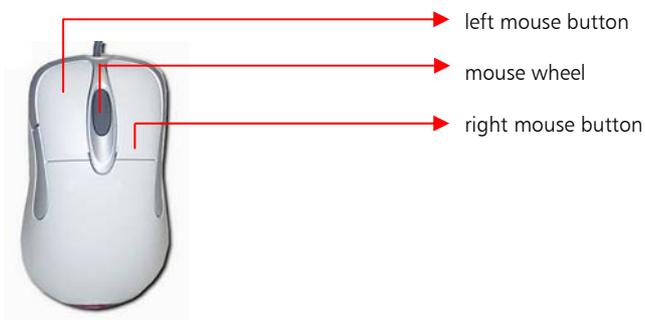


# *dicomPACS*<sup>®</sup>



**Short manual version: 5.2**

## 1. Mouse buttons – functions



### Functions of the left mouse button:

#### On the navigation bar:

- Moves scroll bar (with button held down)
- A click on a preview image opens the image in the working area
- By clicking on one of the letters  an additional application window is opened and/or is switched to the respective additional application window; the letter of the active application window is grey

#### In the working area:

- Moves image within its grid area (PAN tool)
- Applies the tool selected from the tool bar (e.g. measurement, magnifying glass, annotation etc.)

#### On the tool bar:

- Selection of function or tool
- Moves the visible part of an image in the overview image (with button held down)
- Repositions the visible part of the image by clicking on the overview image

### Functions of the mouse wheel:

#### On the navigation bar:

- Scrolls up or down the preview images

#### In the working area:

- Scrolls through a series (also within a grid area) (this is also possible by using the function "Moving through a series")
- Moves the image within its grid area (PAN tools) with the wheel held down
- Zoom: the Ctrl-key is pressed and the mouse wheel turned at the same time or the right mouse button is pressed and the mouse wheel is turned

#### On the tool bar:

- Zooms into or out of the selected image when cursor is positioned in the overview image (stageless zoom)

### Functions of the right mouse button:

#### On the navigation bar:

- A click on a preview image opens the image in the working area

#### In the working area:

- Applies the tool allocated to the button (e.g. window level, magnifying glass, etc.)
- Zoom: the right mouse button is pressed and the mouse wheel is turned

## 2. The user interface – first overview

### 2.1 Tool bar

Most important tools can be activated just by clicking on the toolbar icons. If you pause the cursor over an icon, its function is displayed as a short text field (online help).

### 2.2 Working area

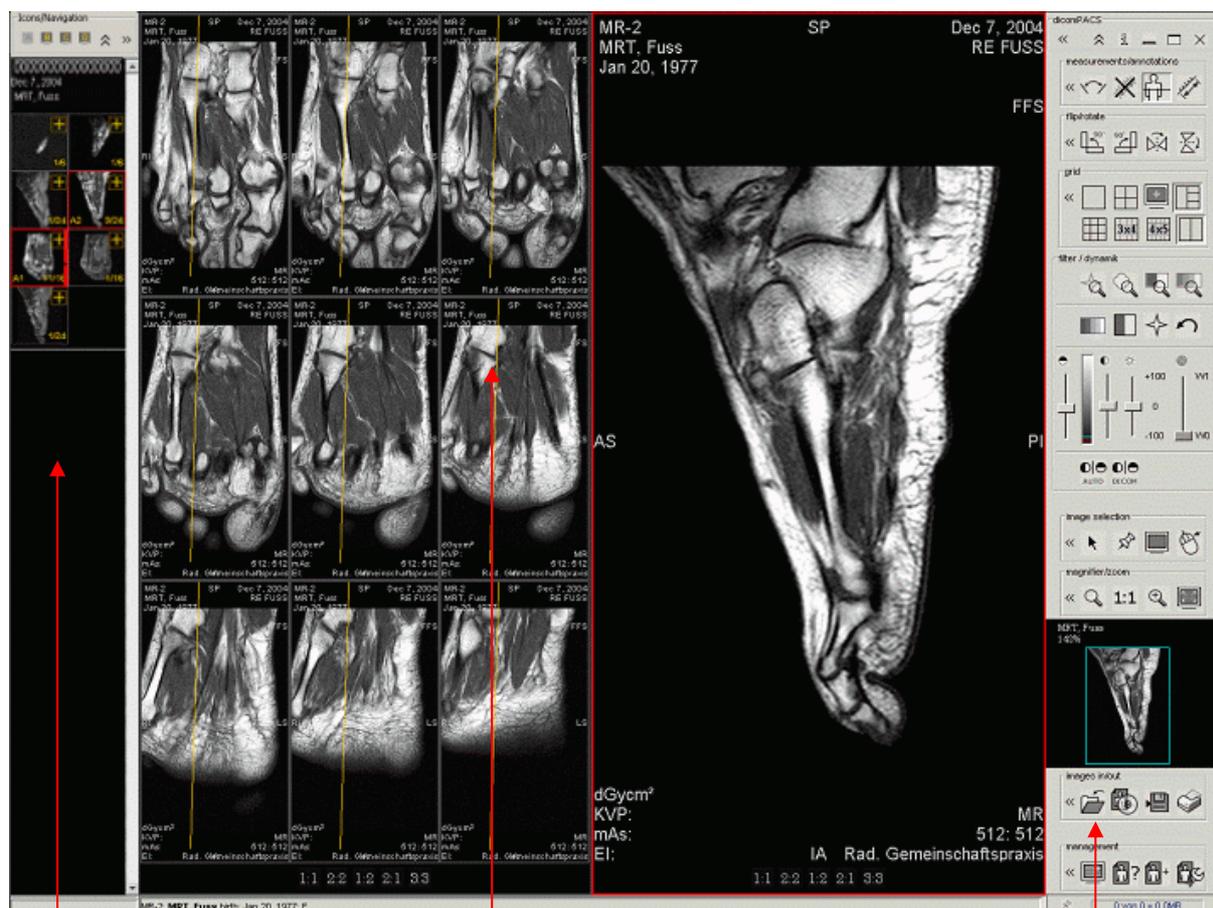
All loaded images or videos are displayed in the working area and are available for editing.

### 2.3 Information bar

This is located at the bottom of the window and displays all important information such as patient data etc.

### 2.4 Navigation bar

All opened objects (images, videos etc.) are visible on the navigation bar, even when not displayed in the working area.



Navigation bar

Working area

Information bar

Tool bar

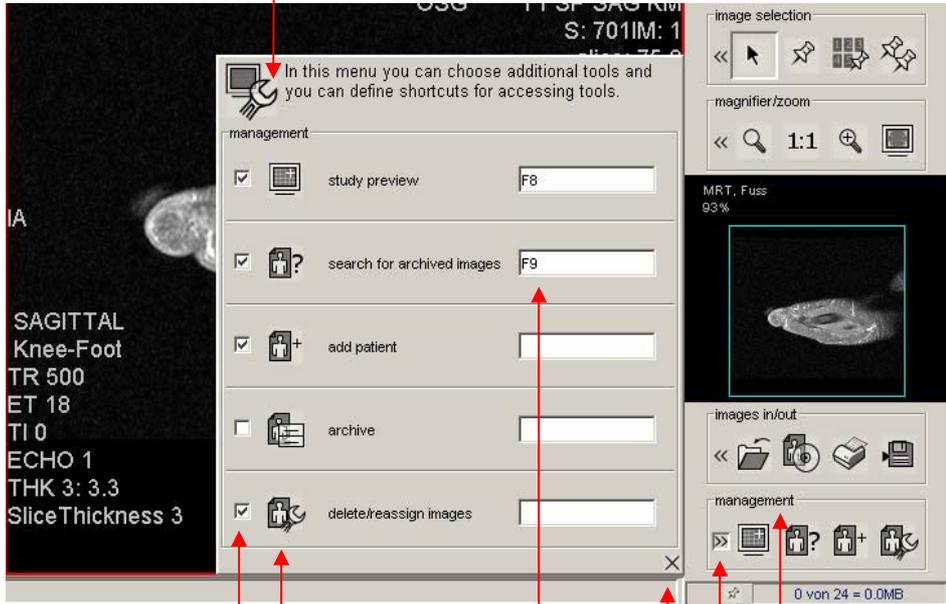
## 3. Working with *dicomPACS*®

### 3.1 The toolbar – general handling

The tool bar is divided into separate tool areas. Each tool area contains a number of tools belonging to a thematic group. The area "Administration" for example contains all tools for loading images, entering new patients etc. The area "Image Acquisition / Output" holds all tools for acquisition and output of images, e.g. video recording, scanning, printing etc.

Depending on requirements and usage, the icons visible in the tools bar areas can be hidden or shown (by ticking the box next to the icon) or allocated to a keyboard shortcut. In order to enter the desired shortcut, position the cursor in the field next to the icon and enter the shortcut via the keyboard (e.g. C or Alt+C). This is an uncomplicated way of customising the user interface and the availability of tools for individual needs.

All settings can be adjusted by clicking on this symbol  in the respective area. Tools whose icons are not directly visible on the toolbar can still be used by clicking on the icon in the **configurator** or by using a **keyboard shortcut**.



The screenshot shows a configurator window titled "management" with the following settings:

Tool (Icon)	Checked	Keyboard shortcut
study preview	<input checked="" type="checkbox"/>	F8
search for archived images	<input checked="" type="checkbox"/>	F9
add patient	<input checked="" type="checkbox"/>	
archive	<input type="checkbox"/>	
delete/reassign images	<input checked="" type="checkbox"/>	

Annotations in the image explain the configurator's controls:

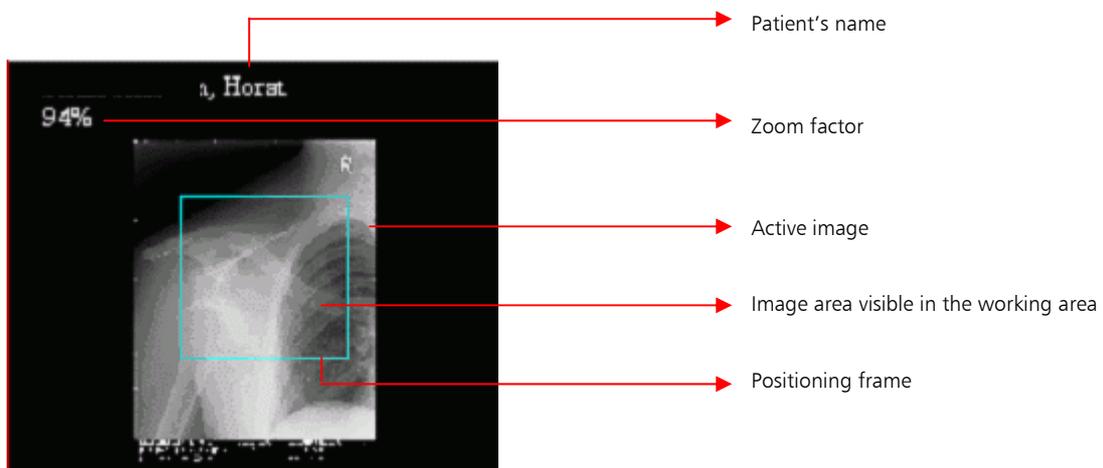
- Shows / hides icon on tool bar:** Points to the checkmark in the "study preview" row.
- Tool (Icon):** Points to the "study preview" icon.
- Keyboard shortcut:** Points to the "F8" text field.
- Shows / hides configurator:** Points to the "configurator" icon in the toolbar.
- Hides configurator:** Points to the "configurator" icon in the toolbar.

A further important element of the toolbar is the overview area. It shows the currently active image (framed red in the working area) as an overview.

A green frame in the overview area marks the part of the image currently visible in the working area, e.g. when the zoom function is being used. The visible area can be moved with the left mouse button held down. It can also be repositioned with a single mouse click in the overview area.

When the cursor is positioned in the overview area, the zoom can be adjusted using the mouse wheel.

The percentage figure in the image (here 94%) shows the current zoom factor of the active image compared to its original resolution in pixel. The example shows an image that is reduced by 6%. At 100%, a pixel on screen corresponds to a pixel in the original image (please see notes on 100 percent representation of the image).

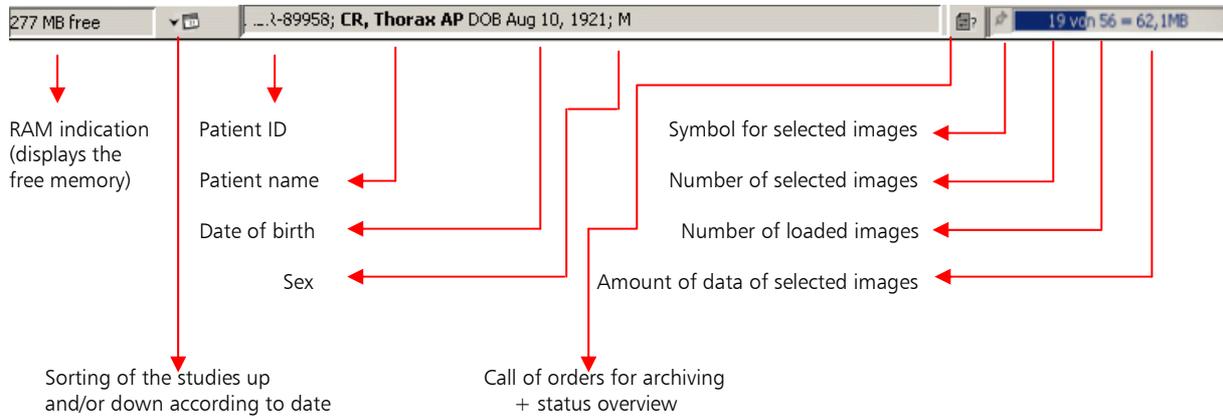


The tools described on the following pages are divided into two types requiring different handling. On the one hand, there are mouse tools such as measurements and the magnifying glass which have to be activated and can then be used with the mouse in the working area.

On the other hand, tools such as rotations, flips or display of a specific grid in the working area are operated by a simple click. Please activate the image to which you would like to apply the tool. Then apply the tool by a left mouse click or by pressing the allocated keyboard shortcut.

### 3.2 Information bar

The information bar provides the patient data for the currently loaded images and the total size of all selected images. This information is given in Mbytes and helps to estimate the amount of data to be exported to a CD or similar.



### 3.3 Navigation bar

In the navigation bar, all loaded images, series or documents are shown as preview images. Series of MR and/or CT images are shown in two columns. At a mouse click on "+" in the right upper corner a series, it is unfolded. All images of this series can be represented in three, four, six or eight columns. The advantage of this representation method is that you can navigate faster inside a series. Required images are found faster.

The thick red line indicates that it is about a series of images. The small black point in the line shows the position of the image in the series. Here the 8 image of 14 is represented.

Unfolds the series

Number of images of a series (1/131) = the 1. image of 131

Images are arranged in 3 columns (as in this example)

Images are arranged in 4 columns

Images are arranged in 6 columns

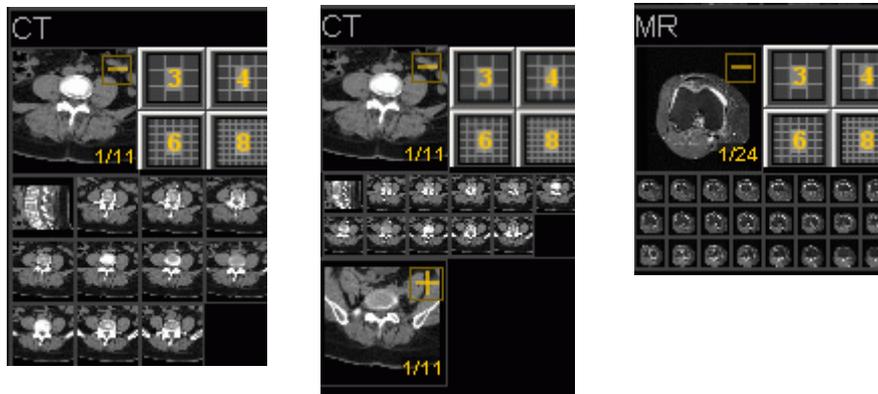
Images are arranged in 8 columns

Shuts the series

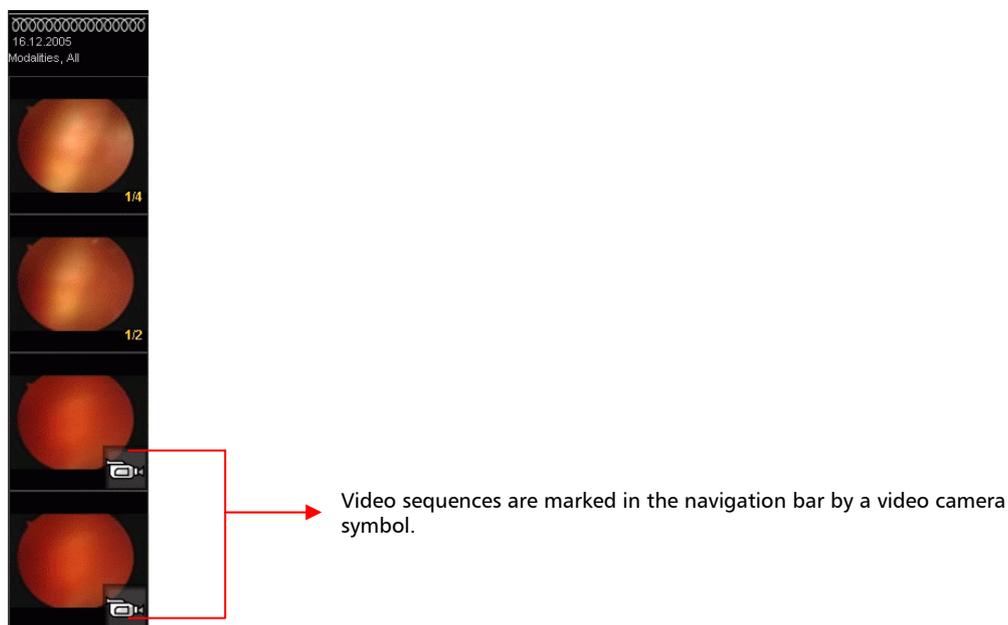
Representation of the 11 images in 3 columns and 4 lines; the 8. image is selected and is shown in the working area

Indication of the modality

Representing a series in 4, 6 and 8 columns:



Video recordings are marked in the navigation bar by a video camera symbol, which allows a better distinction between normal images and video sequences.

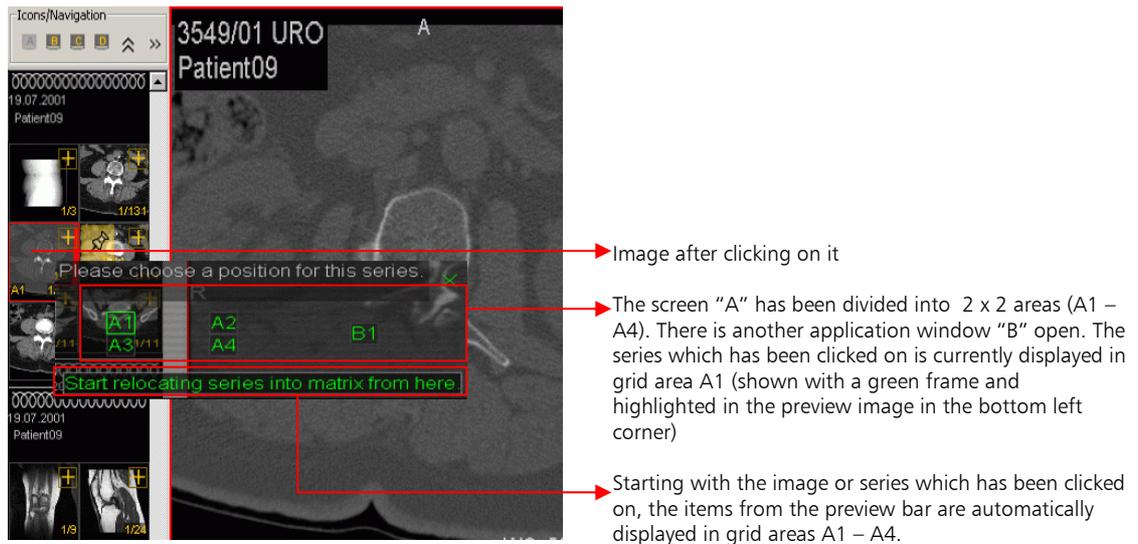


At a mouse click on a preview image, the image will be shown in a 1 x 1 grid in the working area.

If the working area is already divided by a grid, e.g. 2 x 2, 4 x 5 or others, a click on a preview image or series will produce a dialog box for choosing the grid area where it is to be displayed.

If more than one application window is open (“Opening an additional window”) the grid distribution of all open windows will be available to choose from. Thus is it very quick and easy to display any image or series in the required grid area from any of the open application windows.

There is also an option to automatically display all images or series consecutively in all available grid areas, beginning with the image first clicked on.

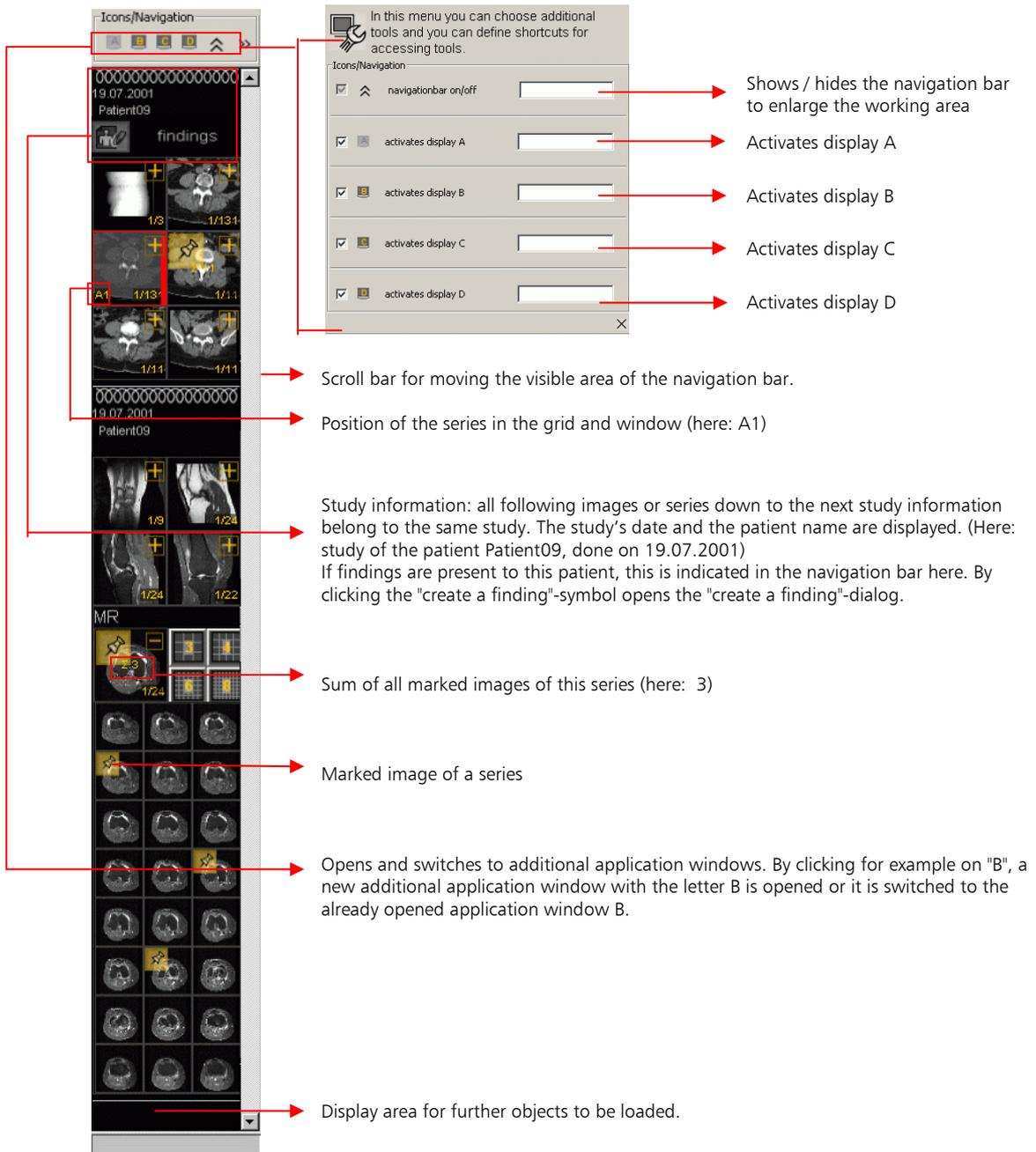


When many images are loaded, the visible part of the navigation bar may be moved using the scroll bar or the mouse wheel.

The activated pick-up tool may also be used on the preview images. When picking up a series, all images are automatically selected or if the series is unfolded, also individual images of the series can be marked. The yellow  $\Sigma$  and the number following it indicate the total number of selected images in a series.

Individual slices of a series can be also marked, as the desired images are transferred first to a grid field of the working area. Then the series panel may be used to display the images separately and select them with the pick-up tool. Each selected slice will be allocated a serial number (in yellow). The total number of selected slices in the series is displayed in the corresponding preview image in turn.

All highlighted images are available for further actions, e.g. printing, exporting, saving on a patient CD, re-sorting or similar.



In this menu you can choose additional tools and you can define shortcuts for accessing tools.

Icon	Label	Description
<input checked="" type="checkbox"/> ^	navigation bar on/off	Shows / hides the navigation bar to enlarge the working area
<input checked="" type="checkbox"/> A	activates display A	Activates display A
<input checked="" type="checkbox"/> B	activates display B	Activates display B
<input checked="" type="checkbox"/> C	activates display C	Activates display C
<input checked="" type="checkbox"/> D	activates display D	Activates display D

00000000000000000000  
 19.07.2001  
 Patient09  
 findings

1/3 1/131  
 A1 1/13 1/11  
 1/11 1/11  
 19.07.2001  
 Patient09  
 1/9 1/24  
 1/24 1/22  
 MR  
 1/24  
 1/24

- Scroll bar for moving the visible area of the navigation bar.
- Position of the series in the grid and window (here: A1)
- Study information: all following images or series down to the next study information belong to the same study. The study's date and the patient name are displayed. (Here: study of the patient Patient09, done on 19.07.2001)  
If findings are present to this patient, this is indicated in the navigation bar here. By clicking the "create a finding"-symbol opens the "create a finding"-dialog.
- Sum of all marked images of this series (here: 3)
- Marked image of a series
- Opens and switches to additional application windows. By clicking for example on "B", a new additional application window with the letter B is opened or it is switched to the already opened application window B.
- Display area for further objects to be loaded.

### 3.4 The working area

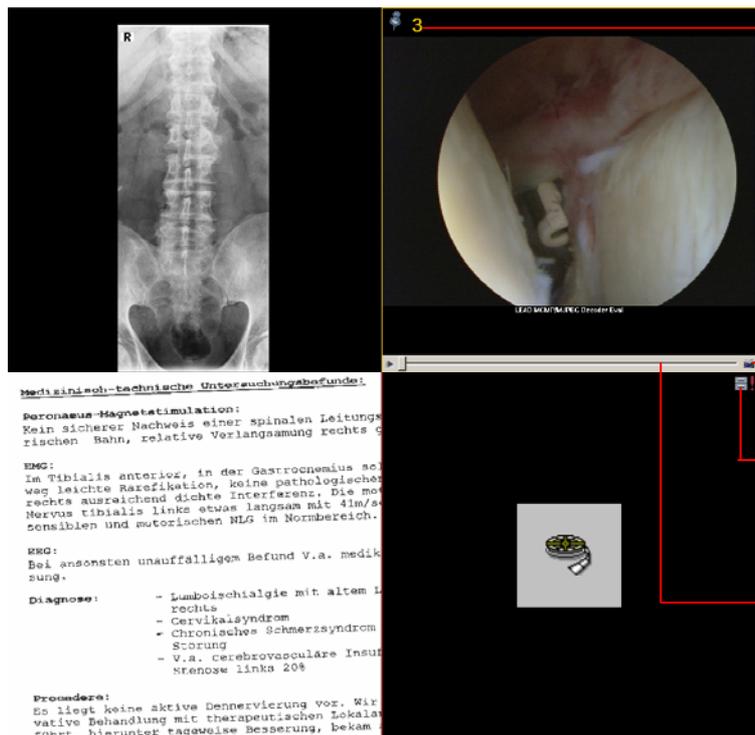
The working area is used to display the loaded images. Additional information on the images, such as patient name, date of birth and examination details may be shown (see tool "Show annotations"). The annotations are configured by an engineer.

The tools and settings from the tool bar always apply to the currently "active" image. An image is activated by a mouse click on it or by positioning the mouse cursor over it and turning the mouse wheel. A red frame around the image confirms its active status.

A yellow number represents a selected image and indicates the image's position within all currently selected images of its series. Therefore single images, e.g. digital X-rays, are always marked with a yellow '1'.

If an image is magnified in its grid area it may be moved within this area with the left mouse button held down.

Several symbols giving additional information about an image may be shown near the upper or lower edge of an image:



Number indicating the position of the image within the set of images selected from the series.

Single images may be taken from a running sequence by clicking on the camera symbol. The images are displayed immediately afterwards in the order of taking them. The new single images have to be assigned patient data before archiving them.

Indicates that this image has not been archived and patient data may have to be assigned first.

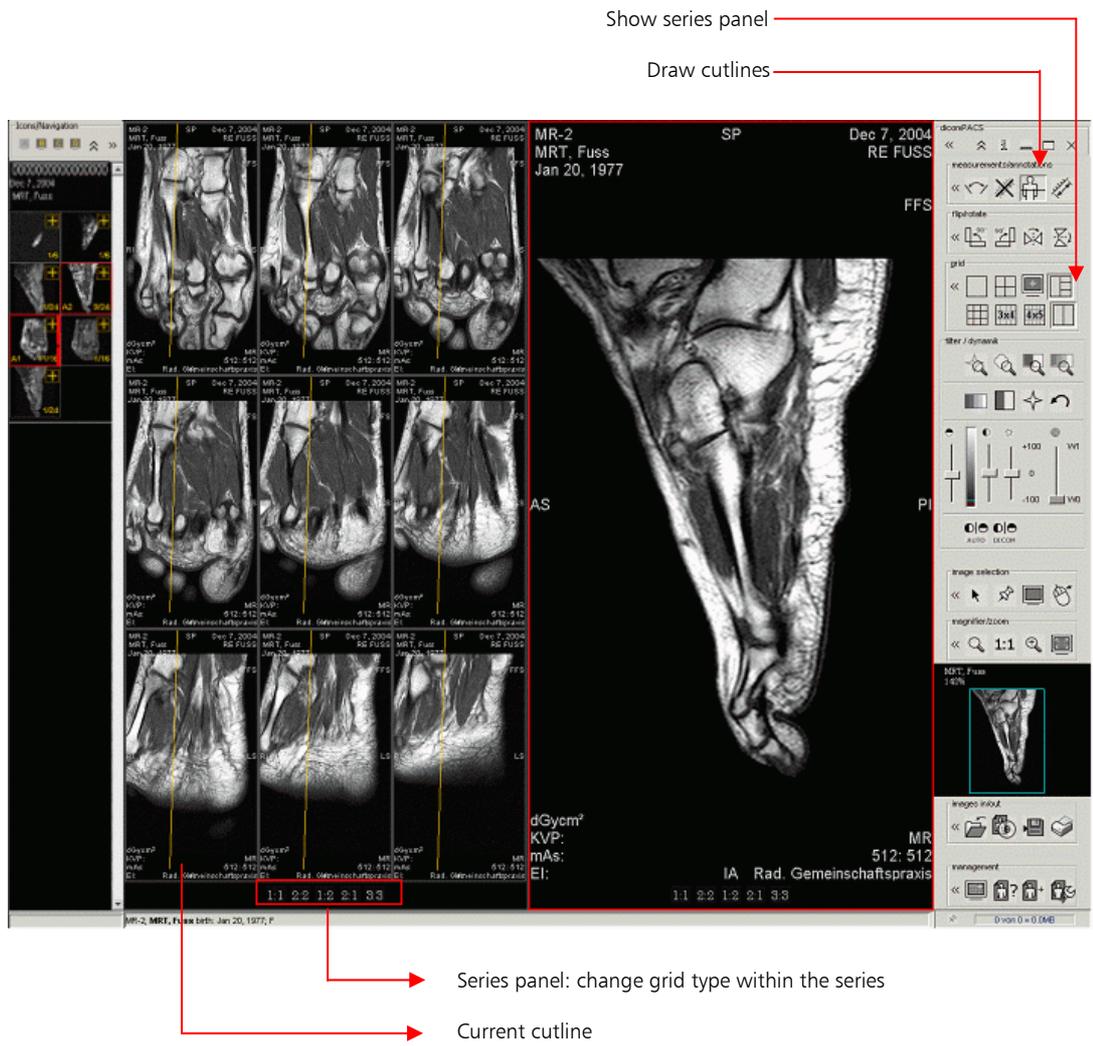
This is a symbol for a video sequence. Start and stop the sequence by clicking on the arrow or pressing the space bar.

**Medizinisch-technische Untersuchungsbefunde:**  
**Peroneus-Magnetstimulation:**  
 Kein sicherer Nachweis einer spinalen Leitungsrückbildung, relative Verlangsamung rechts der motorischen Bahn, relative Verlangsamung rechts der sensorischen Bahn.  
**EMG:**  
 Im Tibialis anterior, in der Gastrocnemius seitenvergleichsweise leichte Rarefaktion, keine pathologische Interferenz. Die motorische Leitung des N. tibialis links etwas langsamer mit 41m/s. Sensiblen und motorischen NLS im Normbereich.  
**EMG:**  
 Bei ansonsten unauffälligem Befund v.a. medikationseffekt.  
**Diagnose:**  
 - Lumboschialgie mit altem L4/5 rechts  
 - Cervikalsyndrom  
 - Chronisches Schmerzsyndrom  
 - V.a. cerebrovasculäre Insuffizienz  
 - V.a. cerebroschialgie links 20%  
**Prognose:**  
 Es liegt keine aktive Denervation vor. Wirbelsäulenchirurgische Behandlung mit therapeutischen Lokalanästhetika führt hierunter teilweise Besserung, bekam

There are two main tools available for working with CT and MR image series in the working area: the series panel and the tool "Draw cutlines".

If one or more series of images are displayed in the working area grid and the mouse cursor is positioned in the respective grid area, the mouse wheel can be used to scroll through the series (also in a grid area).

In addition, the series can be distributed within any selected grid, so that each image is displayed. To activate this function, please click on the icon "show series panel" in the grid area. To show cut lines in corresponding images, please use the icon "Show cut lines".



An image can be moved within its grid area with the left mouse button held down (PAN tool).