SixPACS
Teleradiology Management System

User Guide
Viewer Supplement

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Overview

This document describes the SixPACS image viewer and its functionality. The viewer allows the user to display and manipulate exam images from within the SixPACS Teleradiology Management System. The contrast, zoom and other display characteristics can be changed by selecting the appropriate tool. Also, the viewer allows for up to 4 panes, to provide the ability to view comparisons of previous exams. Figure 1 shows an example of the SixPACS viewer.

Figure 1 – The SixPACS Viewer

The viewer uses an ActiveX control to display the images. This requires that the control be installed on the computer. The first time the viewer window is opened, a dialog box will prompt to install this control.

SixPACS Viewer Layout

The SixPACS Viewer can be broken into 3 major sections. The top of the window provides a toolbar, for manipulating individual images. The middle and main section of the window displays up to 4 images, each in their own viewport. Finally, the bottom section displays a list of thumbnail images, and a matrix for placing the selected thumbnail into a particular viewport.

The Toolbar

Selecting a tool from the toolbar changes the current tool to the one selected. The tools are activated by holding down the left mouse button over a viewport area (see The Viewport below). The following tools are provided:

Tool		Description
Contrast	**Contrast**	Changes the contrast and brightness (window level) of the image.
Zoom	**Zoom**	To zoom in and out of the entire image.
Magnify	**Magnify**	To magnify a small area of the image, able to roam over the entire image.
Pan	**Pan**	To pan around the image area that is larger than the currently available screen space (the viewport size).
Measure	**Measure**	To perform image measurements: pixel Houndsfield value, distance between two points, or angle between two lines.
Sharpness 0	**Sharpness**	Modifies the amount of sharpness applied by the sharpness filter. The scale runs from 0 to 100, where zero is no sharpnesss, and 100 sets the filter to sharpen very strongly.
Rotate 90	**Rotate 90**	Rotates the image clockwise by 90 degrees.
Flip Horiz.	**Flip Horiz.**	Flips the image horizontally.
Flip Vert.	**Flip Vert.**	Flips the image vertically.

Table 1 - Toolbar Buttons

The Viewport

The Viewport displays the various images to be examined. This main section can be configured to display 1, 2 or 4 viewports, to allow for comparison of images (see Thumbnail section below). Each viewport can be manipulated individually by selecting the tools from the toolbar above. Additional tools can be selected by right-clicking anywhere within the viewport area.

Thumbnail Section

The bottom section of the viewer window contains a thumbnail listing of all images that were previously selected (Fig. 2). This may include either a single exam, or multiple comparison exams. Placing the mouse pointer over any thumbnail will display the date of service of the exam in which the image was taken. To the left of the thumbnail listing, is the matrix control. This control is used to determine how many viewports are displayed in the main section of the viewer. The possible options are 1 image (1x1), 2 images (1x2) or 4 images (2x2). A yellow border surrounds a selected viewport. This border dictates which viewport will load an image, if one is selected from the thumbnail list.
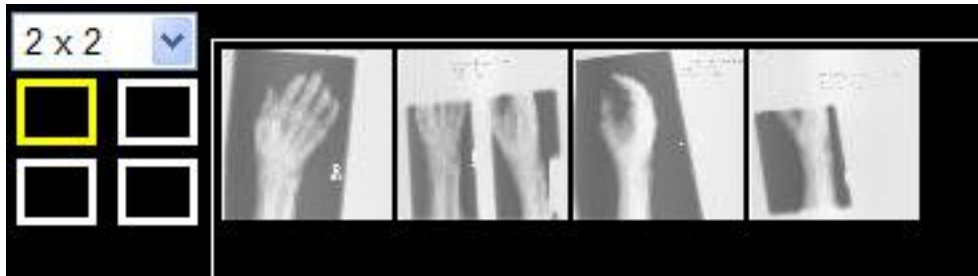

Figure 1 – Thumbnail Section

Images can be selected in one of two ways. Dragging a thumbnail and dropping it over a "viewport" on the matrix to the left of the thumbnails will cause that image to load in the respective viewport in the main window. An image can also be loaded by clicking on the desired "viewport" to the left of the thumbnails, and double-clicking on the thumbnail image.