You can move the lines and corners by clicking and dragging them to new positions.

If you want to delete a polyline annotation, click on the annotation and press DELETE.

▶ **To create a circle annotation**

1. From the Image window pop-up menu, click **Annotate**, and select **Circle**.
2. Click in the image to define the center point for the circle.
3. Move the mouse-pointer to adjust the circle radius. Click on the left mouse-button when you are ready.
4. The circle position and radius can be changed by clicking and dragging the center point and circle.

If you want to delete a circle annotation, click on the annotation and press DELETE.

▶ **To create an ellipse annotation**

1. From the Image window pop-up menu, click **Annotate**, and select **Ellipse**.
2. Click in the image to define the center point for the ellipse.
3. Move the mouse pointer to adjust the size of the ellipse. Click on the left mouse-button when you are ready.
4. The ellipse position and radius can be changed by clicking and dragging the center point or corner points of the ellipse.

If you want to delete an ellipse annotation, click on the annotation and press DELETE.

▶ **To create a point annotation**

1. From the Image window pop-up menu, click **Annotate**, and select **Point**.
2. Click in the image to define where the point shall be placed.

If you want to delete a point annotation, click the annotation and press DELETE.


▶ **To show/hide DICOM overlays**

1. From the Image window pop-up menu, click **Annotate**, and select **Show DICOM overlays (white)** to show DICOM overlays in white color or select **Show DICOM overlays (black)** to show overlays in black.

To hide the overlays, select **Hide DICOM overlays**.

7.10 Overlay plug-ins

Overlay plug-ins are special purpose-built overlays that are not fully integrated into the IDS5 workstation, but installed separately. When such an overlay is visible, the

image is marked with the following symbol: .

► To show/hide overlay plug-ins

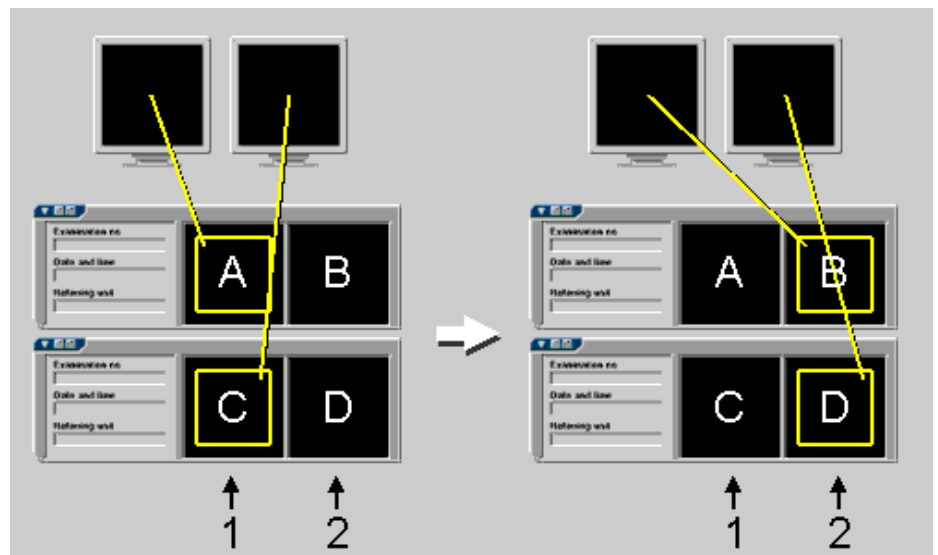
1. From the Image window pop-up menu, click **Overlay plugins**, and select **Show overlay plugins** to show or hide the installed overlay plug-ins. A checkmark next to the menu item indicates when the overlays are visible.

7.11 Navigating among Images

From each Image window you can easily browse through the images belonging to a patient without leaving the window. From the **View**-menu, select **Move up**, **Move down**, **Move left** or **Move right**. The latter two commands have alternatives **Move left (monitor)** and **Move right (monitor)**. Please see below for more information. By using these commands you can choose to display images positioned to the left, right, above or below the currently displayed images. The position of each image (or stack of images) always refers to the position the images have in the matrix, i.e. the layout in the Matrix window.

The example in the figure below illustrates the relationship between the **Move Right** command and the position the images have in the matrix.

Suppose that there are two examinations in the request being processed. These are positioned in the matrix with the new examination above the previous examination. Both examinations have two images showing frontal (1), and lateral (2) views of the body part being examined. The new frontal view (image A) is viewed on the left screen, and the previous frontal view (image C) is viewed on the right screen. By issuing the **Move Right** command the frontal views will switch to lateral views instead. The new lateral view (image B) will appear on the left screen, and the previous lateral view (image D) will appear on the right screen.



Moving to the right in the matrix from an Image window.

The **Move left** and **Move right** navigation commands apply to all screens. The other move commands (up/down/left (monitor)/right (monitor)) apply only to the current screen.

It is also possible to display images from the same series type as the current image, from a newer or prior examination. This is done by clicking with the right mouse-button in the image and selecting **Fetch newer/prior** in the pop-up menu. The **Fetch newer/prior** commands only affect the current series.

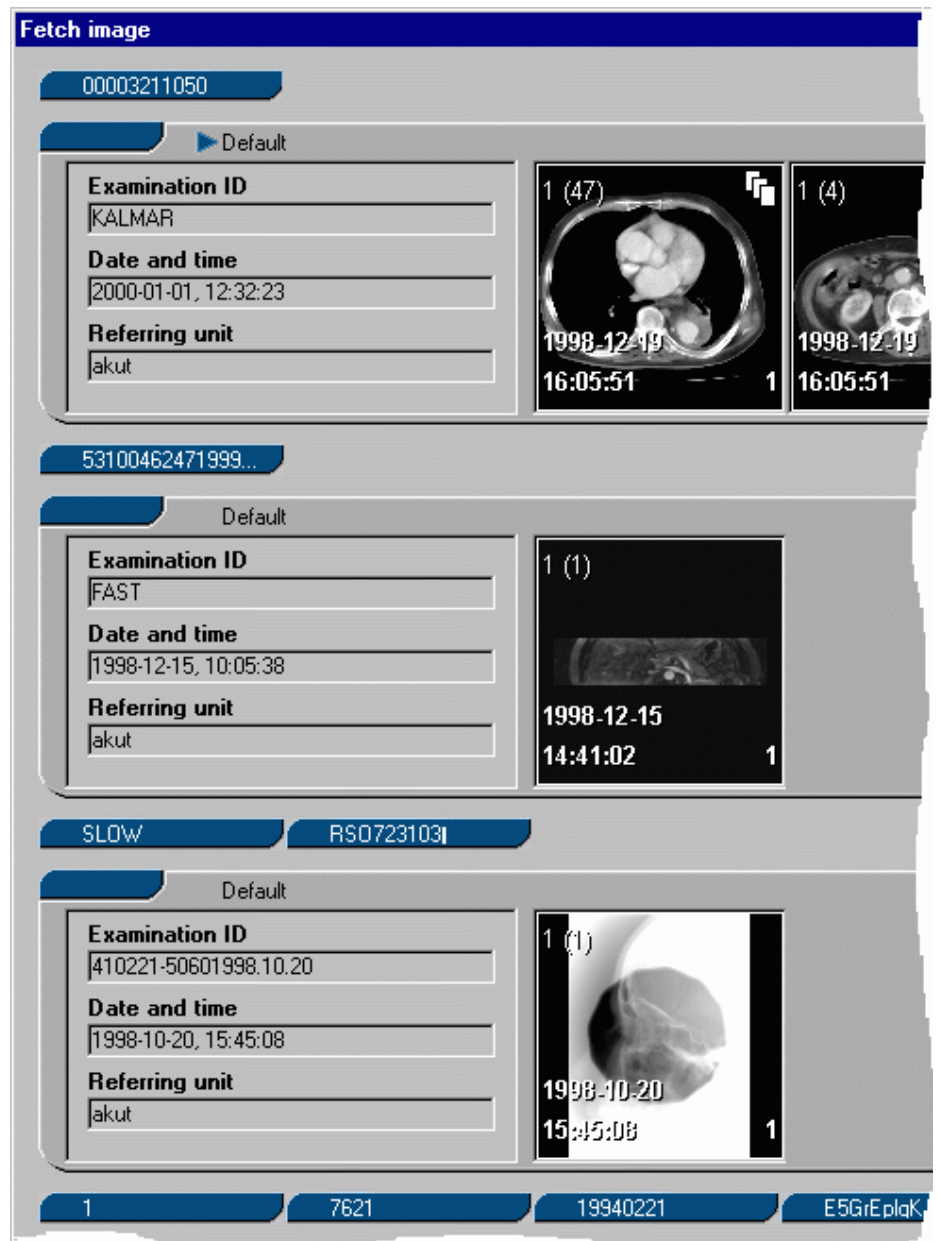
Note: **Fetch newer** and/or **Fetch prior** commands may be inactive (i.e. shown in gray and impossible to select) if there are no newer or prior images with the same series type as the current image.

To move between images in different cases, use the **Previous/Next case** commands that are available on the **View** menu. If, for example, you select **Next case**, the images for the next matching examination in the worklist will be displayed.

Note: If examination wrapping is used, the series icons may be wrapped onto several rows within each examination. However all series icons within a single examination should be regarded as located on the same matrix row, even though they may be wrapped onto several physical rows. Thus the **Move up** and **Move down** commands will select the corresponding image in the previous and next examination respectively - not the image on the previous or next row of series icons within the same examination.

7.12 Fetching Images

It is possible to fetch an image from the Matrix window directly. This is an easy way of hanging any image shown in the Matrix window in the current position in the Image window. From the Image window pop-up menu, click **Fetch image**. (If there is no image where you try to display the pop-up menu, the **Fetch image** function will apply automatically.) The **Fetch image** dialog is presented, as shown in the snapshot below.



The **Fetch image** dialog is a view of the examinations in the Matrix window. The examinations that are expanded in the Matrix window, are expanded in the dialog, and vice versa. If examination wrapping is used, the examinations in the fetch image dialog will also be wrapped.

To fetch an image to the Image window, click the image in the dialog. To cancel the 'fetch', click the **Cancel** button at the bottom of the dialog.

7.13 Image Calibration

To be able to measure a distance in an image, the image has to be calibrated. Normally, images are calibrated by, or at the modality. If you try to measure a distance and receive a "Not calibrated!" message, the image has not been calibrated, or the calibration is wrong. In this case you will need to undertake a manual calibration.

Image calibration is a global operation that sets the same calibration on all slices in a stack (or frames in a sequence).

Warning: Image calibration should never be performed on stacks or sequences which include mixed image resolutions.

Image calibration is associated with making measurements. If measurements cannot be created, then no calibration is available. If the measurements made are temporary, so is a new calibration or calibration change. Please read [section 7.8 Performing Measurements](#) for more information on when the use of measurements is restricted.

Note: Manual calibration is not exported when an image is exported by teleradiology to a DICOM destination or when it is exported to a CD or an E-mail recipient. Please read [section 5.6 Import and export](#) for more information about exporting images. In these cases the exported image will contain the original calibration information, as received from the modality. However, measurements are exported, and the result of the exported measurements are based on the (manual) calibration that prevailed the last time the image was displayed.

Note: In ultrasound images, calibration is only possible within the tissue or color flow region.

Warning: Measurements created before an image is manually calibrated are not updated with the new calibration until they are displayed on screen. If images are exported after a manual calibration, be aware that measurements created before the calibration will not have been updated according to the new calibration if the images have not been displayed on screen.

► **To manually calibrate an image**

1. From the Image window pop-up menu, click **Calibration**, and select **Manual calibration**.
2. Determine two reference points in the image where you know the exact distance between.
3. Move the mouse-pointer to the first reference point and click the left mouse-button.
4. Move the mouse-pointer to the second reference point and click the left mouse-button.

A line will be drawn between the two reference points.

5. Type in the length of the line in millimeters, and press RETURN.

The image is now recalibrated, and all related distances and areas are recalculated automatically. A warning label will appear on the screen as a reminder that the image is now recalibrated. The label cannot be deleted unless the calibration is reset, but it can be moved to a different position.

► **To reset the calibration**

1. From the Image window pop-up menu, click **Calibration**, and select **Reset calibration**.

▶ **To copy calibration**

1. From the Image window pop-up menu or the matrix icon window pop-up menu, click **Calibration**, and select **Copy calibration**.

The current calibration of the image will be copied into a buffer that later can be used to paste the calibration into other images.

▶ **To paste a calibration**

1. From the Image window pop-up menu or the matrix icon window pop-up menu, click **Calibration**, and select **Paste calibration**.


The calibration currently in the copy buffer will be applied to the image or stack. Note that this is entirely controlled by the user, the command itself is not intelligent. The pixel size in the copied image is directly applied to the target image.

▶ **To paste a calibration to all images of an exam**

1. From the Examination Text View pop-up menu, click **Calibration**, and select **Paste calibration**.

The calibration currently in the copy buffer will be applied to all the images in the exam. Note that this is entirely controlled by the user, the command itself is not intelligent. The pixel size in the copied image is directly applied to the target images.

7.14 Viewing Virtual 3D Images

Using the Sectra 3D Clinical Application it is possible to generate a set of images for Virtual 3D viewing. The Virtual 3D icon is displayed in the image window and in the matrix window when Virtual 3D viewing is available .

When a Virtual 3D image is displayed in the image window (indicated by the icon above), the default interaction mode is Rotate. Drag the mouse while holding down the left button to rotate the 3D volume. Move the mouse sideways to rotate the volume around its vertical axis, and move the mouse away from or towards yourself to rotate the volume around its horizontal axis. Please note that a limited set of views are available, as was specified when the Virtual 3D images were generated using the Sectra 3D Clinical Application. The number of available views is shown in the Matrix window icon views and as image information in the Image view.

Virtual 3D images can be zoomed, panned, and annotated as regular images.

Warning: Distances and areas should normally not be measured in Virtual 3D images, as these show 3D views with perspective (i.e. if two objects are the same size in reality but one appears in front of the other in the Virtual 3D view, the back one will look smaller). Virtual 3D images may however be [calibrated manually](#) to enable measurements, but please keep the perspective in mind when measuring.

If the Virtual 3D image has been zoomed in and you want to pan the image, press and hold down the ALT-key and move the mouse holding down the left mouse-button (Rotate interaction mode assumed).

7.15 Image Addition

Image Addition is only available with the Nuclear Medicine option.

To superimpose two or more images, i.e. to merge an image containing radioactive position markers with an actual patient image, first group the images into a [collection](#), unless they are already a stack. Then select **Image Addition**->**Add** from the Image window pop-up menu. This will add the images, pixel by pixel. Grayscale settings are not automatically changed, which means that some manual adjustments may be required to obtain a usable image. All images in the group or stack must have the same size (in pixels).

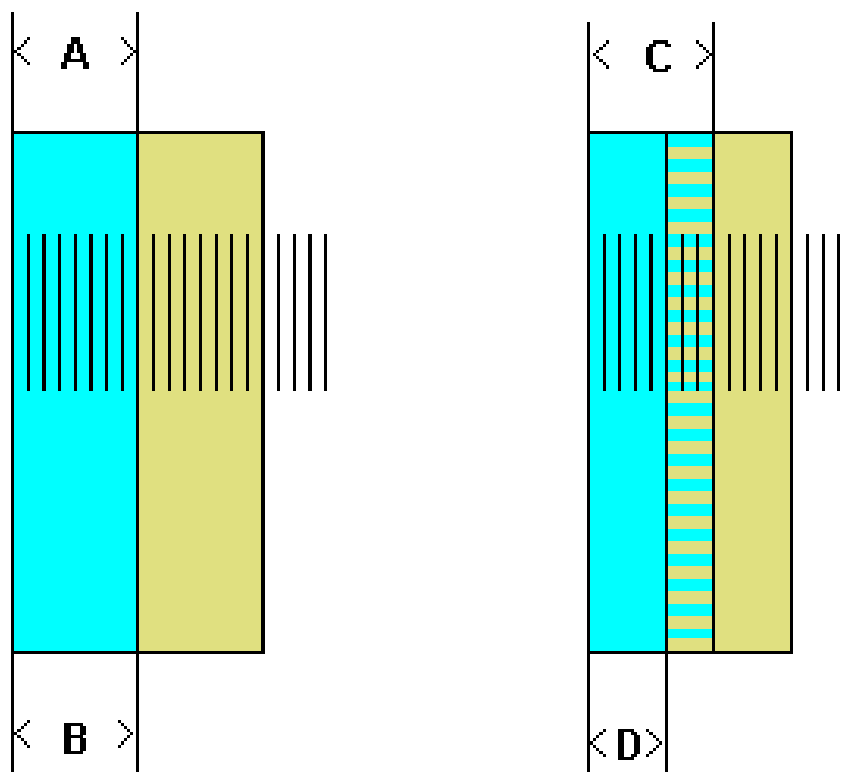
Similarly, selecting **Image Addition**->**Average** will compute the arithmetic average of all images in a stack, or a collection.

When images are added, all annotations present on any of the images are shown on the resultant image. No new annotations can be created, and any setting changes while images are merged will *not* be saved.

To turn off 'Addition', and return to normal viewing, select **Image Addition**->**None**.

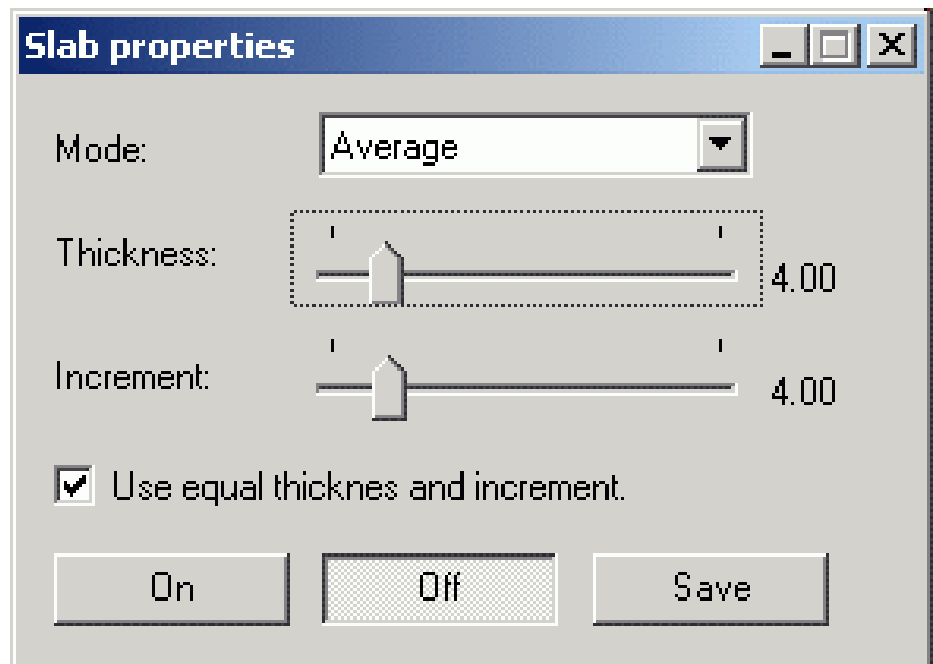
7.16 Slab view

The slab viewer contains functionality to use a current stack to recalculate a new stack, with images created from merged groups of slices from the original stack. The new stack might get a different number of images. This way a large stack can be reduced to a smaller stack directly in IDS5, or details only showing up in one slice can be made easier to detect. You can set the slab width and also the incremental step. A smaller incremental step than the slab width will result in overlapping slabs, while having the same incremental step, as slab width, will result in a smaller stack. A larger incremental width than slab thickness is not allowed.



The image to the left describes slabs where the thickness and increment is the same. The image to the right describes slabs where the increment is smaller than the thickness. A and C are thickness whereas B and D are increment.

To start Slab view, from the Image window pop-up menu, click **Slab mode**, and select **Slab mode**. When the slab view is started the slab control dialog is displayed, which gives you control of the slab functionality. At first the actual slab stack is not calculated to prevent unnecessary computer load. Change the properties; increment, thickness, and mode, and finally turn on slab viewing by clicking the **On** button. Click the **Save** button to create a new stack for this examination, with the slab images. No changes are done to the original stack. Also, a checkbox is available, enabling you to lock the two slider controls to each other so that they always use the same value. If the thickness and increment default values are the same, the checkbox will automatically be checkmarked.



Thickness Defines the thickness of each slab in the new stack.

Increment Defines the distance between each slab in the new stack.

Mode Defines how each slab is calculated from the original stack. The available modes are Average, MIP, MinIP.

The different modes that are available have the following functionality:

Average Computes the arithmetic average of all images in each slab.

MIP Uses Maximum Intensity Projection through the slab, i.e. use the maximal pixel value.

MinIP Uses Minimum Intensity Projection.

The stack is recalculated whenever you click the **On** button, and any of the sliders have been changed, or you select a new mode. An active Slab mode is indicated by a icon in the Image window

If the stack is in some way not suited to be viewed in this mode (it might not be parallel, contain jumps in location etc.), this will be indicated by a warning icon

To exit Slab mode, click the **Off** button, or close the control dialog by clicking the X button in the extreme upper right corner of the dialog.

The Slab view can be started automatically, using a DDP. Please read [section 6.5 Creating a DDP](#). Slab view is also a part of a presentation. If Slab view is being shown when a presentation is saved, Slab view with the same settings will be shown whenever the presentation is applied.

Only stacks where all images have the same size and format can be displayed in Slab view. Slab view recalculates the stack according to your settings, and the stack will be temporarily available until you open a new stack or close the Image window. If

you want the stack to be permanently available, click **Save** to save the stack as a Slab view stack.

In all cases the annotations from all original slices in a slab will be merged and inserted into the slab image.

7.17 MPR - Multiplanar reconstruction

MPR is only available with the MPR Package.

MPR can be used for single CT and MR image stacks or for collections of them. To read the complete MPR User's Guide, start MPR and click the **Help** button in the MPR toolbox.

▶ **To start MPR**

1. From the Image Window pop-up menu, select **MPR**.

7.18 3D - Volume rendering

3D is only available with the 3D Package.

3D can be used for single CT and MR image stacks or for collections of them. To read the complete 3D User's Guide, start 3D and click the **Help** button in the 3D toolbox.

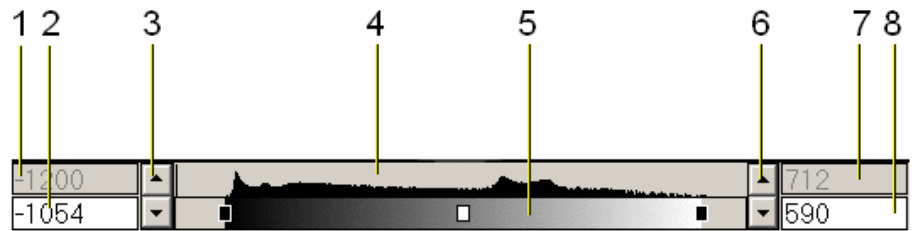
▶ **To start 3D**

1. From the Image Window pop-up menu, select **3D**.

7.19 The NM Control

The NM control is only available with the Nuclear Medicine option.

The NM control is intended for situations, such as when viewing nuclear medicine (NM) images, where you want exact control of grayscale settings, and their relation to the histogram of values in the image. The control is turned on and off by clicking **Window Level->NM Control** in the Image window pop-up menu. The control state (on or off) is saved as part of a presentation, and the control can be turned on automatically for some images using a DDP.



The NM control has the following components:

1. Lowest pixel value — This number is the lowest pixel value (after Modality LUT or rescaling) present in the image.
2. Lower grayscale limit — Any pixels with this value or lower are shown as black (or as the lowest [color palette](#) entry). New values can be entered by clicking inside the box and typing in the desired value.
3. Lower grayscale limit spin button — Clicking on the up or down arrows will increase or decrease the lower grayscale limit by one step.
4. Image histogram.
5. Grayscale or palette — Shows how the grayscale relates to the histogram. Dragging the black boxes at the ends of the scale with the mouse will change the lower or upper grayscale limits. Dragging the white box in the middle will move the entire grayscale range up or down.
6. Upper grayscale limit spin button — Similar to the lower limit spin button, but moves the upper grayscale limit.
7. Highest pixel value — This is the highest pixel value present in the image.
8. Upper grayscale limit — Any pixels with this or a higher value will be displayed as white (or as the highest [color palette](#) entry).

Clicking the right mouse-button anywhere in the NM-control, will display a menu with the following choices:

- | | |
|-----------------|--|
| Percent | Changes the display of pixel values from absolute numbers to percentages of the highest pixel values in the image. When percent is selected, the highest and lowest pixel values will be displayed as 0% and 100% (by definition), and the lower and upper grayscale values will be displayed as a percentage. |
| Absolute | Change the display of pixel values to absolute numbers. |
| 0-100% | Sets the lower grayscale limit to the lowest pixel value present in the image, and the upper grayscale limit to the highest pixel value. |
| Palette | Selects a color palette to apply to the image. |
| Close | Closes the NM control. |

7.20 Color Palettes

Color palettes are only available with the Nuclear Medicine option.

It is sometimes desirable to add artificial colors to a grayscale image, e.g. to make small differences stand out more clearly. To do this, click **Window Level->Palette** from the Image window pop-up menu, and select one of the available palettes. The palette will be applied following the grayscale settings, i.e. any pixels that would normally have displayed as black are assigned to one end of the palette scale, and any pixels that would have displayed as white are assigned to the other end of the palette scale, and pixels between these extremes are interpolated over the palette range.

The selected palette is saved along with other presentation information. For some images it is also possible to select a palette automatically, using a DDP.

For more information on how to install palettes, please refer to [System Administrator's Guide IDS5 \[1\]](#).

7.21 Clinical Applications

A Clinical Application is an application which is independent from IDS5, i.e. a medical device released and labeled separately from the IDS5. Such an application can be started from the Image window, using the image as an input. A banner containing the name of the Clinical Application will be displayed in the upper part of the Image window to indicate that a Clinical Application is running. The range of available Clinical Applications vary from installation to installation. In the event of any problems related to a Clinical Application, please contact the supplier of the Clinical Application in question, directly. Clinical applications are found in the **Clinical applications** menu of the Image window pop-up menu. Most clinical applications have their own help system. For help on IDS5 Orthopedic Package, click **IDS5/ortho User's Guide...** in the Help menu of the Image window.

7.22 Mammography screening

Mammography functions are only available with the mammography module. In this section we describe the specific commands and examination statuses that are available in the mammography workflow. For a sample mammography screening workflow, please see [section 11.3 A radiologist Views a Mammography Case](#).

7.22.1 Commands and examination statuses

There are a number of functions that streamline the workflow for reading mammograms in a screening situation. There are special examination statuses, namely "1 Code", "2 Code", and "3 Code". The first is used by the first reading radiologist, the second is for double reading. The third can, for instance, be used for a final reading when the first two differ. The possible values for the mammo

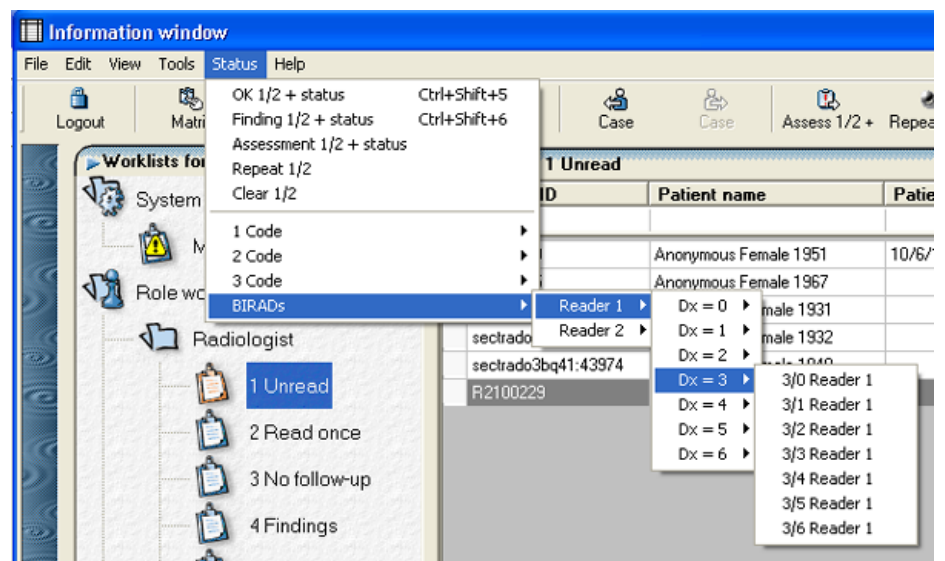
codes are: -, Technical repeat, OK, Finding, and Assessment. There are also examination fields for the names of the first and second reading radiologist.

A reading result is entered through one of the commands in the Status menu, e.g. in the Image window. There are a number of commands that automatically figures out if this is the first or second reading by looking for the first empty reading radiologist slot, they are all marked "1/2". One example is the command **OK 1/2** that sets the mammo code to OK for either "1 code" or "2 code", and sets the current user's name as either first or second reading radiologist. There are also sequence commands that combine these functions with the Next status and Next case commands. Finally, other commands are available that are connected either to only the first reading or only the second reading. These commands are marked "1" or "2", as opposed to the "1/2" commands described above. A full list of the mammography commands are given in the [Reference Manual IDS5 \[4\]](#).

In the typical mammography screening workflow these statuses are set with the dedicated keypad.

7.22.2 Using BIRADS codes in Sectra PACS

Sectra PACS supports setting result codes according to the BIRADS standard. These are codes from 0 to 6 indicating the severity of findings for each side and are used instead of the OK/Findings/Assessment codes described in [section 7.22.1 Commands and examination statuses](#). The BIRADS codes are available on the **Status** menu in any of the windows of IDS5/mx.net, see below.



The BIRADS codes can be set for Reader 1 and Reader 2

► To set status codes according to BIRADS

1. On the **Status** menu, point to **BIRADS** and current reader.
2. Point to the correct code for the right breast (Dx).
3. Click the correct code for the left breast (Sin).

The example in the image above will set code 3 on the right breast and code 0 on the left breast, for the first reader.

7.23 Mammography CAD

This section describes how to work with mammography CAD overlays.

7.23.1 Working with CAD overlays

Note: To be able to use the functionality for mammography CAD you must have the Mammography CAD license.

If mammography CAD results are available for an examination, all images in the examination will be marked with the mammography CAD symbol.



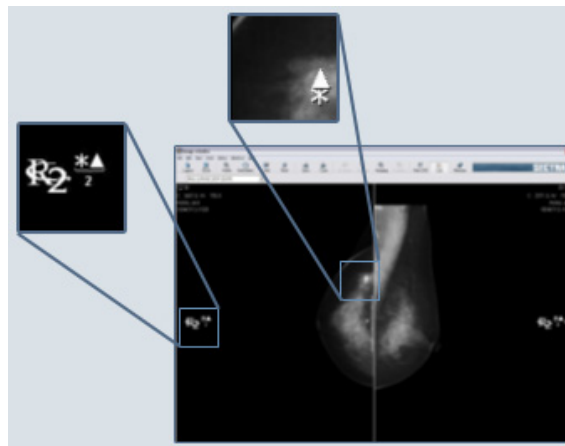
CAD results can be displayed by a DDP, see [section 6.5 Creating a DDP](#) and [section 6.5.5 Specifying Image Settings](#). CAD results can also be displayed manually.

► To manually display CAD results

1. In the Image window, click **View->Display CAD results (CTRL-SHIFT-4)**.

Any CAD markers are displayed at the default detail level. Please refer to [System Administrator's Guide IDS5 \[1\]](#) for information on how to configure the default detail level.

2. To hide the CAD results, click **View->Display CAD results** again.



CAD markers indicating findings. You can double-click a CAD marker to increase the level of detail for it.

► To step through available detail levels

1. With CAD results displayed, click **View->Next CAD presentation** in the Image window.

The next available detail level is displayed. If there are several CAD presentations for same image, this command will step through each detail level in each presentation.

Tip: Double-click an individual CAD marker to increase the level of detail for it.

Double-clicking executes other actions if the individual CAD marker is not hit. This is configured in the Options dialog.

► **To select a specific detail level to display**

1. On the image pop-up menu, click **Select CAD presentation**.

A dialog box listing all available presentations and detail levels is displayed.

2. Select the desired presentation and detail level and click **OK**.

7.23.2 About CAD overlays


When a CAD application analyzes an image set, it typically creates a DICOM Mammography CAD Structured Report with information about the type and location of any findings in the images. This report is sent to Sectra PACS that matches it to the images it was created for and creates a CAD presentation. The CAD presentation consists of overlays with markings that indicate the findings at the specified coordinates in each image. Since most findings in CAD reports are represented in several detail levels, a CAD presentation contains multiple detail levels that can be displayed when the images are reviewed.

Two kinds of overlays are used when displaying results from a Mammography CAD Structured Report: The *result overlay* displays information about the CAD manufacturer and how many findings there are. The *finding overlay* represents the individual findings as one or several outlines. Manufacturer specific symbols are used in addition to outlines at sparse detail levels. Three factors differ CAD overlays from other overlays in IDS5:

1. CAD overlays cannot be moved or deleted.
2. CAD finding overlays can be double-clicked in order to change the detail level of a specific finding.
3. CAD finding overlays has a tooltip that appears when the pointer is placed on top of the overlay. The tooltip contains information about the specific finding.

7.24 DICOM Presentation States

DICOM presentation states provide a standardized way of transferring image display settings and annotations between different systems. Settings from IDS5 are exported as DICOM presentation states when images are exported, and IDS5 can use presentation states generated by other systems. An image that contains presentation


states which can be applied is marked with the symbol .

7.24.1 Apply a presentation state

To manually apply a presentation state to an image, select **Reset to presentation state** from the image window pop-up menu. A dialog box will appear, listing all available presentation states. Highlight the desired one by clicking on it, and click **OK** to confirm.

Presentation states can also be applied automatically using a DDP. In this case, the DDP specifies a presentation state name. If there is a presentation state in the system with that name, and it can be applied to the image under scrutiny, then that specific presentation state will be used.

If, however, an applied presentation state contains unsupported information, only as much as possible of the presentation state will be applied, and this warning symbol

will appear in the image: .

7.24.2 Toggle presentation state annotations

Note: This function requires a license for the Mammography option.

Select **Toggle PS annotations** from the Image window pop-up menu to toggle between the original image and the image with the presentation state applied. This command is also available in the Image window **View** menu, affecting all images in the hanging. The configurable default presentation state in the DDP is selected if more than one presentation state is applicable.

Note: When toggling off presentation states for all images in the current hanging, presentation state information in images currently obscured by other windows, e.g. the Information window, will also be toggled off. E.g. annotations may become hidden in an image not currently visible. The user must take care when switching to such an obscured image and make sure that there isn't any image information that has been toggled off previously.

7.24.3 Import presentation state overlays


The IDS5 normally associates annotations with an image. Therefore, because DICOM presentation states associate annotations (graphics and text) with a presentation, annotations from presentation states must be treated specially by IDS5. Annotations from a presentation state are shown in gray and cannot be changed.

They can, however, be converted to “ordinary” IDS5 annotations by selecting **Import presentation state overlays** from the Image window menu.

Note: If annotations are imported, and the presentation state is subsequently re-applied, either manually or by a DDP, annotations will be duplicated. One instance will be the imported version of the annotation, and the second instance will be the one from the presentation state.

7.25 Compressed images

DICOM images can be compressed using different types of jpeg-compression or Sectra RAID compression method. If the compression algorithm is non-reversible (lossy compression), this is indicated by a DICOM attribute ((0028,2110) Lossy Image Compression). This does not mean that the image is currently compressed, only that sometime in the past it has undergone some kind of lossy

image-compression. In the Image window, this is indicated by the symbol .

8 Using the Quick Window

The following topics are included in this chapter:

- [Special Commands in the Quick Window](#)

The Quick Window is used for applying image settings (orientation, grayscale, cropping, etc) on a single image. The operations that can be performed from the Quick Window are exactly the same as in the Image window, and are described in [section 7.3 Operations on Images](#).

The normal workflow when using the Quick Window is as follows.

- ▶ **To adjust image settings using the Quick Window**

1. Double-click on the image thumbnail whose image settings you want to change in either the Information window or the Matrix window. (This works unless you have configured that the Image window should be opened for these operations.) If you are in the Matrix window you can also select **Open Quick window** from the Matrix icon pop-up menu.

The Quick window appears.

2. Make the necessary adjustment (please read [section 7.3 Operations on Images](#) for more information on how to make adjustments).
3. Click **Close** to save changes, and return to the previous window.

The matrix icons in the Matrix window, and the series thumbnails in the Information window, will be updated to show the new state of the image.

8.1 Special Commands in the Quick Window

Some commands are only available from the Quick window. These are described below.

8.1.1 Sorting stacks

Stacks and collections of images can be sorted on either table position, acquisition time, slice number, echo time, temporal position identifier or slice location.

The default sort order depends on the import parameters used when stack arrived to the PACS.

- ▶ **To sort a stack or collection**

1. Double-click on the stack or collection in the Matrix window.

The Quick Window appears.

2. From the Quick window pop-up menu, select **Sort** and then the desired sort command. There are 12 sort commands available to sort stacks and collections on any of the parameters in either ascending or descending order.

It is also possible to sort the stack using two parameters. Do this by selecting **Custom...** from the **Sort** child menu. A dialog will be opened where you may select what parameters that should be used to sort the stack.

In this dialog you may enter a primary sort criteria and a subcriteria. When the sorting is done the stack will be sorted on the primary criteria. If a group of images within the stack contain the same value for the primary parameter, these images will be sorted according to the subcriteria.

Note: If the image import has been configured to sort stacks on a certain value and not all images in the stack contain the necessary information, then the Quick Window pop-up menu might show a sort option though it actually isn't sorted.

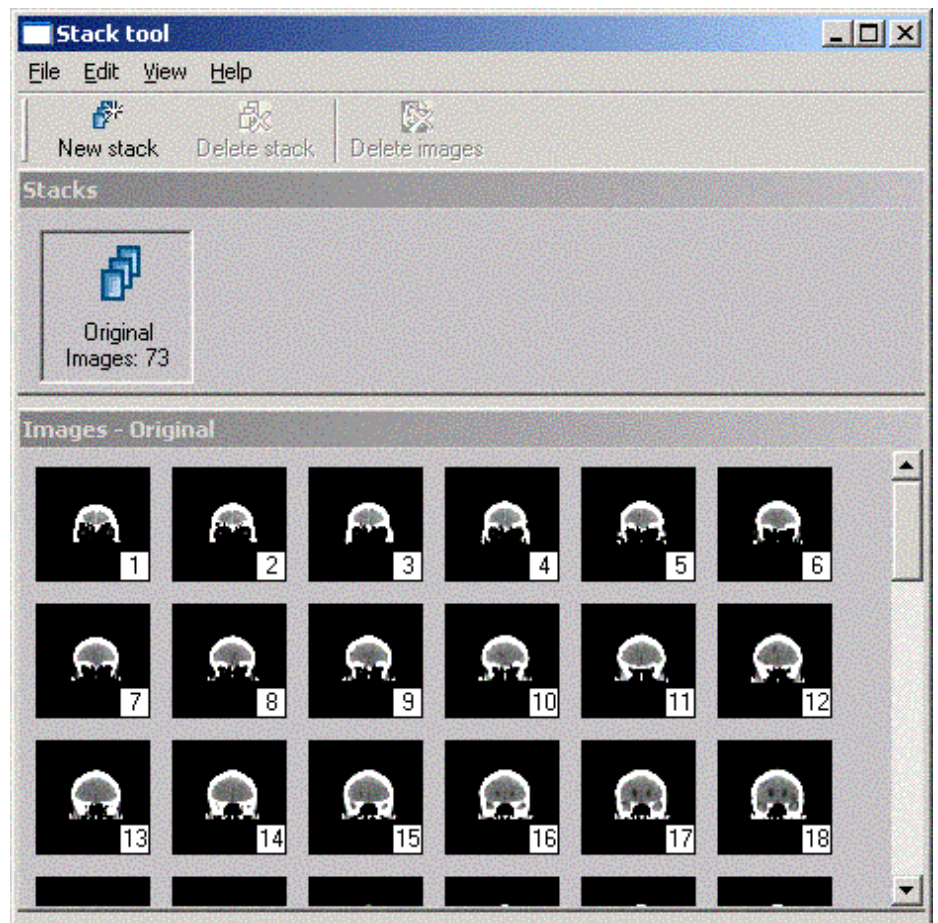
9 Using the Stack Tool

The Stack Tool is used for creating new stacks with images from an existing stack. The existing stack will be referenced as the original stack, and the new stacks that you create will be called virtual stacks. The virtual stacks will contain a subset of the images from the original stack.

► **Start the Stack Tool**

1. Select a stack that contains the images you want to use for your new stack(s).
2. If the stack is in the Matrix window, select **Stack tool** from the Matrix icon pop-up menu.
3. If the stack is in the Image window, select **Stack tool** from the Image window pop-up menu.

The Stack Tool dialog appears (see below).



The Stack Tool.

The Stack Tool consists of the following elements:

Menubar	Commands are available via drop-down menus in the menubar.
Toolbar	The configurable toolbar contains icon short-cuts to some of the commands available via the drop-down menus in the menubar.
Stacks window	This window shows buttons that correspond to the different stacks you are working with. The caption on this window is "Stacks".
Image window	This window shows the images in the currently selected stack. The caption on this window is "Images - <stackname>".

▶ **To create a new virtual stack**

1. Do one of the following:

- Select **New stack** from the **File** menu.
- Click the **New stack** icon on the toolbar.
- Press CTRL+n

A new button will be displayed in the Stacks window to indicate that a new stack has been created.

▶ **To delete a virtual stack**

1. Activate the virtual stack you want to delete by clicking the corresponding button in the Stacks window, and do one of the following:

- Select **Delete stack** from the **File** menu.
- Click the **Delete stack** icon in the toolbar.

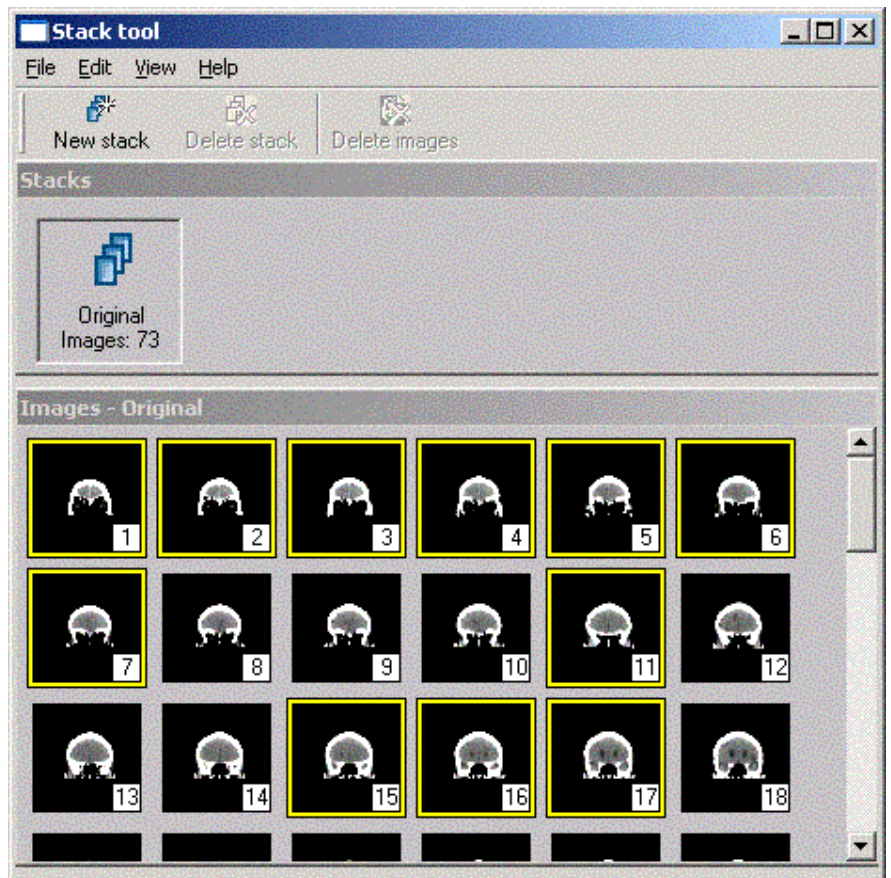
The button in the Stack window corresponding to this stack disappears.

▶ **To select images in a stack**

1. Activate the stack that contains the images you want to select, and do one of the following:

- Select the images by clicking on them and using CTRL, SHIFT and CTRL+SHIFT, just as in Microsoft Explorer.
- Select **Select** from the **Edit** menu. A dialog will appear, in which you can type the range of images you want to select (the default range is from the first image to the last), and what interval you want to use. The default interval is one, if every image in the range is to be selected, and two if every other image is to be selected, etc.
- You can select all images in the stack by selecting **Select all** from the **Edit** menu, or by pressing CTRL+a.

You can also invert a selection, by selecting **Invert selection** from the **Edit** menu, or by pressing CTRL+i. A selection in the original stack could look something like this (see below)



► **To copy images to a virtual stack**

1. Activate the source stack (either the original stack or another non-empty virtual stack) that contain the images you want to copy.
2. Select (please see [To select images in a stack](#) above) the images that you want to copy from the source stack.
3. Drag and drop the images from the source stack to the button in the Stacks window that correspond to the stack where the images are to be copied to.

Note: You cannot have multiples of the same image in a stack. Thus, if you copy an image several times, it is only copied once. Also note that you cannot drag and drop images from a stack to itself, nor to the original stack.

► **To delete images in a virtual stack**

1. Activate the virtual stack that contains the images you want to remove.
2. Select (please see [To select images in a stack](#) above) the images you want to delete.

-
3. Either select **Delete images** from the **Edit** menu, or click the **Delete images** icon in the toolbar.

Note: You can only delete images in a virtual stack, not in the original stack.

▶ **To change the image size**

You can choose between two different sizes of the images in each stack. If you have a very large stack you might want the images presented at a smaller size (default), and if you have a small stack, have them shown at a larger size.

1. Select **Small images** and **Big images** respectively, from the **View** menu.

▶ **To save the new stacks**

1. When you have finished creating your stacks, and want to save them, close the Stack Tool dialog. You will be asked if you want to save these new stacks. Click **Yes** if you want to, or click **No** if you do not want to, and click **Cancel** to close the dialog and return to the Stack Tool dialog.

10 Additional Functionality

The following topics are included in this chapter:

- [Park and restore](#)
- [Printing images](#)
- [Reject analysis](#)
- [Dimming windows](#)

This section describes additional functionality of the workstation.

10.1 Park and restore

You can use the 'park', and 'restore', feature if you are interrupted and are called away to do something else. 'Parking' causes the IDS5 to store your current settings, so that they can be restored later. Observe, however, that restoring will not bring you back to the exact same view as when you 'parked'. This is because the first hanging is always selected when the system is restored.

▶ **To park your workstation**

1. From the **Tools** menu, select **Park**.

A dialog appears, confirming that you are 'parked'. The current state is now saved, and can be restored whenever you like.


The 'parked' state is available for you on every workstation connected to the same WISE server. You can 'park' as often as you like, but the most recent park state will always be the first park state to be recalled.

Note: Only the last three 'parks' are saved when you log out. Hence it is important to remember that if you have 'parked' the workstation, say 5 times in succession without restoring, then the first two are only temporarily stored in memory.

▶ **To restore a 'parked' state**

1. From the **Tools** menu in the toolbar, select **Restore**.

10.2 Printing images

Images can be printed from both the Matrix window, and the Image windows. The **Print**  command is generally found in pop-up menus opened by clicking the right mouse-button. When the **Print** command is activated, the image or images are

selected in the Print Previewer where print-outs can be previewed and/or edited before sending them to a printer.

- Tip:** By configuring default partitionings for all modalities and always having automatic partitioning and printing enabled, the printing process at your department can be standardized and more or less automatic. There will be little or no need to open the Print Previewer, except in special cases. Read more about configuration in [System Administrator's Guide IDS5 \[1\]](#)
- Note:** Printed images, like other hard copy medical documents, should be handled within the recommended guidelines of HIPAA. In most cases hospitals and/or imaging centers should follow the same tracking and signing procedures when sending out printed images as for film and/or reports.
- Note:** If grayscale statistics or pixel value measurements have been done to the image to be printed, the remarks in [section 7.8 Performing Measurements](#) apply.

10.2.1 Printing Images from the Matrix window

From the Matrix window, you can select to print everything from single images to all the images in an entire examination.

▶ **To print an entire examination**

1. From the **Examination Text View** pop-up menu, click **Print** and select **Print** to print the entire examination (i.e. all series in an examination), or select **Print key images** to print only those images that have the key image tag set.

The images are now sent to the Print Previewer.

▶ **To print a single image or a stack**

1. From the Matrix Icon pop-up menu, click **Print** and select **Print** to print the image (or stack of images), or select the **Print key images** to print only those images in a stack or collection that has the key image tag set.

The image or images are now sent to the Print Previewer.

10.2.2 Printing Images from an Image Window

From an Image Window you can choose to print the current view, single images, or stacks and collection of images.

▶ **To print an image**

1. From the Image window pop-up menu, click **Print**. If the images you are viewing are part of a stack or a collection, you can select what kind of images you want to print.

The following options are available:

- Select **Print tile** to print only the images that are currently visible.

- Select **Print stack** to print an entire stack.
- Select **Print key images** to print all images in a stack that have the key image tag set.

The image or images will be sent to the Print Previewer.

► **To print images as they appear on the screen**

1. From the **File** menu, select **Print page**.

The images in the current view will be sent to the Print previewer.

10.2.3 Working with the Print Previewer

► **To print images**

1. From the **Windows** menu in the Matrix- and Image Window, select **Print preview**.
2. From the **View** menu select the preferred partition. Alternatively select **Enable automatic partitioning** from the **Print** menu to perform an automatic partitioning based on the modality of the first image.
3. Optionally manipulate the image(s) with any of the image window commands available in the pop-up menu you reach by right-clicking in the image part. You can **zoom**, **crop**, change the **orientation** and the **window/level** settings of the image, and make **annotations** in the image. Read more about image window commands in [section 7.3 Operations on Images](#).

Apart from the image window commands there are two more pop-up menu entries, **Clear** and **Delete**. **Clear** erases the image in this image part whereas **Delete** removes the whole image part and adjusts the positions of the following images. If there are images waiting, they will be shifted in to fill the empty parts.

Tip: From the **View** menu you can choose to display image information on three levels in the print-outs: minimum, maximum or anonymized. When the anonymized level is selected, no patient information is displayed on the printed images.

4. Select the preferred printer from the **Printer selection box**
5. Optionally configure your Windows printer by pressing the **Configure** button.
6. Start the actual printing by selecting **Print->Print**. Alternatively select **Print->Enable automatic printing** to start printing with the image area is full. The image is considered to be full in three cases:
 - Every part of the image area contains an image
 - Images from another patient were selected into the Print Previewer
 - A stack was selected into the Print Previewer. This requires some configuration, read more in [System Administrator's Guide IDS5 \[1\]](#)

▶ **To stop printing**

1. Select **Cancel printing** from the **Print** menu.

▶ **To remove images**

1. Select **Delete film** from the **Edit** menu. This removes all images from the image area and allows any images in the queue to be shifted in. Alternatively select **Delete all films** from the **Edit** menu. This removes all images including those in the queue.

10.3 Reject analysis

Note: To be able to perform reject analysis and the tasks described in this section, you must have the **Reject Analysis Package** license and the **Reject Analyze Series** permission. This permission is available on a per role basis and can be configured in WISE/tools by your system administrator.

Authorized users can select and display images that have been rejected due to poor quality or images taken for quality control purposes. The same user can also unreject images.

10.3.1 Required configuration

For information on required configuration of reject analysis, see [System Administrator's Guide IDS5 \[1\]](#).

10.3.2 Key concepts — reject analysis

Reject bin

The first key concept when working with reject analysis is the use of the reject bin instead of the recycle bin. When deleting series by placing them in the reject bin, they will disappear from that examination and patient. The series will, however, not be deleted from the system but will be available for analysis at a later time. For more information see [section 6.8 Deleting images](#).

Reject mode

The second key concept when working with reject analysis is the workstation mode reject mode. When the workstation is placed in **reject mode**, rejected series will be displayed alongside with the existing series for the originating patient and examination in all windows.

When in reject mode, it is possible to create presentations as usual using also rejected series. If a presentation containing rejected series is viewed when the workstation is not in reject mode, places where the rejected series are hung are left empty (black). There are no special "rejected presentations".

DDP matching is done as usual when working in reject mode with the difference that the default DDP will be used by default, not the best matching DDP.

► **To toggle between reject mode and normal viewing**

When selecting a reject worklist, the workstation is automatically placed in reject mode. It is also possible to manually switch to reject mode.

1. From the **View** menu, select **Show rejected series**.

The menu option is marked with a checkmark to indicate that you are in reject mode. Rejected series are now shown alongside with non-rejected series in all windows. You can perform any tasks of the workstation as usual.

2. To return to normal viewing mode, hiding all rejected series, select **Show rejected series** from the **View** menu again. When selecting another worklist that is not a reject worklist, the mode will be set to normal viewing mode automatically.

Reject status

A series can have the following reject statuses:


Non-rejected	Non-deleted series. The vast majority of all series in the system will be original. These series are visible both when the workstation is in normal viewing mode and in reject mode.
Rejected New	Non-approved rejected series. These series have been rejected (deleted) and are awaiting approval. A rejected series is only visible when the workstation is in reject mode.
Rejected Analyzed	The final status for a rejected series. These series have been rejected (deleted) and approved in the rejection analysis. A rejected series is only visible when the workstation is in reject mode.

10.3.3 Sample workflows

This section describes the main workflows related to reject analysis.



► **To perform reject analysis**

Series have previously been deleted from examinations using the reject bin. This procedure describes how to analyze these rejected series.

1. Open a reject analysis worklist in the Information window. Reject analysis worklist are identified by the worklist icon: .
2. All examinations that meet the worklist definition and have the reject status "Rejected new" are listed. As usual, all other examinations belonging to each patient are displayed as well, though they are not marked as matching examinations.

The workstation is now automatically placed in Reject mode, meaning that rejected series are displayed alongside with existing series in all windows. Any rejected series is marked with one of the reject icons.

You can now work with the rejected images in the Matrix, Quick or Images window in the ordinary way.

3. In the Matrix window, select a non-approved rejected series. Hover with the mouse pointer over the image icon to display the reject reason and comment .
4. You can also use the Quick window or Image window to inspect the series more in detail and to compare them with non-rejected series. To display the reject reason and comment in the Quick and Image window, select **Show reject information** from the pop-up menu.
5. If the reject reason is incorrect or the comment insufficient, you can change the reject reason or comment. Select **Change reject reason** from the icon, or image pop-up menu.
6. When done, you want to approve the rejection. In the Matrix window, from the icon menu, select **Reject analyze**. The reject status changes from "Rejected New" to "Rejected Analyzed" and the reject icon changes to: .

Alternatively, you can change the reject status directly from the Quick or Image window by selecting **Reject analyze** in the pop-up menu.

Tip: It is possible to give the Rejected Analyzed status for all series in an examination by selecting **Reject analyze all series** on the examination information pop-up menu.

7. Continue with the next rejected series in the examination. When done with the current examination, click **Next case** to continue to the next examination containing non-approved rejected series.

► **To change reject reason**

If a user realizes he/she set the incorrect reject reason or comment after confirming the rejection, an authorized user can edit the reject reason. This procedure describes how.

1. Make sure the workstation is in reject mode, either by selecting a reject worklist or by selecting **Show rejected series** from the **View** menu.
2. Find the patient using the search function or any worklist.
3. In the Matrix window, select **Change reject reason** from the icon pop-up menu.
4. Make your changes in the **Change reject reason** dialog and click **OK**.

► **To restore rejected images after confirmation**

If a user realizes he/she made a mistake deleting a series after confirming the rejection, an authorized user can restore the series.

1. Make sure the workstation is in reject mode, either by selecting a reject worklist or by selecting **Show rejected series** from the **View** menu.
2. Find the patient using the search function or any worklist.
3. In the Matrix window, select **Unreject series** from the icon pop-up menu.

Alternatively, you can unreject series from the Quick or Image window by selecting Unreject series from the pop-up menu.


4. In the Unreject series confirmation dialog, click **Yes**.

The reject icon disappears and the series is restored. The incorrect reject information will no longer be available.

► **Radiographer education**

Rejected series are useful for visualizing errors that can be made when operating the radiology equipment, for example motion blur, poor positioning and different kinds of artifacts.

1. From the **View** menu, select **Show rejected series**.
2. Find interesting cases. Use a reject worklist to find examinations containing rejected series. For more information, see [section 5.1.2 Creating reject worklists](#).

Rejected worklists are identified by the worklist icon: .

3. Prepare the interesting cases. You can create presentations as usual, for example comparing rejected and non-rejected series for the same patient.

Tip: Create a [teaching file](#) for the interesting cases and use image information level [Anonymized](#).

4. At the teaching occasion the workstation must be in reject mode.

10.4 Dimming windows

Note: To be able to use the automatic dim function you must have the **Mammography** license

You can dim the brightness of the Information window and/or the Matrix window. This is useful as the light from the windows may disturb the reading of images in a dark environment.

The workstation can be configured so that the windows are either dimmed when not in focus (i.e. when the mouse cursor does not point in the window) or always dimmed. The workstation can also be configured not to dim the windows. Configuration is done on a per window basis. With the default configuration the Information window is dimmed when not in focus, and the Matrix window is not dimmed. For information on the configuration, please refer to the [System Administrator's Guide IDS5 \[1\]](#).

Dimming is inactivated or re-activated by the command **Automatic dim** on a per window basis. If the workstation is configured to never dim any of the windows, this command will be unavailable.

▶ **To inactivate/re-activate dimming**

1. From the **View** menu in the Information or Matrix window, select **Automatic dim**. The check mark indicating that the automatic dim function is active disappears and the window will not be dimmed.
2. From the **View** menu in the Information or Matrix window, select **Automatic dim**. The check mark indicating that the automatic dim function is active re-appears and the window will be dimmed in accordance with the configuration made for the workstation.

11 Sample Workflows

The following topics are included in this chapter:

- [A technician Prepares a New Examination](#)
- [A radiologist Views a Case](#)
- [A radiologist Views a Mammography Case](#)

This section presents a number of sample workflows. The purpose of these samples is to give you an idea of how to perform common tasks in IDS5.

11.1 A technician Prepares a New Examination

The following describes how IDS5 is normally used by a technician (nurse), to prepare a series of images for viewing by a radiologist.

Sample workflow for preparing a new examination

1. Images will initially be held on the modality. For images to be available in IDS5 you must first import them to the PACS.
2. In the Information window, select the worklist that corresponds to the case you are preparing, by clicking on the relevant worklist in the Worklist View.

The Patient list is updated with all patients for which there are one or more examinations that match the worklist search criteria.

3. If the new examination is not present in the Examination list it may be necessary to force a new search ("refresh"). To force a refresh, click **Refresh worklist** in the **View** menu.

All views in the Information window will be updated to include the newly imported images.

4. In the Patient list, select the patient that you are currently working with.

The Examination list will be updated with all the available examinations for the selected patient.

5. In the Examination list, select the examination that was created when you imported the images.

You are now ready to inspect the newly imported images. This is done using the Matrix window.

6. From the **View** menu, click **Open matrix**.

The Matrix window will appear.

7. Check that the new examination has been given the right type label. The type label is written at the top of each examination row in the matrix. For more information on how to change the examination type, please read [section 6.2.4 Force Examination Type Matching](#).
8. In the Examination row, check that all imported images have the correct series type (the type label is written above each matrix icon). For more information on how you change the series type for an image, see [section 6.2.5 Force Series Type Matching](#).

It is now time to check the quality of the images. This is done from the Quick window.

9. Move the mouse over the first image in the newly created examination. Then, from the Matrix Icon pop-up menu, click **Open quick window**. It is also possible to double-click on the image icon.

The Quick Window will appear, displaying a full screen version of the selected image.

10. If necessary, make various adjustment on the image (this might include adjusting grayscale, performing cropping, changing the orientation etc). For more information on how you use the Quick window to make image adjustments, please read [chapter 8 Using the Quick Window](#).
11. Move to the next image in the examination by clicking **Move right** in the **View** menu.

The next image in the examination (the images to the right of the current image in the matrix), will be displayed.

12. Repeat steps 10 and 11 until you have inspected all images in the examination.
13. From the **File** menu, click **Close**.

The Quick window will be closed, and you will return to the Matrix window.

14. Check that the DDP applied by the system is satisfying. If not, you can create a manual presentation. For more information on how to create a manual presentation, please read [section 6.6 Creating a Manual Presentation](#).

Note: When you save a manual presentation, you should save it for system use. If you do not do this, the presentation may not be available to the radiologist that views the case.

11.2 A radiologist Views a Case

The following is a description of how IDS5 can be used by a radiologist to view a case. This assumes that IDS5 has been started, and that the Information window has been activated.

Sample workflow for viewing a case, or set of cases

1. In the Information window, select the worklist that contains the cases you want to view, by clicking on the relevant worklist in the Worklist view.

The Patient list will be updated with all patients for which there are one or more examinations that match the worklist search criteria.

2. Select the case you want to view by either clicking on a patient and an examination in the Patient- and Examination lists, or use the case navigation commands that are available in the **View** menu. From the **View** menu, select **Previous case** to move to the previous matching examination, or select **Next case** to move to the next matching examination.

The Series list, and the Request and Report views, are updated to show information about the selected case.

3. View the images for the selected case by clicking **Open Images** in the **View** menu.

One or more Image windows will open, showing the first hanging. Most cases have presentations that include several hangings. You can browse through all hangings from an Image window, by selecting **Next hanging** or **Previous hanging** from the **View** menu. This action will move you to the next or to the previous hanging in the presentation. These commands may be interchanged with versions that wrap around when the last or first hanging has been reached. Please read [chapter 12 Setting Options](#) for a description of how to make new commands available in IDS5.

Normally a presentation is based on a DDP that is automatically chosen by IDS5. However, if a manual presentation has been prepared by the technician, this presentation will be chosen instead of that from the DDP. You can also manually select which type of presentation to use by clicking in the **Presentation Selector** that is available in the toolbar.

4. When you have finished viewing the images, it may be necessary to change the status of the examination to indicate that it has been dealt with. To change the examination status, select the new state from the **State** menu in the Image window.
5. Move on to the next case by selecting **Next case** from the **View** menu.

The Information window will be updated with information from the next matching examination in the worklist. If you want to go back to a previous case, select **Previous case** from the **View** menu.

11.3 A radiologist Views a Mammography Case

This is a description of how IDS5 can be used by a radiologist to view mammography cases in a screening situation. Parts of the workflow are available only with the mammography module. The workflow assumes that IDS5 has been started, that the Information window has been activated and that the dedicated keypad is used.

Sample workflow for viewing a mammography case

1. Using the Information window, select the worklist that contains the cases you want to view, by clicking on the relevant worklist in the Worklist View, e.g. Unread.

The Patient list is updated with all patients for which there are one or more examinations that match the worklist search criteria; e.g. all unread cases that are to be reviewed.

2. Select the first case in the Patient list, and double-click on it to open the images.

One or more Image windows will open, showing the first hanging. Most cases have presentations that include several hangings. The first hanging is often an overview of all the images. Go either to the next hanging using the **Next hanging** button on the key pad, or to previous hanging using the **Previous hanging** button.

3. Click the **Zoom** button to see a magnified image of the image. The zoom function magnifies the image approximately 2 times and will pan the image to upper right or upper left corner, depending on laterality of the image. Click the **Zoom** button again, and again, to see the other quadrants. The 5th time you click the **Zoom** button, will return the image to its initial state.
4. Click the **Win/Lev** button to switch between predefined window level settings.
5. When you have finished viewing the images, it will be necessary to change the review status, and to decide if the case is normal or otherwise. Do this by pressing the **OK** button on the key pad, for a normal case, or the **Discussion** button on the key pad, for a suspicious case. This action will also save the current user as the reading Radiologist, either as the first reviewer or the second reviewer, depending on how the key pad is programmed.
6. Move to the next case by pressing **Next case** on the key pad.

The Information window will be updated with information from the next matching examination in the worklist. If you want to go back to a **previous case** you can select this on the key pad.

12 Setting Options

The following topics are included in this chapter:

- Configuration structure
- Configuring Menus and Toolbars
- Configuring General Properties
- Configuring Image Display Properties
- Configuring Image Tools Properties
- Configuring Stack Viewing Properties
- Configuring Windows Properties
- Configuring Search Properties
- Configuring License Properties
- Configuring Interaction Modes
- Configuring exam type specific settings
- Configuring dictation

IDS5 contains a large variety of options that can be used to customize the application. For example, it is possible to configure which commands that should be available in menus, and toolbars. The configuration is setup in the **Options** dialog, which you open by selecting **Options** from the **Tools** menu.

If you are an IDS5 administrator, a dialog box will appear where you can select whether to modify your own configuration, or the configuration for a certain role. To do this, select the role (or yourself) from the list box in the dialog and click the **Continue** button. If you save configuration for a role, that configuration will be applied to all users who have their preferred role set to this role. This is a way to set default values for a group of users.

12.1 Configuration structure

The configuration structure is divided into several items, each stored separately. This means that the set of configuration items used when logging in to IDS5 can be a combination of items from both the user, and from the user's roles. Configurations cannot be merged inside an item, i.e. the most appropriate configuration item that is found will be used in its entirety.

Most settings in the **Options** dialog are treated as separate configuration items. For menus and toolbars the configuration items are:

Menubar configuration The menu labels in the IDS5 windows' menubars.

Menu configuration	The commands in each menu of the menubars.
Pop-up configuration	The commands in each pop-up menu/toolbox.
Toolbar configuration	The commands in the IDS5 toolbars.
Shortcut configuration	The shortcuts for all commands.

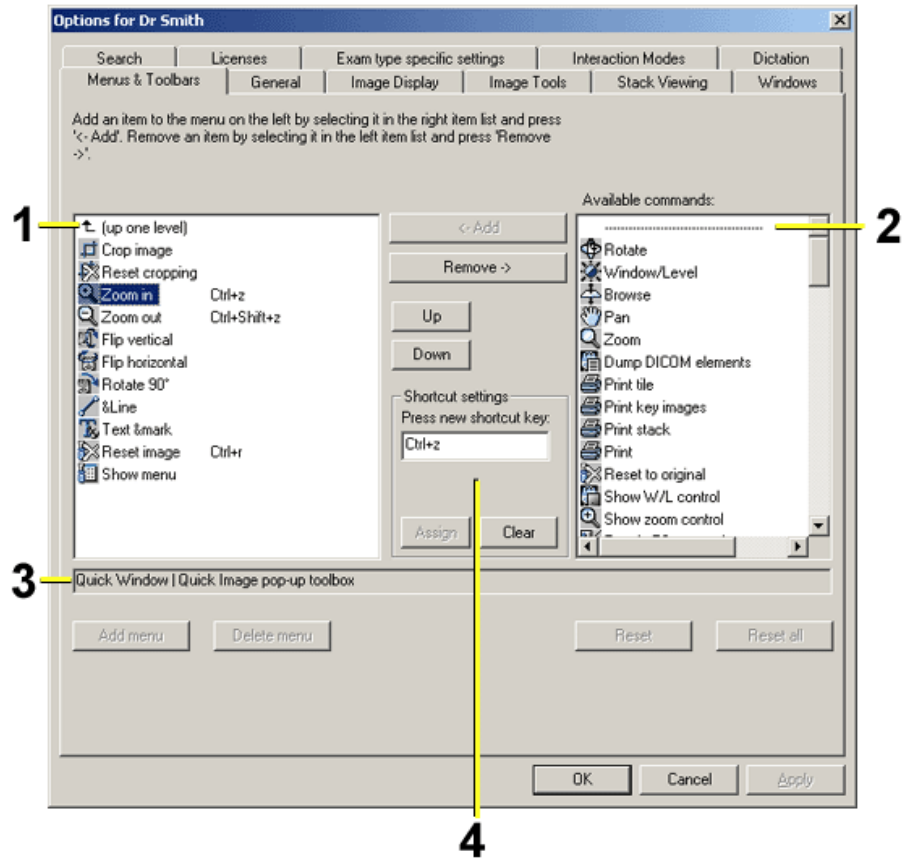
When logging in to IDS5, the system searches for configuration items in the following order:

1. Configuration item for the current user
2. Configuration item for the current user's preferred role (the preferred role is defined in WISE/tools)
3. Configuration item for the current user's other roles (in random order)

As soon as a configuration is found, IDS5 looks no further. This means that if there is a user configuration of a certain item, this configuration will always be used. In the same way, configurations for the preferred role will override configurations for other roles.

12.2 Configuring Menus and Toolbars

As with many Windows-based applications, you can change the configuration of the toolbar in the IDS5. Changing menu/toolbar configuration is done in a similar way that in, for example, Microsoft Word and Internet Explorer. The main difference here is that the workstation employs a user/role concept.



1. This list shows the current configuration and commands that are assigned to a shortcut.
2. This list shows the commands that are available but not used.
3. The path to the currently selected menu or window is displayed in the path box.
4. Define a shortcut for a command by typing in the shortcut combination in the edit box. The entered shortcut is checked to see if it is already assigned to a command.

► **To configure menus and toolbars**

1. Select the **Menus & Toolbars** tab in the **Options** dialog.

This dialog contains a list of configurable options on the left side, and a list of possible commands for the given options on the right side.

2. Select the option you wish to change from the area on the left. For example, you can select **Quick window->Menubar->&File**. This will enable you to configure the **File** menu, in the menubar displayed in the Quick window.
3. Select any options on the right that you wish to add to the configuration, and click the **Add** button.
4. Select any options on the left that you wish to remove from the configuration and click the **Remove** button.

5. It is possible to change the order of any commands by selecting the command, and clicking either the **Up** or **Down** buttons. The selected command will then be moved up or down.
6. Apply any changes you have made to the configuration by clicking the **OK** button.

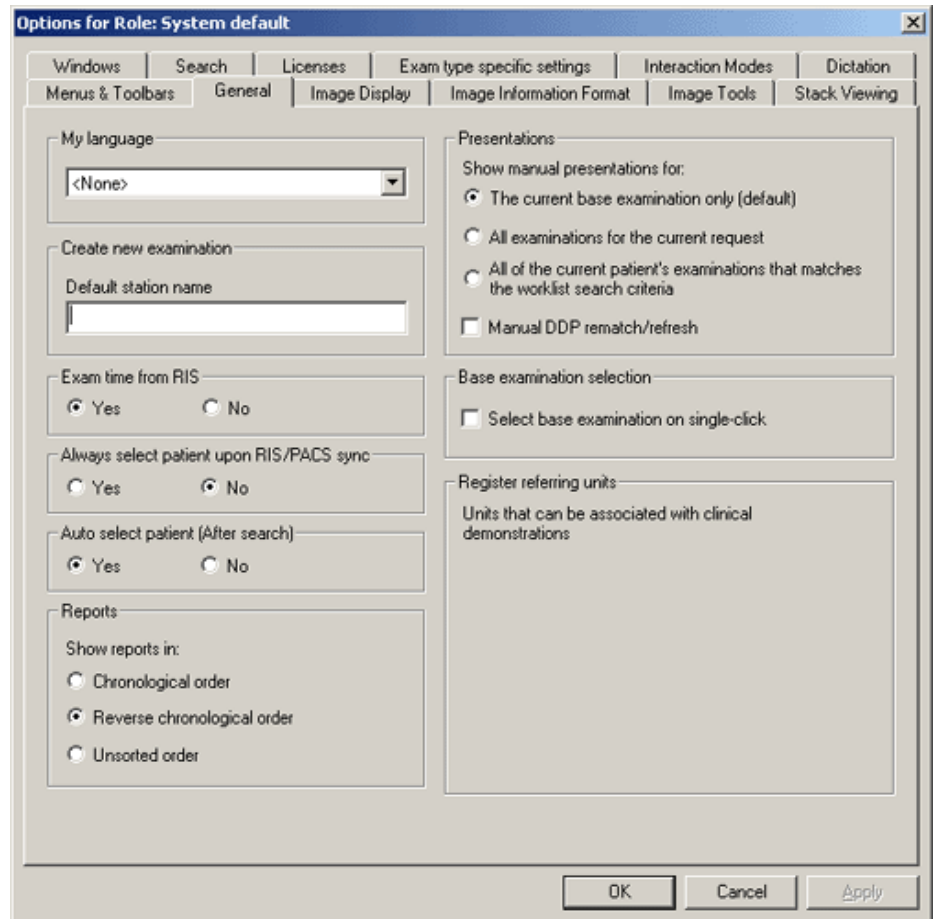
► **To configure shortcuts:**

1. Select the command that you want to give a new or updated shortcut to, by double-clicking the list on the left side. For instance, you can select **Quick window->Menubar->&File->Close** to select the **Close** command.
2. Select the shortcut edit box.
3. Type in a shortcut sequence with the keyboard. Shift and/or CTRL keys can be used in a shortcut sequence.
4. A check is made to see whether the command is already assigned to a command, in which case the name of that command is displayed.
5. Save the changes by clicking on the **Assign** button in the shortcut frame.

Note: Command activation through the use of shortcuts requires that the command in question is accessible from a menu. A toolbar command must therefore also be present in a menu, to enable shortcuts to the command.

12.3 Configuring General Properties

IDS5 offers some general configuration parameters that may be used to personalize the behavior of IDS5. Most parameters in this dialog is only possible to configure on system level. These parameters will be disabled when configuring for a user or role.



The general configuration dialog shows the current configuration.

My language

You can configure your preferred language. This is configurable on user level.

Create new examination

A default station name can be set. This station name is used when creating a new examination in IDS5. This is configurable on system level.

Examination time from RIS

In the frame Examination time from RIS you can choose whether or not the examination time should be affected by the command **Update from RIS**. This configuration is valid on system level.

In addition, it is possible to configure the examination time on a machine level. For further information, please read [System Administrator's Guide IDS5 \[1\]](#).

Presentations

Depending on the workflow it may be beneficial to show/use presentations for other examinations than the current base examination. This is useful for instance when multiple examinations exist for the same request, or if you are not interested in using base examination when creating a presentation.

It is possible to show different manual presentations by switching between the following modes:

- The current base examination only (the default mode).
- All examinations for the current request.
- All of the current patient's examinations that matches the worklist search criteria.

It is possible to turn off **DDP rematch/refresh**, which otherwise is applied automatically when the exam type change because new images arrives. A command **Rematch DDP** is available to perform manual DDP rematch.

This is configurable on system level.

Select base examination on single-click

Base examination is normally selected when an examination in the information window is double-clicked. However, in certain workflows it may be beneficial to select the base examination on a single mouse click.

Always select patient upon RIS/PACS sync

If the RIS does not explicitly send which examination to select in IDS5, it is possible to let IDS5 select the only patient in the worklist, which automatically selects the latest exam and shows the images if the image windows are opened. It is important to notice that this may result in IDS5 showing a different exam than what is selected in the RIS.

Auto select patient (After search)

If it's undesirable that a patient becomes selected automatically after a search in the Information Window, it is possible to turn off this behaviour. This is configurable on system level.

Register referring units

It is possible to register names of referring units. Registered referring units can then be connected to specific clinical demonstration worklists. This is configurable on system level.

Report sort order

It is possible to change the order in which reports are shown in the IDS5 and IDS5/web. This setting can be found on the General tab in the Options dialog.

Note: This is configurable on system level only.

Possible settings are:

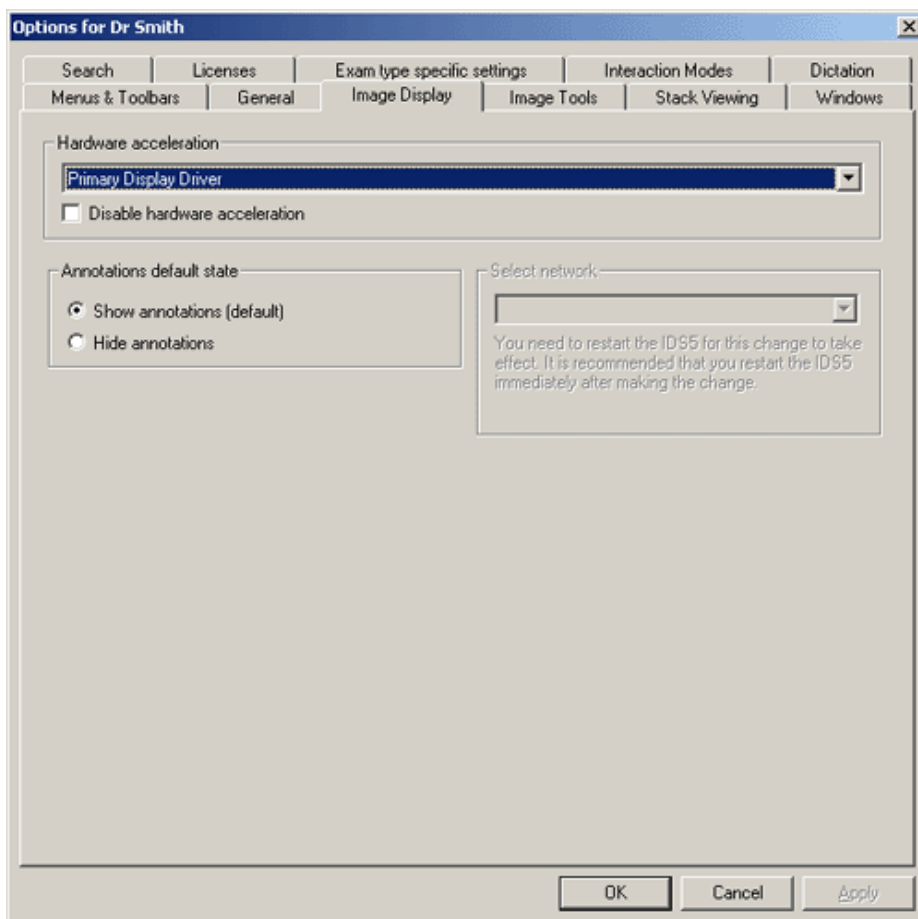
Chronological	Reports are shown in chronological order, starting with the oldest report.
Reverse chronological	Reports are shown in reverse chronological order, starting with the newest report. This is perhaps the most useful configuration since it shows the most recent report by default.
Unsorted order	Reports are not sorted. Use this mode only if your workflow requires the old sorting algorithm.

► **To configure general parameters**

1. Select the **General** tab in the **Options** dialog.
2. Select a preferred language from the **My language** drop down box.
3. If you are configuring for the system level: Type in a new default station name in the corresponding edit box of the **Create new examination** frame.
4. If you are configuring for the system level: Choose whether or not the examination time should be affected by the command **Update from RIS** by selecting **Yes** or **No** in the frame **Examination time from RIS**.
5. If your current workflow benefits from selecting base examination on single clicks, check the **Select base examination on single-click** checkbox.
6. If you are configuring for the system level: Select if IDS5 should always select a patient on RIS sync by selecting **Yes** or **No** in the frame **Always select patient upon RIS/PACS sync**.
7. If you are configuring for the system level: Select if IDS5 should automatically select a patient after a search by selecting **Yes** or **No** in the frame **Auto select patient (After search)**.
8. If you are configuring for the system level: Select if connected examinations' manual presentations are to be shown in the **Presentations** frame.
9. If you are configuring for the system level: Register referring units in the **Register referring units** frame by clicking the **Add...** button and type in the name in the following dialog. Units can be removed by using the **Delete** button.
10. Apply the changes to the user configuration by clicking the **OK** button.

12.4 Configuring Image Display Properties

IDS5 offers several configuration parameters regarding the Image Display.



The image display configuration dialog shows the current configuration.

Hardware acceleration

Hardware acceleration can be disabled for one type of graphics board. Select the correct type in the list and use the checkbox to disable hardware acceleration for this board type. Please contact your system administrator for configuring more advanced hardware settings, such as real-time software resampling.

Annotations default state

The default setting is to always show annotations. However, when performing secondary review it may be of importance to

disable automatic display of annotations. This may be configured per role or user.

Note: The radiologist must be fully aware of this configuration, so that no annotations are unintentionally missed. Automatically hidden annotations should only be used by the secondary reviewer. Likewise should care be taken when using the command **Hide annotations** in the Image window **View** menu (**Annotations** sub menu). This command affects all Image windows including windows currently obscured by e.g. the Information window. The Radiologist should be aware of this fact so that any previously hidden annotations are not unintentionally missed when switching to a previously obscured view.

Select network

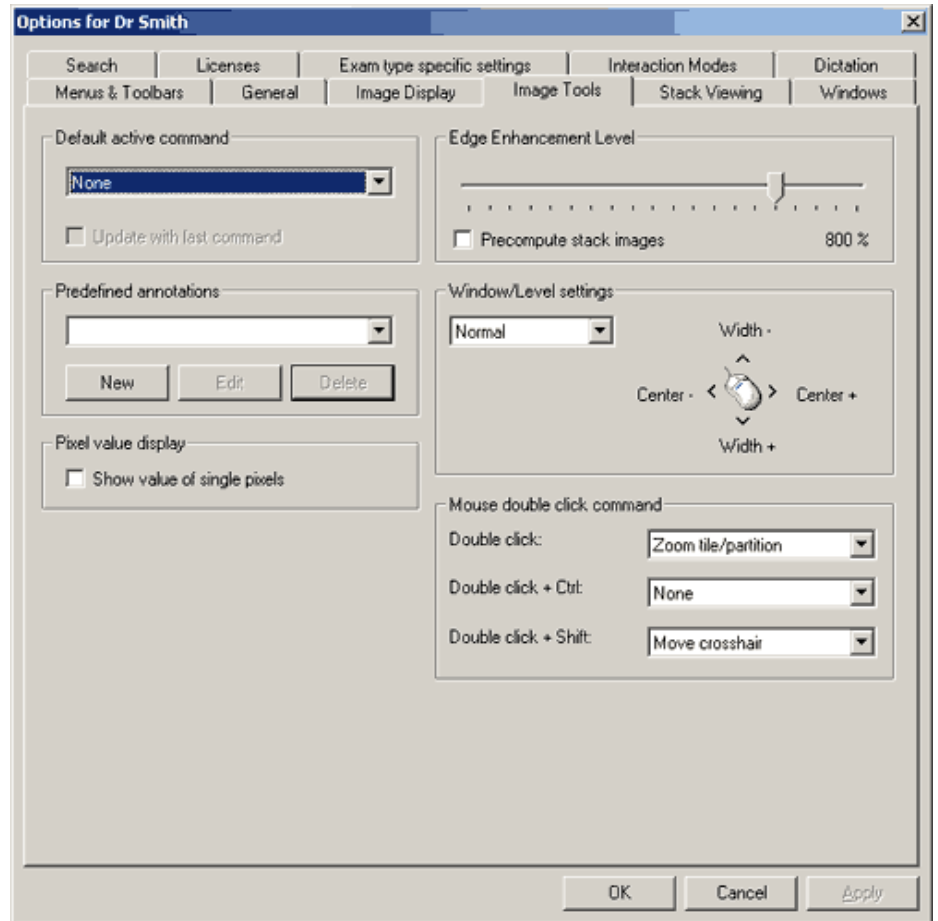
If your client is an IDS5/cl.net client, and the server you are connected to uses JPEG2000 compression, you can select what network you are using. In the combo-box in the **Net type** frame you can select between three different net types and one default setting. The configuration is done for a role.

► To configure image display

1. Select the **Image Display** tab in the **Options** dialog.
2. Select the preferred configuration.
3. Select the net type that best matches your network (use the default if you are connected to a high bandwidth network).
4. Apply the changes to the configuration by pressing the **OK** button.

12.5 Configuring Image Tools Properties

IDS5 offers several configuration parameters regarding the tools connected to general image viewing.



Default active command

It is possible to configure a command, to be automatically active in the Image window or Quick window. The drop-down list contains all Image window commands that can be active by default, i.e. mouse controlled commands. The image command that is active by default will be automatically executed each time the left mouse button is clicked on an image. Technicians will probably prefer to have the crop command active while radiologists might want to have some measure command as their default command.

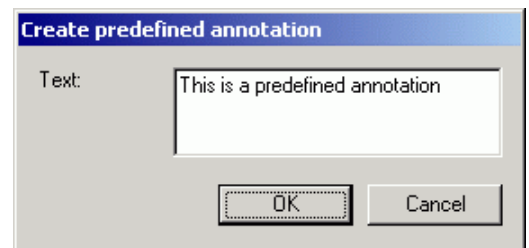
It is also possible to configure the default command to be automatically updated to the last mouse activated command. This

functionality is selected by checking the checkbox.

Note: The default active command will only be active provided that *pan* is the current interaction mode and the image is zoomed out. In other cases (if the image is zoomed in or if any other interaction mode than pan is selected) the interaction mode will be the active command.

Predefined annotations

Predefined annotations may be activated as a dynamic Image View command, accessed from the Image View pop-up menu. The defined annotations will be displayed with their label, and the configured annotation text will be inserted in the image, when the command is selected. The list shows all available predefined annotations. The annotations are accessible when writing an annotation, by scrolling the mouse-wheel (middle button). For more information please read [To use predefined annotations](#). Annotations are created or modified in a text edit dialog:



Pixel value display

You can configure to show or hide the pixel value display, see [To measure a single pixel value](#), by selecting the checkbox. Applying the command in the Image Window **View** menu will also change the default state, in other words it is the same thing as setting this configuration on user level.

Edge Enhancement Level

The edge enhancement level is displayed in percentage, and is altered by moving the slider to the left or right. The slider is moved in the same manner as other mouse drag-and-drop operations. Stack precomputation is used to improve performance when viewing stacks that have some image processing, such as edge enhancement, applied to it. **Stack image precompute** is enabled by selecting the checkbox.

Window/Level settings

The grayscale setting can be done in different ways and this can be configured using the list in the **Window/Level** settings frame. The

figure shows how mouse movement in different directions correspond to how the grayscale settings change.

Mouse double-click action	It is possible to configure what action to be executed when a mouse double-click is performed. It is possible to have different actions depending on the state of the modifier keys CTRL and SHIFT. Available actions are zooming of selected tile (Zoom tile), zooming of selected partition (Zoom partition), a combination of zooming the selected tile and partition (Zoom tile/partition) and moving the crosshair marker (Move crosshair). See below for a description.
Zoom tile	Zooms the selected tiled image so that it covers the whole partition, i.e. toggle to 1x1 tile mode. Use the double-click combination again to return to previous tile mode.
Zoom partition	Zooms the selected partition so that it covers the whole image window, i.e. toggle to 1x1 partitions. Use the double-click combination again to return to previous partitions.
Zoom tile/partition	Zooms the selected tile and partition, i.e. the selected tile will be enlarged to cover the whole image window. Use the double-click combination again to return to the previous tile and partition.
Move crosshair	Moves the crosshair to the current mouse position.

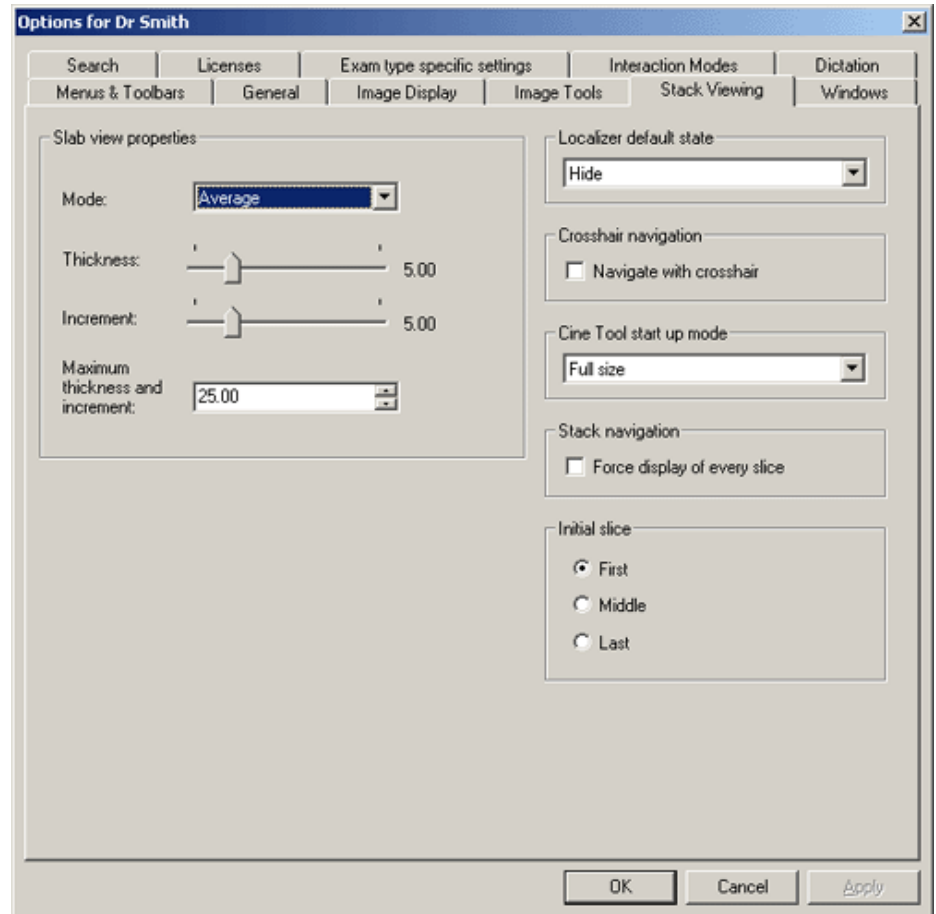
Note: The crosshair must be turned on.

► **To configure image tools properties**

1. Select the **Image Tools** tab in the **Options** dialog.
2. Select a default active Image View command by opening the **Default active command** drop-down list, and clicking on one of the list items.
3. Add, modify, or delete predefined annotations by clicking on the **New**, **Edit**, or **Delete** buttons in the **Predefined annotations** frame.
4. Set edge enhancement level by adjusting the slider. Select whether to use **stack precomputing** by checking or unchecking the checkbox in the same frame.
5. Select mode for grayscale setting in the list box of the **Window/Level settings** frame.
6. Select commands for different double-click actions in the **Mouse double-click command** frame.
7. Apply the changes to the configuration by clicking the **OK** button.

12.6 Configuring Stack Viewing Properties

The Stack Viewing property page is used to configure the behavior of functions connected to viewing of image stacks.



Slab view properties

The slab properties page is used to configure the default values that should be applied when the slab viewer is started.

In the configuration dialog the user can set the default settings for slab view mode, i.e. thickness, increment, maximum values, and mode. For a more detailed description of these please read [section 7.16 Slab view](#). When the slab view mode is started, the settings are applied. When changing the settings in the slab view mode, no adjustments are made to the default settings.

Localizer default state

The default state for displaying the Localizer can be set here. Use the list box to set the default state: hidden, shown in simple mode (no crosshair), or shown completely.

Crosshair navigation

The navigation mode of the localizer crosshair can be configured here. If checked, the crosshair position will be used to update related views with

the projection closest to the crosshair position. If unchecked (Default), the crosshair position will not affect the content in related views. Note that if a corresponding view is in tile mode, the closest projection is displayed in the top left tile.

Cine tool startup mode

The default start up mode for displaying the Cine Tool can be set here. Use the list box to set the default mode: Full size, or Minimized.

Initial slice

What slice that should be displayed by default when a stack is hung can be set here. The available alternatives are first, middle or last slice. If no changes are made the first slice will be used. If the initial slice has been configured in a DDP the DDP settings should have precedence over the default configuration.

Stack navigation

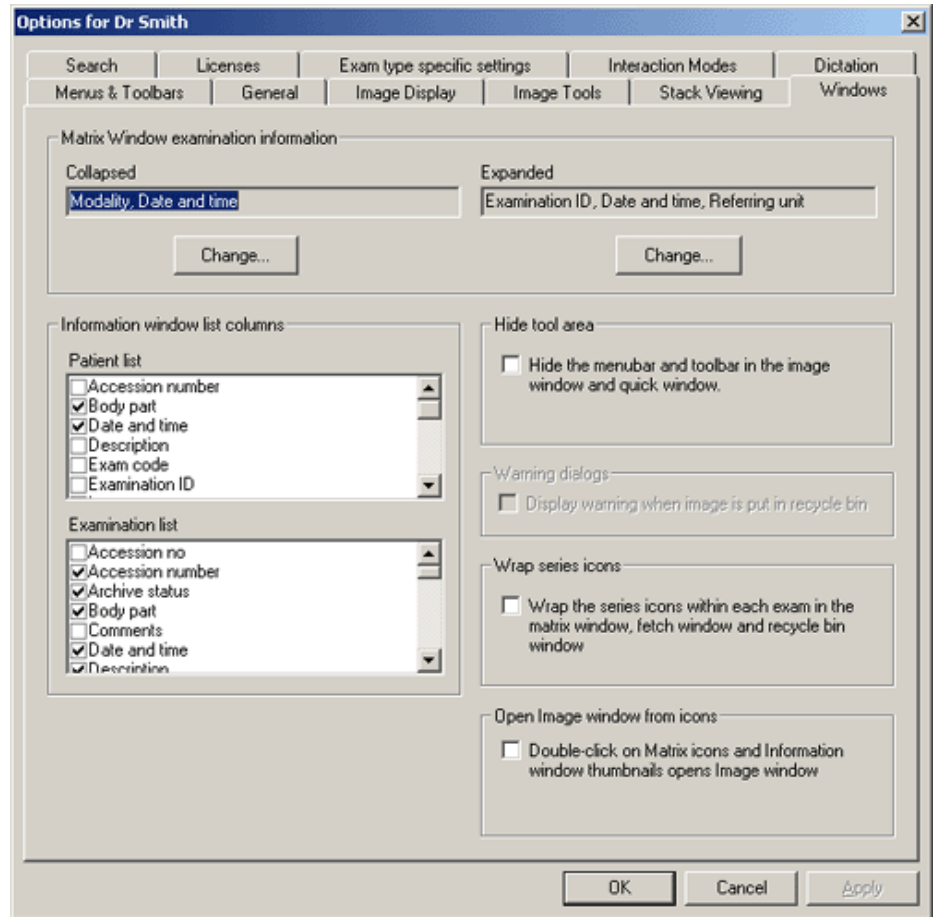
The setting "Force display of every slice" controls whether all slices are displayed or not, when navigating through a stack. When turned off, all slices are not necessarily shown if the user is scrolling quickly enough. When turned on, every slice is completely drawn before moving to the next one.

► To configure stack viewing properties

1. Select the **Stack Viewing** tab in the **Options** dialog.
2. Set default values for Slab view (thickness, increment, unit, and mode) in the edit and list boxes of the **Slab view properties** frame.
3. If the slab view control should automatically appear for large stacks check the check box and type in a size limit in the lower edit box of the **Slab view properties** frame.
4. Select default state for the Localizer in the list box of the **Localizer default state** frame.
5. Select the default mode of the Cine tool in the list box of the **Cine Tool startup mode** frame.
6. Apply the changes to the configuration by clicking the **OK** button.

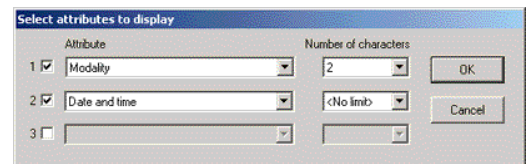
12.7 Configuring Windows Properties

The Windows properties page is used to configure behavior and appearance of windows in IDS5.



Matrix window examination information

The Matrix window examination information section controls the information displayed for an examination in the Matrix Window. The left part concerns the information for a collapsed examination, and the right part concerns expanded examinations. To change either configuration, click the corresponding **Change...** button. Then you are presented with the following dialog:



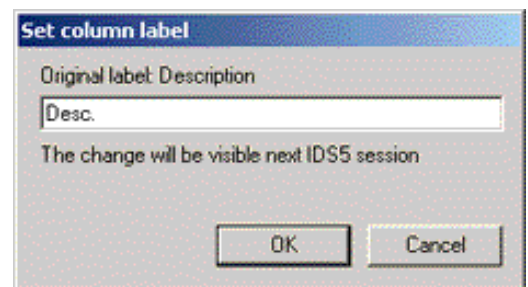
In this dialog you can set up to three examination attributes to be displayed. The check boxes on the extreme left enables an attribute selection. In the Attribute list box, select the attribute to display. Each attribute information for a collapsed examination can be limited to a certain number of characters. This is set in the Number of characters list box. These list boxes are disabled for expanded examinations.

Information window list columns

Here you can select which columns you would like to see in the Patient list and Examination list. The changes will take effect directly after you exit the options dialog. Any new columns will be put to the right of the existing.

Note: Columns can only be configured for the current user. The configuration will also be unavailable the first IDS5 session, log out and in again to access it.

Columns can be renamed by double-clicking on the name in the list, a dialog appears where a new name can be assigned.



After returning to the options dialog the original name will be in parenthesis.

Note: Change of column names will not appear in the Information Window until the next time start up or login to IDS5.

Hide tool area

This configuration decides if your menubar and toolbar should be covered with black in the Image window and Quick window.

Warning dialogs

Additional warning dialogs may be enabled or disabled. These settings are configured per role. The configuration checkbox is disabled, as displayed above, when the options are configured for a specific user. The configuration checkbox is enabled when the options dialog is opened for configuration of a role.

Wrap series icons

Checking this option will enable wrapping of the series icons in the Matrix, Fetch image, Recycle bin and Reject bin windows. This means that instead of placing all icons of an examination on a single row, icons placed to the right of the right edge of the window will be wrapped onto additional rows within the same examination.

Open Image window from icons

Checking the "Double-click on Matrix icons and Information window thumbnails opens

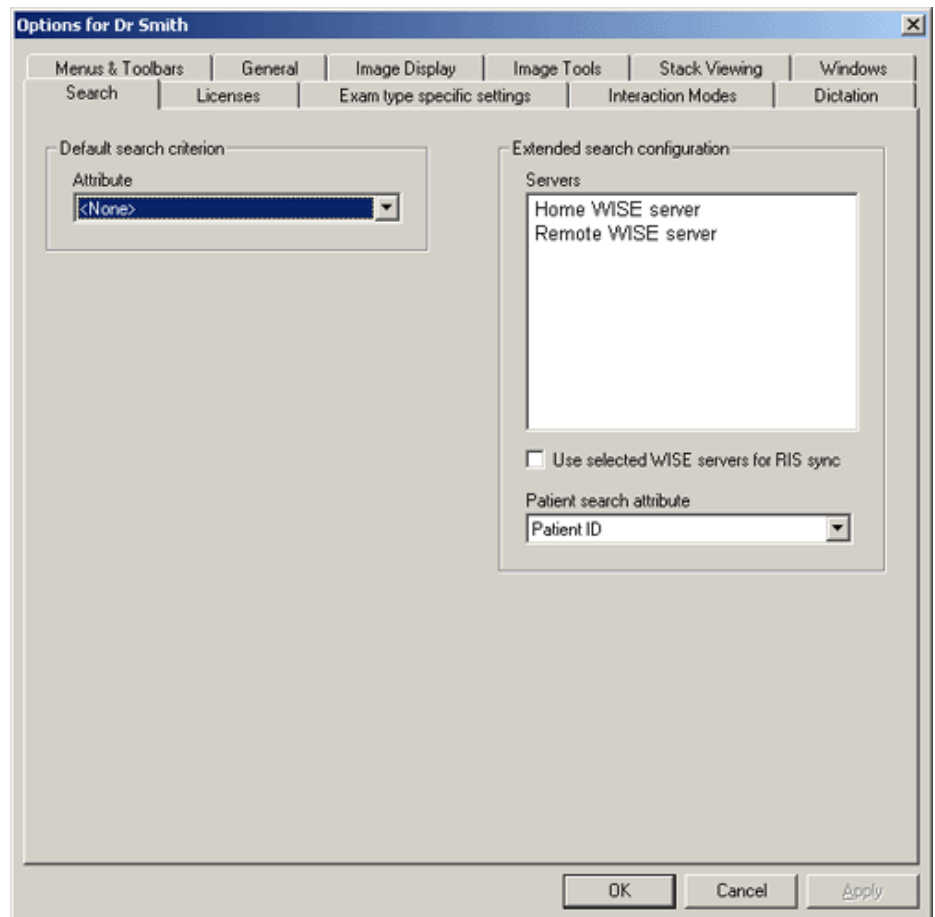
"Image window" checkbox will cause the Image window to be opened when the user double-clicks an icon in the Matrix window or a thumbnail in the Information window.

► **To configure windows properties**

1. Select the **Windows** tab in the **Options** dialog.
2. Select which information that should be displayed for collapsed, and expanded examinations in the Matrix window in the **Matrix window examination information** frame.
3. Select whether to hide image windows tool areas using the checkbox in the **Hide tool area** frame.
4. Select whether to activate examination wrapping using the checkbox in the **Wrap series icons** frame.
5. Select whether double-clicking an icon in the Matrix window or a thumbnail in the Information window opens an Image window or the Quick window by using the checkbox in the **Open image window from icons** frame.
6. If you are configuring for a role: Check the check box in the **Warning dialogs** frame to enable extra warning dialogs.
7. Apply the changes to the configuration by clicking the **OK** button.

12.8 Configuring Search Properties

The search properties page is used to configure how different searches are performed in IDS5.



The default search criterion controls the behavior of IDS5 search functions, i.e. the selected criterion will always be selected when opening a search dialog.

The extended patient search options controls the behavior of the IDS5 extended patient search function. The selected servers will be used by the command to search for more examinations relating to patients. The patient search attribute determines how patients are searched for on the selected servers. For instance, if you select patient by personal ID, all examinations for patients with matching patient personal ID's will be found.

WISE servers selected for extended patient search can also be used for RIS synchronization. If this feature is enabled, IDS5 will use the WISE servers selected in the extended search list when synchronizing with a RIS in order to find patient data that is not located on the home WISE server. If this feature is disabled, only the home WISE server will be used when synchronizing with a RIS. Observe that this feature is only available for remote WISE servers, not for DICOM Q/R servers.

► **To configure search properties**

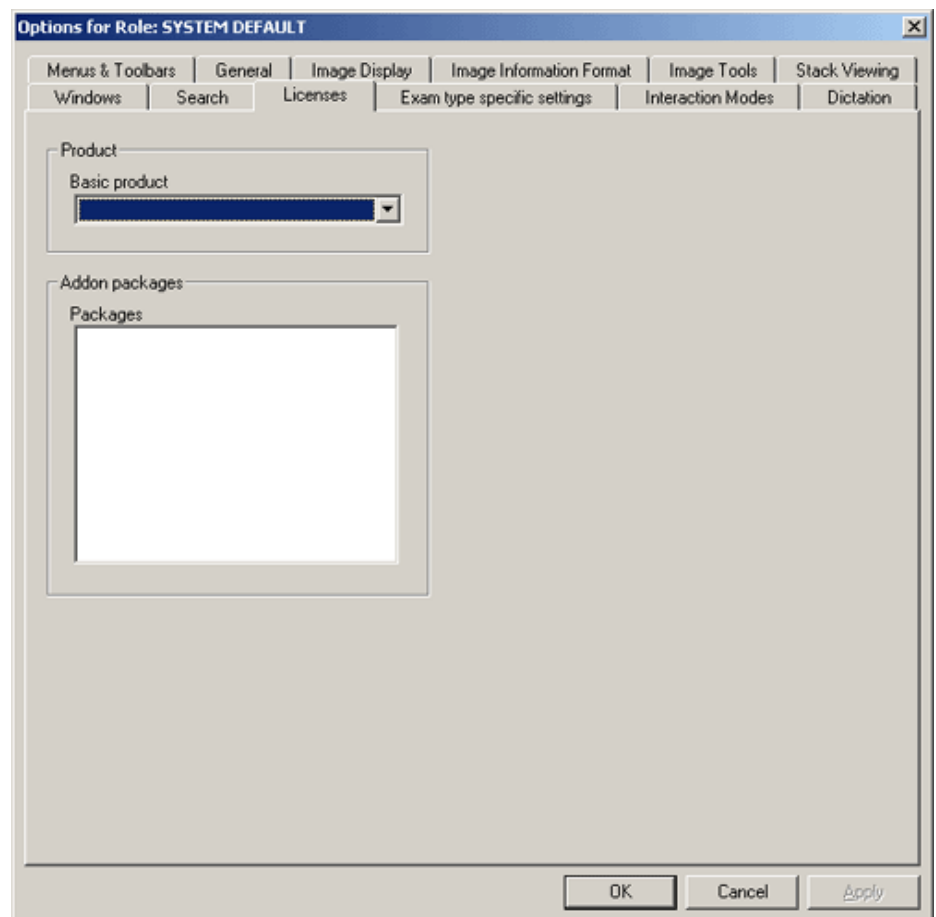
1. Select the **Search** tab in the **Options** dialog.
2. The default search criterion can be changed by selecting the attribute from the **Default search criterion** drop-down box.
3. Select the servers to be used when performing an extended patient search, by selecting them in the server list.

4. Check the **Use selected WISE servers for RIS sync** checkbox in order to use the selected servers for RIS synchronization.
5. Select the patient search attribute to be used by extended patient search, by selecting appropriate attribute in the drop-down box.
6. Apply the changes to the user configuration by clicking the **OK** button.

12.9 Configuring License Properties

The license properties page is used to configure the "Roaming Desktop" properties. Please see [section 4.9 Concurrent User Engine](#) and [section 4.10 Roaming Desktop](#) for more information. This configuration can also be performed using WISE/tools.

When you log on, the IDS5 associated with your role, will start. A system administrator configures which role uses what type of IDS5. For instance, whenever a user using the role "technician" logs on, an IDS5/qa.net will start, and if a user using the "radiologist" role logs on, an IDS5/dx.net will start.

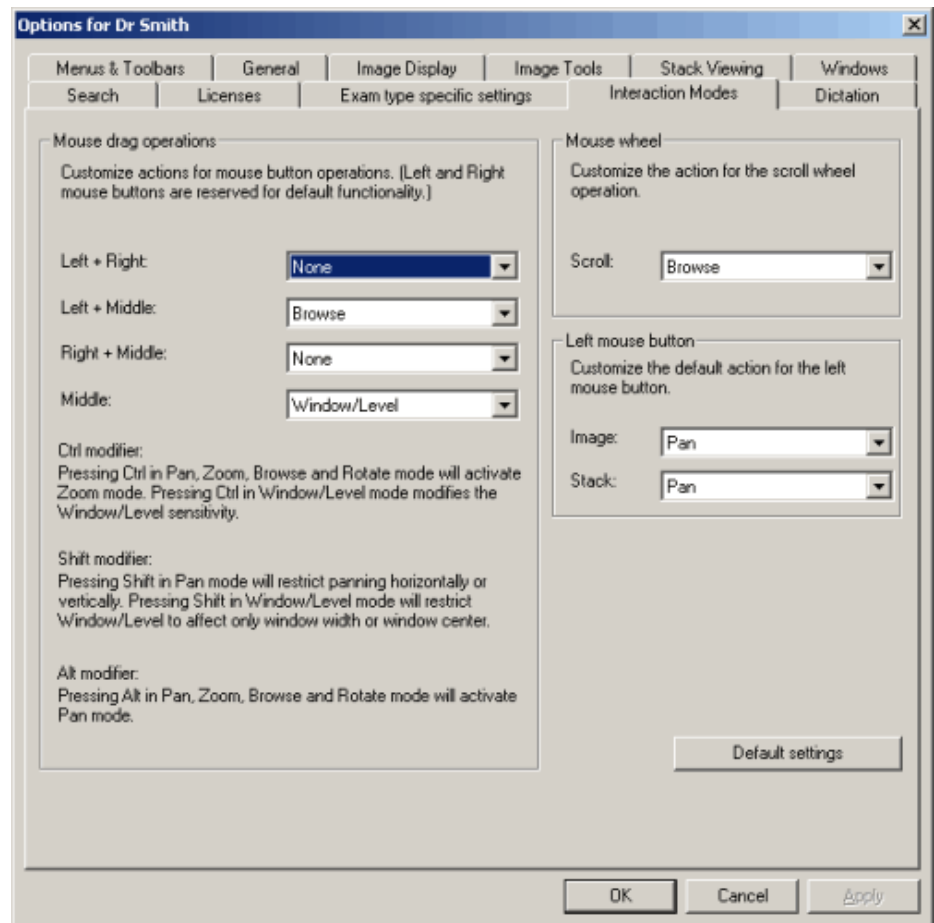


If the **Basic product** list box is active, you are able to switch to whatever type of IDS5 you wish. If the list box is inactive you do not have the permission to switch products. Only users with system administrator privileges are allowed to switch IDS5 products.

The **Add-on packages** box allows selecting the add-on packages to be available in IDS5 when you log on.

12.10 Configuring Interaction Modes

The Interaction modes property page provides the possibility to configure which interaction modes that will be applied for certain mouse button combinations. It is also possible to configure the default interaction mode available on the left mouse button for different image types.



Note: Some interaction modes might be inactive for certain image types. For example, the **Browse** action is not available for single images.

The default settings are:

- **Left + Right** — None
- **Left + Middle** — **Browse**
- **Right + Middle** — None
- **Middle** — **Window/Level**
- **Mouse wheel scroll** — **Browse**

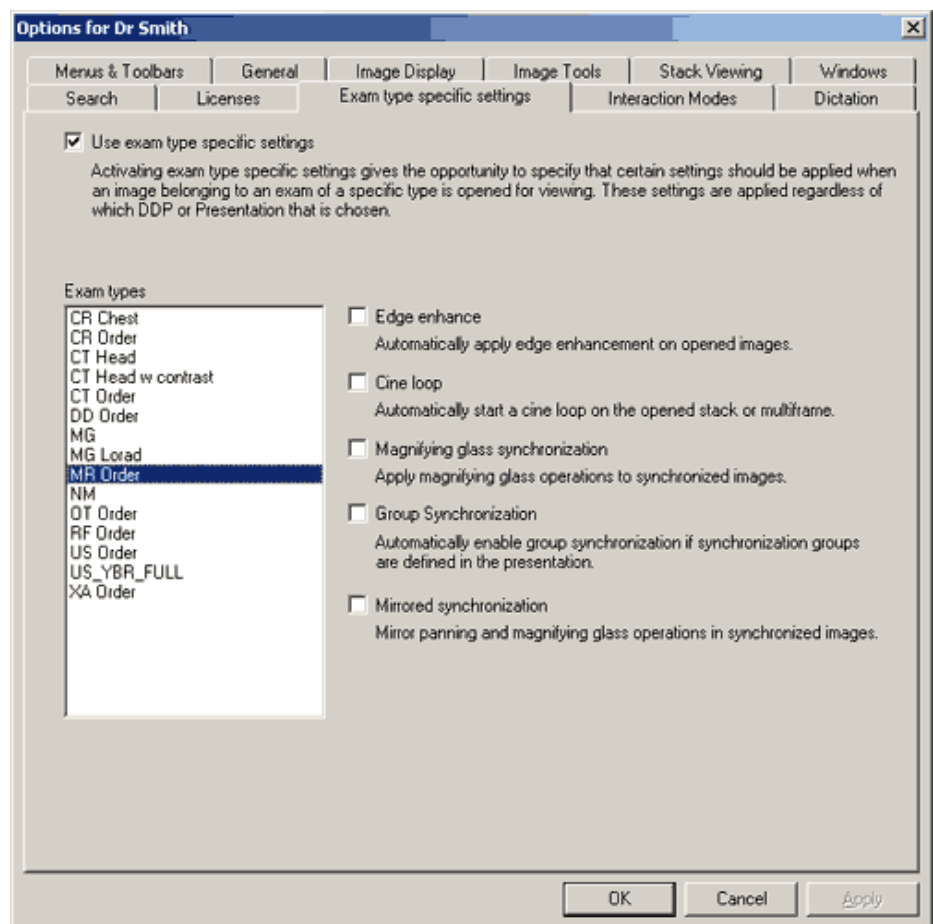
- Default left mouse button for single images — Pan
- Default left mouse button for stacks — Pan

The **Default settings** button will apply the default settings.

12.11 Configuring exam type specific settings

The tab Exam type specific settings is used to configure settings for different exam types. The type label is written at the top of each examination row in the matrix. For more information on how to change the examination type, please read [section 6.2.4 Force Examination Type Matching](#).

You change the configuration by marking an existing exam type from the list and then check or uncheck the checkbox at the property you want to change for that exam type.



You can configure the following properties for each exam type:

- Edge enhancement
- Cine loop
- Magnifying glass synchronization

- Group synchronization
- Mirrored synchronization

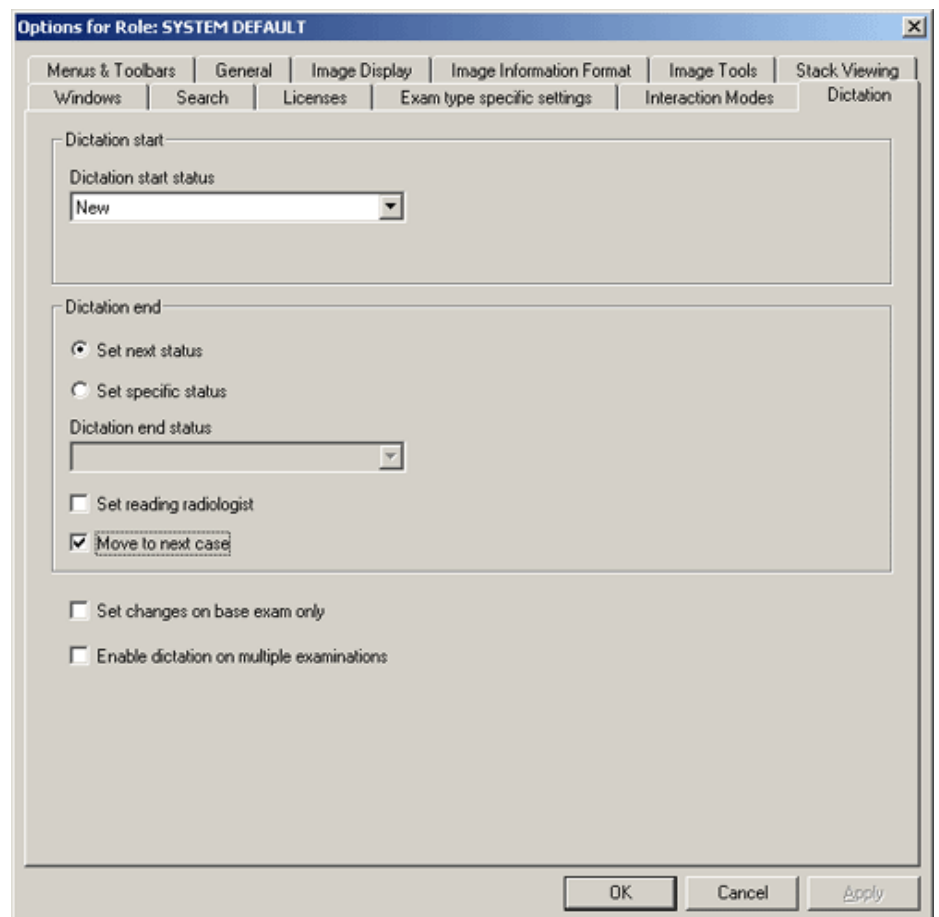
Note: If an examination matches **any** of the exam types that have been configured with e.g. edge enhancement, the images of this exam will be shown with edges enhanced.

Note: To be able to use mirrored synchronization you must have the **Mammography** license.

Note: It is not recommended to automatically enable group synchronization on large stacks, as it may affect the time to next case.

12.12 Configuring dictation

The Dictation page is used to configure different properties of the communication between IDS5 and an external dictation system. All properties are configurable at system level.



Dictation start status

By setting this property a specific status is automatically set on examinations when dictation starts. If the status **No status** is chosen, no status change will be made. If **Set**

	changes on base exam only is checked then only the base exam will be affected.
Set next status	By setting this property the next available status will automatically be set on examinations when dictation ends.
Set specific status	By setting this property a specific status is automatically set on examinations when dictation ends. If the status No status is chosen, no status change will be made. If Set changes on base exam only is checked then only the base exam will be affected.
Set reading radiologist	By setting this property the logged in user is set as reading radiologist on examinations when dictation ends. If Set changes on base exam only is checked then only the base exam will be affected.
Move to next case	By setting this property the next case in the current worklist will automatically be selected when dictation ends.
Set changes on base exam only	By setting this property status changes and setting of reading radiologist will only affect the base examination. If not set these changes will affect all examinations related to the current request. This setting has no effect when dictating on multiple examinations at the same time.
Enable dictation on multiple examinations	By setting this property it will be possible to dictate on multiple examinations at the same time.

► **To configure dictation properties**

1. Select the **Dictation** page.
2. Select a status in the list **Dictation start status** that should automatically be set when dictation starts. Select the status **No status** if no status should be set.
3. Select if the next available status should be set when dictation ends by checking **Set next status**. If a specific status should be set check **Set specific status** and also select a status in the list **Dictation end status**.
4. Select if reading radiologist should be set when dictation ends by checking **Set reading radiologist**.
5. Select if changes to status and reading radiologist are to be made on the base examination only by checking **Set changes on base exam only**.
6. Select if it should be possible to dictate on multiple exams at the same time by checking **Enable dictation on multiple examinations**.

A What's new IDS5

The following topics are included in this appendix:

- [What's new 11.1](#)

The intended reader of this appendix is the Sectra PACS end user. For a complete description of every change made in 11.1, please refer to [Release Notes IDS5 \[5\]](#).

A.1 What's new 11.1

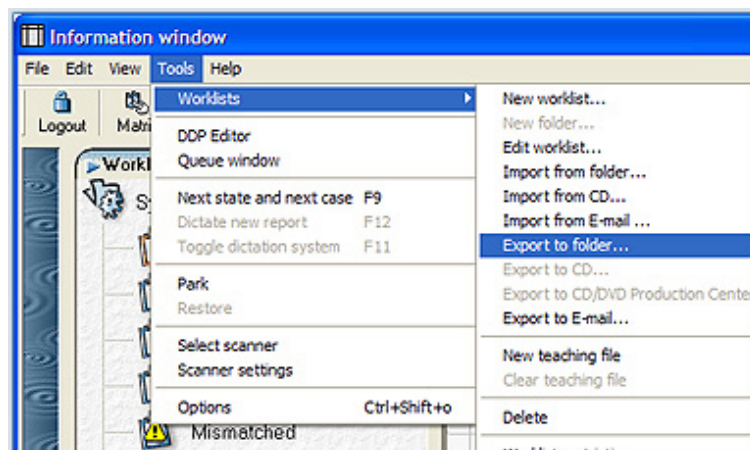
This chapter describes new functionality added in version 11.1 of the IDS5 family, as compared to version 10.2 P1.

A.1.1 New features in IDS5

Some general areas of the IDS5 have been further improved.

Easy to export and import to a user-defined folder (e.g. USB)

As an alternative to exporting to CD, you can now export and import examinations to and from any folder located on the local file system or a remote host, e.g. a USB memory stick.



Export examinations to a USB memory stick

- Change proposal: PCR-SKOZ-6HKE53 released in IDS5_11_1.
- For more information on exporting to a user-defined folder, please refer to [section 5.6 Import and export](#).
- Exporting to a user-defined folder is enabled in `cd_import_export.def`.

CD export and import improved

The format of the content to be exported to CDs from IDS5 has been improved, now supporting more CD burning programs.

The time it takes to export examinations including the CD viewer to CD has been reduced, as has the startup time of the CD viewer when viewing the CD.

The import of CDs has been improved to support a workflow where a very large number of CDs are imported to the local PACS, and where these CDs not always are fully compliant with the DICOM standard. A DICOM compliant CD contains an index file called DICOMDIR which keeps track of all images on the CD. If this file is missing or broken, IDS5 can still try to import the images.

In addition the user can easily select whether an examination imported to Sectra PACS via CD, folder, e-mail or teleradiology, should be archived or not.

Details

- Change proposal: PCR-PSJN-6EEGPW, PCR-SMIS-6E3GRT, PCR-SMIS-6DUEQH, released in IDS5_10_2_P3.
- Change proposal: PCR-ABOT-6F5BAH for improved performance, released in IDS5_11_1.
- For more information on supported CD burning programs, please refer to System Requirements Sectra PACS.
- For more information on importing CDs, please refer to [section 5.6 Import and export](#).

Improved teleradiology functionality

Sending examinations using teleradiology has undergone several improvements to make it easier to use, configure and maintain.

E.g. the column *destination* has been added to the IDS5 Queue window making teleradiology easier to troubleshoot. This is for instance useful if someone from the receiving clinic contact you because an examination has not arrived. You can then easily find the requested examination by sorting the Queue window on destination.

The performance of teleradiology has also been improved.

Details

- Change proposal: NOWE-5V8AWA, released in IDS5_11_1.
- For more information on exporting examinations using teleradiology and the IDS5 Queue window, please refer to [section 5.6 Import and export](#) and [section 3.6 The Queue Window](#).

Worklist subscription between ImageServer/s servers

In release 11.1, Sectra PACS offers the ability to automatically route images to another ImageServer/s within the same PACS. This is useful in a distributed scenario, for automatically sending the examinations from e.g. a remote imaging center to

the main hospital for reading. Hence, there is no longer a need for a user to manually send the worklist with teleradiology.

Worklist subscription was previously only available for IDS5/home destinations.

Details

- Change proposal: AÖSM-5MQMBN, released in IDS5_11_1.
- For more information on configuration of ImageServer/s worklist subscription, please refer to System Administrator's Guide WISE.

Improved integration with RIS/HIS using HL7

Sectra PACS now supports bi-directional HL7 RIS integration. This enhances the RIS integration capabilities by adding bi-directional data flows. You now have the possibility to send items from PACS to RIS, such as double reading results (code, reader and status) in a mammography screening reading session.

The examination prefetch from the long-term archives for examinations scheduled via HL7 has also been improved. The prefetch mechanism previously retrieved all archived prior examinations for the patient. It has now been refined to perform prefetching on the following criteria:

- Minimum and maximum number of examinations to prefetch
- Maximum examination age
- Examination matching based on modality, body part and examination code of the scheduled examination

Details

- Change proposal: PCR-JYNN-69QGH9, PCR-ABRN-6AYAWW released in IDS5_11_1.
- This functionality requires server add-on HL7 RIS Interface.
- For configuration of the HL7 interface, please refer to System Administrator's Guide HL7 RIS Interface.

Cancel scheduled HL7 examinations in IDS5

Examinations scheduled using HL7 are protected from deletion in the PACS. To remove a scheduled examination from Sectra PACS it must be cancelled. This is usually performed by the RIS/HIS which sends a cancel message, but that is not always possible depending on the integration.

You can now cancel such scheduled examinations directly from the examination list in the IDS5 Information window.

The existing command `Delete examination` has been renamed to `Delete online examination` to better describe its functionality.

Details

- Change proposal: PCR-HMAN-6EWCBD, released in IDS5_11_1.
- This functionality requires server add-on HL7 RIS Interface.
- For more information, please refer to [section 5.3 Working with Examinations](#).

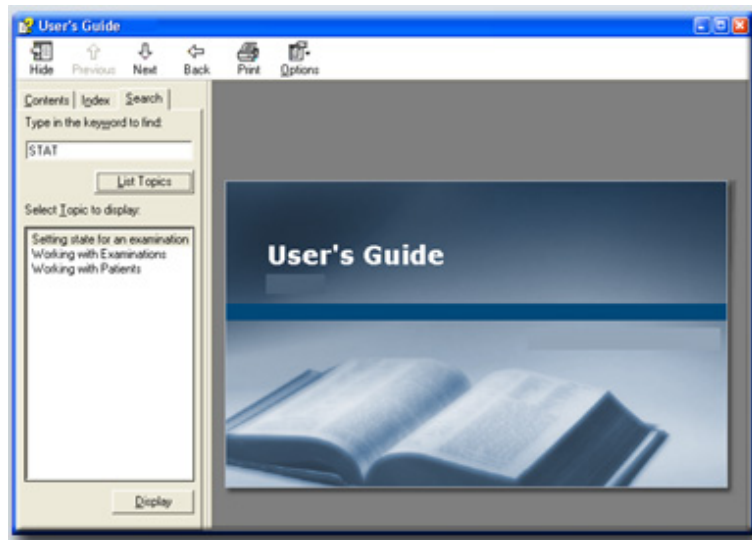
Searchable and printable user's guide

The online user's guide for IDS5 is now available in a new improved format from the IDS5 Help menu allowing you to search the online help efficiently.

In addition, the User's Guide IDS5 is now available as PDF together with the Sectra PACS documentation. The PDFs have clickable links and bookmarks, and are suitable for A4-printing.

Details

- Change proposal: PCR-MLIT-6FRHBL, released in IDS5_10_2_P3.
- This change only applies to U.S. English and Swedish.



Search the online user's guide, or print it out, to learn about IDS5

Exam administration improved

The examination administration wizard in IDS5 allows the user to move and copy images between examinations and requests. The actual entering of the new examination and request ID can now be done semi-automatically. Highly reducing the risk for manual errors and making the workflow more efficient.

The user can select the proper examination and request IDs from an administration list, and the selected IDs will be automatically entered in the examination administration wizard.

Details

- Change proposal: PCR-SMIS-6DUGMA, released in IDS5_10_2_P3.

-
- For more information on performing exam administration, please refer to [section 5.4.1 Correcting mismatches](#).
 - For configuration of the administration list, please refer to System Administrator's Guide IDS5.

Synchronized magnifying glass

Magnifying glass operations can now be applied to several images simultaneously using synchronization.

The setting is selected in the IDS5 Options dialog, Exam type specific settings tab.

Details

- Change proposal: PCR-MSTK-6J2HVN, released in IDS5_10_2_P3.
- For more information on working with the magnifying glass and synchronization, please refer to [section 7.3 Operations on Images](#).
- For configuration of synchronized magnifying glass, please refer to [section 7.6 Synchronizing Images](#).



Synchronize the magnifying glass

Automatic synchronization

If synchronization groups are defined in the presentation, they can now be automatically enabled.

This is very useful in for example the mammography reading scenario, where the reader no longer needs to press the **Sync** button for each hanging in order to perform e.g. the quadrant zoom.

Details

- Change proposal: MKLN-64CB9Y, released in IDS5_10_2_P3.
- For more information on working with synchronization groups in DDPs and manual presentations, please refer to [section 6.5 Creating a DDP](#) and [section 7.6 Synchronizing Images](#).
- The setting is selected in the IDS5 Options dialog, Exam type specific settings tab.

Anonymized print

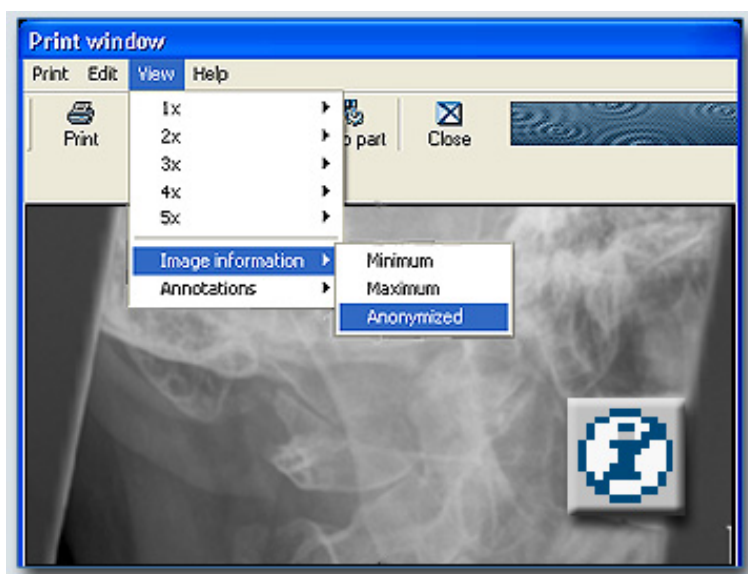
You can choose to display image information on three levels in print-outs: minimum, maximum and anonymized. When the anonymized level is selected, no patient information is displayed on the printed images.

The anonymized option is useful for teaching and demonstration purposes.

In addition, the workflow when printing to a DICOM printer has been improved. The DICOM printer can now be automatically selected, instead of the default Windows printer, reducing the number of required clicks.

Details

- Change proposal: FOLN-59PK54, PCR-DCOR-6H4N3A, released in IDS5_10_2_P3.
- For more information on printing images, please refer to [section 10.2 Printing images](#).



Anonymize printed images

A.1.2 New features in IDS5/mx.net

The double reading for mammography screening in IDS5/mx.net has been improved.

Extended support for multiple window/level settings in DICOM header

You can quickly step through all defined window/level settings for an image. The new command Step All W/L applies any settings defined in the image DICOM header, as well as the IDS5 grayscale presets (as defined in `window_level.def`). The window/level settings will be applied in the order they are listed in the image pop-up menu.

In earlier releases there was only a command for stepping through the IDS5 grayscale presets (Step W/L), hence any useful window/level settings given from the modality in the image DICOM header were previously missed.

Details

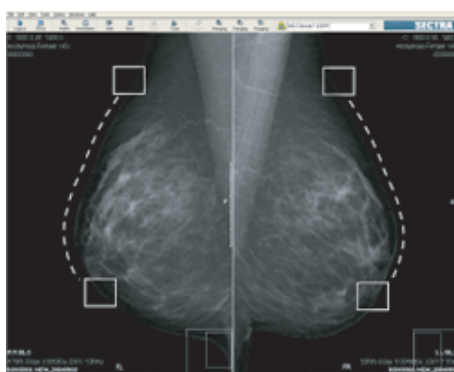
- Change proposal: PCR-HLIK-6BV9S2, released in IDS5_11_1.
- When installing an IDS5/mx.net using the mammography utility, no further configuration is required. The old command **Step W/L (CTRL-W)** will automatically be replaced by the new command **Step All W/L (CTRL-W)** in the image pop-up menu.
- For more information on stepping through all predefined grayscale settings, please refer to [section 7.3 Operations on Images](#).

Mirrored synchronization

In certain review situations it is useful to be able to mirror panning and magnifying operations in synchronized images. This is true, for example, in reading mammography cases in which breast images are hung chest wall to chest wall. Mirrored synchronization allows the user to compare corresponding areas in the left and right breast with the magnifying glass or by panning the zoomed images.

Details

- Change proposal: PCR-HLIK-69UKH3, released in IDS5_10_2_P3.
- For more information on working with mirrored synchronization, please refer to [section 7.6 Synchronizing Images](#).
- For configuration of mirrored synchronization, please refer to [section 12.11 Configuring exam type specific settings](#) and System Administrator's Guide IDS5.



Mirrored synchronization for efficient comparison

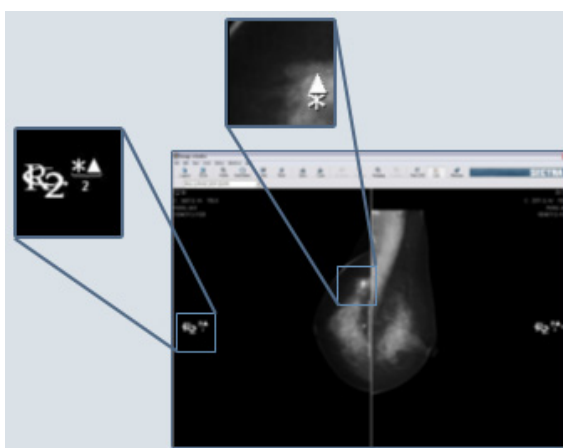
Mammography CAD support in IDS5

The IDS5 will be able to use the content of a Mammography CAD Structured Report, extract the necessary data and display the findings and, if applicable, to display more than one layer. IDS5 also displays the name of the CAD vendor, the SW version and other CAD data.

A new image symbol notifies the user if any CAD objects are present for the image. The display function is a simple toggle command controlled from the dedicated keypad.

Details

- Change proposal: ESEE-53JD76, released in IDS5_10_2_P3.
- For more information on working with double reading and mammography screening, please refer to [section 7.22 Mammography screening](#) and [section 7.23 Mammography CAD](#), Operator's Guide for Sectra Breast Imaging PACS and Installation guide for Sectra Breast Imaging PACS.



Mammography CAD markers displayed in IDS5

Darker non-image windows

The recommendation for a mammography reading room is that it should be dark without too much ambient light and disturbing light sources. All bright areas in the information and matrix windows are disturbing to the reader. This feature will automatically dim the brightness of the information and matrix windows.

It is possible to configure the darkness of the dim effect and also whether it should be always on, always off or automatically on when the pointer is moved from the window.

Details

- Change proposal: PSJN-4UKB25, released in IDS5_10_2_P3.
- For more information on working with dimmed information and matrix window, please refer to [section 10.4 Dimming windows](#).
- For configuration of dimmed information and matrix window, please refer to the System Administrator's Guide IDS5.

True blind double reading

IDS5/mx.net now supports true blind double reading, a common scenario in the mammography screening workflow. This usually means that a second reader should not be able to see any annotations made by the first reader. Annotations will be

visible for the creator and users with a specific role only. Typically, the specific role is a third reader, who will be able to see all annotations created for an examination.

Details

- Change proposal: PCR-ABRN-6EXHB6, released in IDS5_10_2_P3.
- For more information on working with double reading and mammography screening, please refer to [section 7.22 Mammography screening](#), Operator's Guide for Sectra Breast Imaging PACS and Installation guide for Sectra Breast Imaging PACS.

Intelligent double and triple reading commands

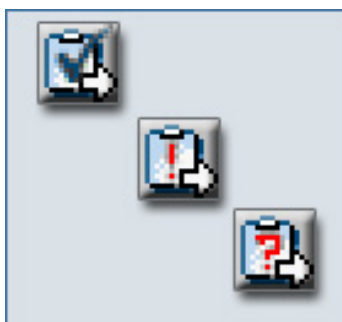
Previously, the mammography commands required that the user knew if he/she was the first or second reading radiologist. Now, there is a new set of commands that automatically register if the reading result is for the first or second reading.

Also new for this release is support for triple reading. A third code is available together with new commands and new worklists.

In addition, the mammography commands no longer need to be installed on the server.

Details

- Change proposal: PCR-ABRN-6AKH4J, released in IDS5_10_2_P2.
- For more information on working with double reading and mammography screening, please refer to [section 7.22 Mammography screening](#), Operator's Guide for Sectra Breast Imaging PACS and Installation guide for Sectra Breast Imaging PACS.



New commands for an improved double reading workflow

A.1.3 Reject Analysis Package

The new workstation package Reject Analysis Package enables the following functionality.

Reject analysis

IDS5 provides a facility for the user to reject images as an alternative to full delete of images. Rejected images are stored in the PACS where they are hidden for the

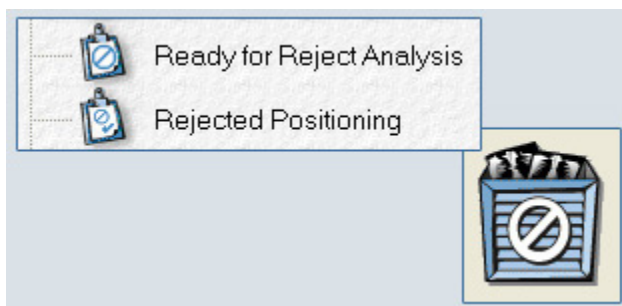
normal user, but available to authorized users for the purpose of reject analysis. When performing the reject analysis, the authorized user can view images that have been rejected due to e.g. poor quality, or images taken for quality control purposes.

Images are rejected by placing them in the reject bin. The user name and the reason for rejection are stored with the rejected image.

When rejected images are visible to the authorized users, they are marked with the "Rejected" icon. Authorized users are able to analyze, modify, delete and unreject images.

Details

- Change proposal: ABRN-5D7HQS, released in IDS5_10_2_P2.
- For more information on working with reject analysis, please refer to [section 10.3 Reject analysis](#).
- For configuration of reject analysis, please refer to System Administrator's Guide WISE.



Reject bin for rejecting images and worklists for performing reject analysis

Soft delete of images

IDS5 offers functionality that prevents images to be deleted from the system, referred to as soft delete. Soft delete works as a delete from a user perspective, but images can be reviewed by an authorized user and either restored or fully removed from the system. Images are soft deleted by placing them in the reject bin.

Details

- Change proposal: ABRN-5YFQ4N, ABRN-5D7HQS, released in IDS5_10_2_P2.
- For more information on deleting and restoring images, please refer to [section 6.8 Deleting images](#).
- For configuration of soft delete, please refer to System Administrator's Guide WISE.

B Command short-cuts

The following topics are included in this appendix:

- [General short-cuts](#)
- [Information window short-cuts](#)
- [Matrix window short-cuts](#)
- [Image window short-cuts](#)
- [Quick window short-cuts](#)
- [Stack Tool short-cuts](#)

B.1 General short-cuts

- CTRL + h — Help index
- CTRL + o — On context help
- CTRL + u — Undo
- CTRL + SHIFT + o — Options

B.2 Information window short-cuts

B.2.1 Menubar

- CTRL + f — Search
- F5 — Refresh worklist
- F6 — Fetch RIS data
- F11 — Toggle dictation system
- F12 — Dictate new report

B.2.2 Report pop-up menu

- CTRL + s — Save report
- SHIFT + CTRL + s — Sign report

B.3 Matrix window short-cuts

B.3.1 Menubar

- NUM 0 — Next hanging
- NUM , — Previous hanging
- SHIFT + c — Unread 1
- SHIFT + d — For discussion 1
- SHIFT + k — OK 1
- SHIFT + m — Set me as reading radiologist
- SHIFT + r — Set me as reading radiologist 1
- SHIFT + s — Select 1
- CTRL + SHIFT + c — Unread 2
- CTRL + SHIFT + d — For discussion 2
- CTRL + SHIFT + r — Set me as reading radiologist 2
- CTRL + SHIFT + k — OK 2
- CTRL + SHIFT + s — Select 2

B.3.2 Icon pop-up menu

- CTRL + c — Copy to clipboard
- CTRL + e — Reset to original
- CTRL + i — Invert
- CTRL + q — Open Quick window
- CTRL + NUM / — Key images: Set all
- CTRL + NUM * — Key images: Reset all

B.4 Image window short-cuts

B.4.1 Menubar

- CTRL + UP ARROW — Move up in the matrix
- CTRL + DOWN ARROW — Move down in the matrix
- F11 — Toggle dictation system

-
- F12 — Dictate new report
 - NUM 0 — Next hanging
 - NUM , — Previous hanging
 - SHIFT + c — Unread 1
 - SHIFT + d — For discussion 1
 - SHIFT + k — OK 1
 - SHIFT + m — Set me as reading radiologist
 - SHIFT + r — Set me as reading radiologist 1
 - SHIFT + s — Select 1
 - CTRL + SHIFT + c — Unread 2
 - CTRL + SHIFT + d — For discussion 2
 - CTRL + SHIFT + k — OK 2
 - CTRL + SHIFT + r — Set me as reading radiologist 2
 - CTRL + SHIFT + s — Select 2
 - LEFT ARROW — Move left
 - RIGHT ARROW — Move right
 - CTRL + LEFT ARROW — Move left (monitor)
 - CTRL + RIGHT ARROW — Move right (monitor)
 - UP ARROW — Move up to same series type
 - DOWN ARROW — Move down to same series type

B.4.2 Pop-up menu

- CTRL + 1 — 1 x 1 tile mode
- CTRL + 2 — 2 x 2 tile mode
- CTRL + 3 — 3 x 3 tile mode
- CTRL + 4 — 4 x 4 tile mode
- CTRL + a — Automatic crop
- CTRL + b — Toggle crop state
- CTRL + c — Copy to clipboard
- CTRL + d — Save as default
- CTRL + e — Edge enhance

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- CTRL + f — Fetch image
 - CTRL + g — Magnifying glass
 - CTRL + i — Window/Level: Invert
 - CTRL + k — Stop cine
 - CTRL + l — Cine loop
 - CTRL + m — MPR
 - CTRL + n — Adjust images individually
 - CTRL + r — Reset image
 - CTRL + t — 3D
 - CTRL + w — Window/Level: Step W/L
 - CTRL + z — Zoom in
 - CTRL + NUM / — Key images: Set all
 - CTRL + NUM * — Key images: Reset all
 - CTRL + NUM + — Group synchronize
 - CTRL + NUM - — Release all synchronization
 - CTRL + SHIFT + l — Cine bounce
 - CTRL + SHIFT + w — Window/Level: Step all W/L
 - CTRL + SHIFT + z — Zoom out
 - F1 — Window/Level: Min-Max
 - F1 — Window/Level: Bone
 - F2 — Window/Level: Tumour tissue
 - F3 — Window/Level: Coagulated blood
 - F4 — Window/Level: Gray brain substance
 - F5 — Window/Level: White brain substance
 - F6 — Window/Level: Scanogram
 - NUM 1 — Key images: Cine to next
 - NUM 3 — Key images: Go to next
 - NUM 4 — Key images: Fetch left
 - NUM 6 — Key images: Fetch right
 - NUM 7 — Key images: Cine to previous
 - NUM 9 — Key images: Go to previous

-
- NUM / — Key images: Set
 - NUM * — Key images: Reset
 - NUM + — Synchronize
 - NUM - — Release synchronization
 - SHIFT + q — Quadrant zoom
 - SHIFT + z — Toggle zoom
 - SHIFT + PAGEUP — Page up
 - SHIFT + PAGEDOWN — Page down
 - HOME — First image
 - END — Last image
 - UP ARROW — Fetch newer
 - DOWN ARROW — Fetch prior
 - PAGEUP — Line up
 - PAGEDOWN — Line down

B.5 Quick window short-cuts

B.5.1 Menubar

- ESC — Close Quick window
- LEFT ARROW — Move left
- RIGHT ARROW — Move right

B.5.2 Pop-up menu

- CTRL + 1 — 1 x 1 tile mode
- CTRL + 2 — 2 x 2 tile mode
- CTRL + 3 — 3 x 3 tile mode
- CTRL + 4 — 4 x 4 tile mode
- CTRL + a — Automatic crop
- CTRL + b — Toggle crop state
- CTRL + e — Reset to original
- CTRL + g — Magnifying glass

-
- CTRL + i — Window/Level: Invert
 - CTRL + k — Stop cine
 - CTRL + l — Cine loop
 - CTRL + n — Adjust images individually
 - CTRL + r — Reset image
 - CTRL + z — Zoom in
 - CTRL + SHIFT + l — Cine bounce
 - CTRL + SHIFT + z — Zoom out
 - CTRL + NUM / — Key images: Set all
 - CTRL + NUM * — Key images: Reset all
 - F1 — Window/Level: Min-Max
 - F1 — Window/Level: Bone
 - F2 — Window/Level: Tumour tissue
 - F3 — Window/Level: Coagulated blood
 - F4 — Window/Level: Gray brain substance
 - F5 — Window/Level: White brain substance
 - F6 — Window/Level: Scanogram
 - NUM 1 — Key images: Cine to next
 - NUM 3 — Key images: Go to next
 - NUM 4 — Key images: Fetch left
 - NUM 6 — Key images: Fetch right
 - NUM 7 — Key images: Cine to previous
 - NUM 9 — Key images: Go to previous
 - NUM / — Key images: Set
 - NUM * — Key images: Reset
 - HOME — First image
 - END — Last image
 - PAGEUP — Line up
 - PAGEDOWN — Line down
 - SHIFT + q — Quadrant zoom
 - SHIFT + z — Toggle zoom

-
- SHIFT + PAGEUP — Page up
 - SHIFT + PAGEDOWN — Page down

B.6 Stack Tool short-cuts

- CTRL + a — Select all
- CTRL + i — Invert selection
- CTRL + n — New stack
- CTRL + s — Save & exit
- CTRL + x — Exit

C Workstation test specification IDS5

The following topics are included in this appendix:

- [Disclaimer](#)
- [Test information](#)
- [Introduction](#)
- [Testing instructions](#)
- [Comprehensive tests](#)
- [Workstation specific tests](#)
- [Testing additional services](#)
- [Testing auxiliary equipment](#)

C.1 Disclaimer

These criteria need to be fulfilled, or the product's CE mark will be invalid:

- tests performed according to this specification must have *passed*
- the completed test protocol has been sent to Sectra for registration

Else, continued use of the product will waive all guarantees by Sectra of a safe and effective operation.

Store the completed test record.

C.2 Test information

Document number (will be filled in
by Sectra):

[All fields below are mandatory]

Computer-ID:

Name of tester:

Phone (tester):

Test date:

Signature (tester):

[All fields below are mandatory when performing a new installation of Sectra IDS5. If the PACS environment has been changed, only state the changes in hardware and software.]

Hardware	CPU:	_____
	RAM memory:	_____
	Graphics card:	_____
Software	Operating system:	_____
	Service pack:	_____
	Web browser (version):	_____
	Other applications:	_____ _____ _____ _____

C.3 Introduction

This document describes the tests mandatory after changing the Sectra PACS environment. The tests may also be used to verify a new installation of a Sectra workstation.

The purpose of the tests is to guarantee that the PACS product functions as intended, i.e. safely and effectively.

The functions of the PACS product needs to be verified whenever a change has been made to the platform, in order to keep the validity of the CE mark. The PACS products platform or environment refers to the hardware it has been installed on, the operating system and all other software. Any peripheral equipment not connected via a network, e.g. a local laser printer, also counts as part of the platform.

Please note that if tests performed according to this specification hasn't passed, the product's CE mark is no longer valid. Continued use of the product will waive all guarantees by Sectra of a safe and effective operation.

C.4 Testing instructions

This chapter explain how the tests should be performed, and states the test data needed.

C.4.1 Test user

The user performing the tests must be allowed to perform examination administration to be able to complete the workstation specific tests for IDS5/dx.net, IDS5/qa.net and IDS5/send. Contact your system administrator if the test user lacks this permission.

C.4.2 Independent test data

Note: Access to independent test data is a precondition to be able to complete the installation tests. Please turn to your system administrator if you need help collecting independent test data.

If the Sectra test image belonging to patient "Sectra, Sandra" isn't imported and accessible in the system, import it using the command `dcmsendim`, as user "wise", on the WISE host. If you run a Sectra PACS Enterprise Edition HP-UX the image can be found at `/var/opt/secra/img/`, and if you're running Sectra PACS Enterprise Edition Win or Sectra PACS Clinical Edition the image can be found at `%SECTRA%\WISE\images` typically `C:\Program Files\Sectra\WISE\images`.

If the patient "Sectra, Sandra" isn't available in the system, create this patient and import an image, which can be modified in a lot of different ways. Create a test patient with this data:

Name:	Sectra, Sandra
Personal ID number:	123456-7890
Request number:	SEC000001
Examination number:	1

C.4.3 Test method

Perform the tests according to this method:

- Enter the necessary information on the test protocols pages before the table of contents.
- Follow the instructions in the order described in [section C.4.4 Testing order](#). Start with test case #1 and continue in due order until all test cases have been performed.
- In those cases where the 'In data' column has information, enter the in data as specified in the 'In data' column.

- For every test case, compare the result with the expected result (see the column 'Expected result').
- If the result is correct, check the 'Ok' column.
- If the result is not correct, write 'FAIL' in the 'Ok' column.
- If all applicable tests have the result 'Ok', the equipment is safe to use.
- Sign the test protocol and send it to Sectra (the address can be found at the top of the document).

C.4.4 Testing order

**IDS5/dx.net, IDS5/qa.net,
IDS5/cl.net and IDS5/send**

Always start with [section C.5 Comprehensive tests](#), continue with the correct item in [section C.6 Workstation specific tests](#),

IDS5/home

Start with the correct item in the [section C.6 Workstation specific tests](#), continue with [section C.5 Comprehensive tests](#) and finish with the remaining sections if it's applicable for the current workstation.

IDS5/doc.net

Start with the correct item in the [section C.6 Workstation specific tests](#), and finish with the remaining sections if it's applicable for the current workstation. The "Comprehensive tests" test is not applicable for IDS5/doc.net.

C.5 Comprehensive tests

Nr.	Test case	In data	Expected result	Ok	Comments
1	Create a user level worklist with the following criteria. Then open the worklist.	Modality = CR Date = <today's date> Name = Today's CR	The examinations that show up in the list match the search criteria.		
2	Log out and then log in again. Open the worklist.		The examinations that show up in the list match the search criteria.		
3	Create a user level folder by right-clicking on "User worklists" in the worklist view, and selecting "New folder" from the pop-up menu. Name the folder "Test".	Test	The folder "Test" should be found beneath "User worklists".		
4	Move the newly created worklist to the folder "Test" by dragging the worklist and dropping it in the folder.		The worklist should be found in the folder "Test" and contain the same patients as above.		
5	Delete the worklist and the folder.		The "Test" folder and the worklist "Today's CR" should not be found.		

Nr.	Test case	In data	Expected result	Ok	Comments
6	Open the search dialog and search for an existing patient (any patient) that has one or more examinations including requests in the system. E.g. 19731115-1612.	Submit part of the patient id using the criteria "contain", e.g. "1115" from the previous example.	The patient's examination(s) and request(s) are visible in the Information window.		
7	Open the search dialog and perform a search for today's date.		All examinations for today should be visible in the Information window.		
8	Search for patients whose names contain local characters (e.g. for Swedish: å, ä and ö), which differs from the English language. E.g. Patient name = Åber*.	Patient's names available in the system containing å, ä, ö or other local characters.	The search should be successful.		
9	Search for 'Sectra, Sandra' in the search dialog.		The Information window and the patient Sectra, Sandra should be in focus. The examination should contain one thumbnail image.		
10	Open the Matrix window with Sectra, Sandra selected.		The image should be visible.		
11	In the Matrix window; doubleclick the image icon.		The Quick window should open and the image should be visible.		
12	Change the image's light and contrast using the mouse wheel.		The light and contrast should change in the image.		
13	Close the Quick window and return to the Information window.		The Information window and the patient Sectra, Sandra should be in focus.		
14	Double click the thumbnail image for Sectra, Sandra, to open the Quick window.		The image should be visible in the Quick window, with the new window/level settings .		
15	Insert Text, Text mark and Line annotations in the image. Also, memorize the location of these annotations, e.g. put them down on a piece of paper. You will need them later.		The image now contains several annotations.		
16	Close the Quick window.		The Information window should be in focus.		
17	Open the Matrix window and create a hanging (one monitor 1x1) containing the image belonging to Sectra, Sandra.		A hanging is now available and contains the image.		
18	Save the presentation on the user level.	Name = Sectra Type = User	A manual presentation named Sectra should be saved.		

Nr.	Test case	In data	Expected result	Ok	Comments
19	Open the image belonging to Sectra, Sandra in the Image window. Make some measurements.		The measurements should be visible in the image, as well as the annotations inserted in the Quick window. Check that the position of the annotations has not changed.		
20	Change patient and then switch back to Sectra, Sandra and the Image window.		Make sure that the annotations and measurements have been saved and are in the same places as when they were created.		
21	Log out from IDS5 and then log in again. Open the annotated image, belonging to Sectra, Sandra, in the Image window.		Make sure that the annotations and measurements have been saved and are in the same places as when they were created.		
22	Open the DDP Editor window from menu Tools in the Information window. (Not available in IDS5/send.)		The DDP Editor window should be in focus.		
23	Close the DDP Editor window and open the on-line User's guide from the Help menu.		The User's guide should be in focus.		
24	Close the User's guide and log out from IDS5.		The Log in dialog should be in focus.		

C.6 Workstation specific tests

C.6.1 IDS5/dx.net

Nr.	Test case	In data	Expected result	Ok	Comments
	Continued from the comprehensive tests				
1	Log in using the same user name as in above test. (See Comprehensive tests)		The IDS5 starts and the Information window should be in focus.		
2	Search for patient Sectra, Sandra.	Request number = SECOOOO01	The patient Sectra, Sandra should pop up containing a thumbnail image.		
3	Open the Matrix window.		The examination has a presentation, Sectra(M) with one monitor 1x1.		

Nr.	Test case	In data	Expected result	Ok	Comments
4	Open the Image window.		The Image window should open containing the image for Sectra, Sandra. The image should contain the annotations and measurements made in the section Comprehensive tests above.		
5	Set the image to Key image using Key images/Set from the pop-up menu.		The Key image mark (a flag) should pop up in the upper right corner.		
6	Close the Image window.		The Information window should be in focus.		
7	Select the first examination for Sectra, Sandra in the Information window. Right-click on the examination and choose the command Administration/ Examination administration from the pop-up menu to create a new examination.		The dialog Examination Administration is displayed.		
8	Select to copy the contents of examination 1 to a new examination for Sectra, Sandra.	Request number = SECO00001 Examination number = 2	A new examination is created for patient Sectra, Sandra who now has two examinations, each with one image.		
9	Select examination 2 and double-click the thumbnail image.		The Quick window opens containing the image for Sectra, Sandra. This image should contain the same annotations and measurements as the original image.		
10	Change light and contrast in the image using the mouse wheel.		The light and contrast changes in the image.		
11	Close the Quick window.		The Information window should be in focus.		
12	Double-click on examination 2 in the examination list to set it as base examination.		The Image window should be opened. The light and contrast settings from previous test case should be saved for the image in examination 2.		
13	Open the Matrix window.		Examination 2 should be marked as base examination and be expanded.		
14	Hang the image in examination 2 and save as System presentation.		A System presentation should be saved for examination 2.		
15	Log out from IDS5 and then log in again. Find Sectra, Sandra and double-click on examination 2.		The Image window should open and contain a system presentation with the changed window/level settings.		

Nr.	Test case	In data	Expected result	Ok	Comments
16	Open the Matrix window and delete the image in examination 2 by dragging it from the matrix and dropping it in the Recycle bin. Don't forget to empty the Recycle bin.		The image in examination 2 is deleted.		
17	Open the Information window and select examination 1 as base examination.		The Image window should be opened and contain the original image (manual presentation). The image should be marked as a key image.		
18	Reset the key image by right-clicking in the image, and selecting Key image - Reset from the menu.		The key image flag should no longer be visible.		
19	Close the Image window.		The Information window should be in focus. Examination 1 should be base examination.		
20	Delete examination 2 using the command Administration/ Delete online examination.		The examination is deleted and only one examination remains for patient Sectra, Sandra (examination no 1).		
21	Select examination 1. Create a new report for the remaining examination by right-clicking in the Report View and selecting "Create new report".		The Report view is editable.		
22	Write some text and save the report.		The new report is now visible in the Report View of the Information window.		
23	Open the Matrix window and create a hanging using as many monitors as there are on the workstation. Open the Image window.		It should be possible to see images on all monitors.		

C.6.2 IDS5/qa.net

Nr.	Test case	In data	Expected result	Ok	Comments
	Continued from the comprehensive tests (above)				
1	Log in using the same user name as in the Comprehensive tests test above.		The IDS5 starts and the Information window should be in focus.		
2	Search for patient Sectra, Sandra.	Request number = SEC000001	The patient Sectra, Sandra should pop up containing a thumbnail image.		

Nr.	Test case	In data	Expected result	Ok	Comments
3	Open the Matrix window.		The examination has a presentation, Sectra (M) with one monitor 1x1.		
4	Open the Image window.		The Image window should open containing the image for Sectra, Sandra. The image should contain the annotations and measurements made in the section Comprehensive tests above.		
5	Close the Image window.		The Information window should be in focus.		
6	Select the first examination for Sectra, Sandra in the Information window and choose the command Administration/ Examination administration to create a new examination.		The dialog Examination Administration is displayed.		
7	Select to copy the contents of examination 1 to a new examination for Sectra, Sandra.	Request number = SECO00001 Examination number = 2	A new examination is created for patient Sectra, Sandra who now has two examinations, each with one image.		
8	Select examination 2 and double-click the thumbnail image.		The Quick window opens containing the image for Sectra, Sandra. This image should contain the same annotations and measurements as the original image.		
9	Change light and contrast in the image using the mouse wheel.		The light and contrast changes in the image.		
10	Close the Quick window.		The Information window should be in focus.		
11	Double-click on examination 2 in the examination list to set it as base examination.		The Image window should be opened. The light and contrast settings from previous test case should be saved for the image in examination 2.		
12	Open the Matrix window.		Examination 2 should be marked as base examination and be expanded.		
13	Hang the image in examination 2 and save as System presentation.		A System presentation should be saved for examination 2.		
14	Log out from IDS5 and then log in again. Find Sectra, Sandra and double-click on examination 2.		The Image window should open and contain a system presentation with the changed window/level settings.		

Nr.	Test case	In data	Expected result	Ok	Comments
15	Open the Matrix window and delete the image in examination 2 by dragging it from the matrix and dropping it in the Recycle bin. Don't forget to empty the Recycle bin.		The image in examination 2 is deleted.		
16	Open the Information window and select examination 1 as base examination.		The Image window should be opened and contain the original image (manual presentation).		
17	Close the Image window.		The Information window should be in focus. Examination 1 should be base examination.		
18	Delete examination 2 using the command Administration/ Delete online examination.		The examination is deleted and only one examination remains for patient Sectra, Sandra (examination no 1).		
19	Select examination 1. Create a new report for the remaining examination by right-clicking in the Report View and selecting "Create new report".		The Report view is editable.		
20	Write some text and save the report.		The new report is now visible in the Report View of the Information window.		

C.6.3 IDS5/cl.net

Nr.	Test case	In data	Expected result	Ok	Comments
	Continued from the comprehensive tests (above)				
1	Log in using the same user name as in the Comprehensive tests test above.		The IDS5 starts and the Information window should be in focus.		
2	Search for patient Sectra, Sandra.	Request number = SECO00001	The patient Sectra, Sandra should pop up containing a thumbnail image.		
3	Open the Matrix window.		The examination has a presentation (Sectra) with one monitor 1x1.		
4	Open the Image window.		When using a two-monitor system it should be possible to see both the image and the Matrix window. The image should contain the annotations made in the section Comprehensive tests above.		

C.6.4 IDS5/home

Nr.	Test case	In data	Expected result	Ok	Comments
1	Log in using the same user name as in the Comprehensive tests test above.		The IDS5 starts and the Information window should be in focus.		
2	Select an examination and open the Matrix window.		The images should not be visible but the image icon should say 'Remote image'.		
3	Return to the Information window and retrieve examinations using the command 'Fetch remote images'.		The examinations can be opened on the workstation and the image(s) should be visible (in the Image window).		
4	Retrieve an examination using Teleradiology.		The examinations can be opened on the workstation and the image(s) should be visible (in the Image window).		
5	Retrieve to the workstation, examination 1 for patient Sectra, Sandra.		The patient Sectra, Sandra should be available on your IDS5/home workstation.		
6	Create a hanging, add annotations and set the image as key image.		The examinations including added changes are available in the system, i.e. they should be visible using another IDS5.		
	Continue with the section comprehensive tests above.				

C.6.5 IDS5/send

Nr.	Test case	In data	Expected result	Ok	Comments
	Continued from the comprehensive tests (above)				
1	Log in using the same user name as in the Comprehensive tests test above.		The IDS5 starts and the Information window should be in focus.		
2	Search for patient Sectra, Sandra.	Request number = SECO00001	The patient Sectra, Sandra should pop up containing a thumbnail image.		
3	Open the Matrix window.		The examination has a presentation, Sectra (M) with one monitor 1x1.		

Nr.	Test case	In data	Expected result	Ok	Comments
4	Open the Image window.		The Image window should open containing the image for Sectra, Sandra. The image should contain the annotations and measurements made in the section Comprehensive tests above.		
5	Close the Image window.		The Information window should be in focus.		
6	Select the first examination for Sectra, Sandra in the Information window and choose the command Administration/ Examination administration to create a new examination.		The dialog Examination Administration is displayed.		
7	Select to copy the contents of examination 1 to a new examination for Sectra, Sandra.	Request number = SECO00001 Examination number = 2	A new examination is created for patient Sectra, Sandra who now has two examinations, each with one image.		
8	Select examination 2 and double-click the thumbnail image.		The Quick window opens containing the image for Sectra, Sandra. This image should contain the same annotations and measurements as the original image.		
9	Change light and contrast in the image using the mouse wheel.		The light and contrast changes in the image.		
10	Close the Quick window.		The Information window should be in focus.		
11	Double-click on examination 2 in the examination list to set it as base examination.		The Image window should be opened. The light and contrast settings from previous test case should be saved for the image in examination 2.		
12	Open the Matrix window.		Examination 2 should be marked as base examination and be expanded.		
13	Hang the image in examination 2 and save as System presentation.		A System presentation should be saved for examination 2.		
14	Log out from IDS5 and then log in again. Find Sectra, Sandra and double-click on examination 2.		The Image window should open and contain a system presentation with the changed window/level settings.		
15	Open the Matrix window and delete the image in examination 2 by dragging it from the matrix and dropping it in the Recycle bin. Don't forget to empty the Recycle bin.		The image in examination 2 is deleted.		

Nr.	Test case	In data	Expected result	Ok	Comments
16	Open the Information window and select examination 1 as base examination.		The Image window should be opened and contain the original image (manual presentation).		
17	Close the Image window.		The Information window should be in focus. Examination 1 should be base examination.		
18	Delete examination 2 using the command Administration/ Delete online examination.		The examination is deleted and only one examination remains for patient Sectra, Sandra (examination no 1).		
19	Open the Matrix window and scan an image for examination 1.		Examination 1 now contains two images.		
20	Return to the Information window. Choose to send examination 1 to the system (server) using Teleradiology.		Verify that the examination has arrived at the teleradiology destination and contains two images. One of the images should contain annotations and measurements.		

C.6.6 IDS5/doc.net

Nr.	Test case	In data	Expected result	Ok	Comments
1	Scan several requests for Sectra, Sandra.		Verify that the scanned requests are visible and are visually correct.		

C.7 Testing additional services

The functions below might not be installed and configured on your system. If the functions should be available, make sure that they are available on the workstation you use for this test. Information about additional services can be obtained from your system administrator.

C.7.1 CAI (Clinical Applications Interface)

Nr.	Test case	In data	Expected result	Ok	Comments
1	Start the externally connected additional services (Clinical Applications).		Verify that they start as expected.		

C.7.2 DICOM Print

Nr.	Test case	In data	Expected result	Ok	Comments
1	Open the image belonging to Sectra, Sandra in the Image window and print it.		The image should be printed with an acceptable quality.		

C.7.3 Document scanner

Nr.	Test case	In data	Expected result	Ok	Comments
1	Scan a valid request with a correct barcode.		Verify that the request ends up with the correct patient and is properly formatted.		

C.7.4 Multi monitor system

Nr.	Test case	In data	Expected result	Ok	Comments
1	Open an examination with hangings for more than two monitors.		Verify that the images pop up on all the monitors.		

C.7.5 Image scanning

Nr.	Test case	In data	Expected result	Ok	Comments
1	Create an empty examination for Sectra, Sandra.	Personal ID nr = 123456-7890 Name = SECTRA, SANDRA Request-ID = SECOOOO01 Examination-ID = 2	The Patient Sectra, Sandra should have at least one empty examination.		
2	Open the Matrix window and scan an image for examination 2.		The scan should work as expected and the image should pop up as an image icon in the Matrix window.		

C.7.6 The MPR module

Nr.	Test case	In data	Expected result	Ok	Comments
1	Open a stack using the MPR module.		The MPR module should open as expected.		
2	Scroll a couple of times in the image.		Scrolling should work as expected.		

C.7.7 The Orthopedic module

Nr.	Test case	In data	Expected result	Ok	Comments
1	Open an image of a hip using the Orthopedic module. Add a template and adjust it to fit.		The Orthopedic module should start and it should be possible to add and adjust a template.		
2	Change patient and then back again to the image with the template, see above.		The template is still attached to the correct image.		
3	Delete the template and return the image to its original state.		The image is returned to its original state.		

C.7.8 CD Export

Nr.	Test case	In data	Expected result	Ok	Comments
1	Create a worklist (teaching file list) containing at the most five examinations.		A worklist (teaching file list) is available with at the most five examinations.		
2	Perform a CD-export.		The patients are exported to the CD.		
3	Verify the contents of the CD.		The correct patients and examinations should be available on the CD.		
4	Click the file <code>run_cdviewer.exe</code> which should be available on the CD.		Verify that the correct patients and images are available and can be viewed in the opened CD viewer application.		

C.7.9 Teleradiology

Nr.	Test case	In data	Expected result	Ok	Comments
1	If it hasn't been done before, create some annotations for the image belonging to Sectra, Sandra. Send the image to a recipient.		The annotations and patient information should be available where they were annotated.		

C.8 Testing auxiliary equipment

C.8.1 Microphones

Nr.	Test case	In data	Expected result	Ok	Comments
1	Use the microphone and save a dictation for the patient Sectra, Sandra.		The dictation should be saved and it should be possible to play it.		

C.8.2 Scanners

Nr.	Test case	In data	Expected result	Ok	Comments
1	Scan image(s) and/or request(s).		The scanned image(s) and/or request(s) should be available in the system.		

C.8.3 Printers

Nr.	Test case	In data	Expected result	Ok	Comments
1	Print image(s).		It should be possible to print images.		

C.8.4 Alternative login devices

Nr.	Test case	In data	Expected result	Ok	Comments
1	Register a new user and tie the log in to the device, e.g. fingerprint reader or swipe card.		You should be logged into the IDS5 and the Information window should be in focus.		
2	Log out and log in using the device.		You should automatically be logged in and the Information window should be in focus.		

C.8.5 Barcode reader

Nr.	Test case	In data	Expected result	Ok	Comments
1	Open the Search dialog and search for request number. Use the barcode reader and scan an existing request.		The Search dialog forms should be completed and the search a success.		

C.8.6 Hardware accelerated graphics cards

Nr.	Test case	In data	Expected result	Ok	Comments
1	Open an image in the Image window and do a continuous zoom (CTRL + left mouse button, drag mouse up/down).		The hardware acceleration is set correct if continuous zoom is working satisfactory.		

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