



DR

Direct Radiography System

# WhiteCap

Acquisition and Display Software

Digital Radiography  
Made Simple

# Operations Manual

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# Welcome!

Thanks for Choosing SimonDR.

We hope that you find the system very easy to use.

Should you need additional help you can call 800-835-3852

or call your installing service organization.

Normal service hours are from 7am to 9pm EST.

Emergency service is available 24 hours and at no cost during the first two years.

There is never a charge for remote support during normal business hours.

WhiteCap allows you to enter non-emergency support questions and ideas directly to the programmers and senior management without leaving the software.

## **Introduction**

The SimonDR DRM system is powered by WhiteCap Image viewing and processing software. It is designed to be simple and easy to use. To start WhiteCap, double click on the WhiteCap icon on the desktop or by going to the Start>Programs>SimonDR menu.















## **Become Familiar with WhiteCap**

When WhiteCap opens, observe the layout. On the upper left side is the patient list. On the lower left side is the imager connect and test window. On the right is the thumbnail window and in the center is the image viewing area.

To fully utilize your software you should always be connected to the Internet via a high-speed connection. If connected, you will be greeted by the welcome screen. Also, in this welcome screen are basic operating instructions and help for new users. Here you can also find press releases and the latest news.

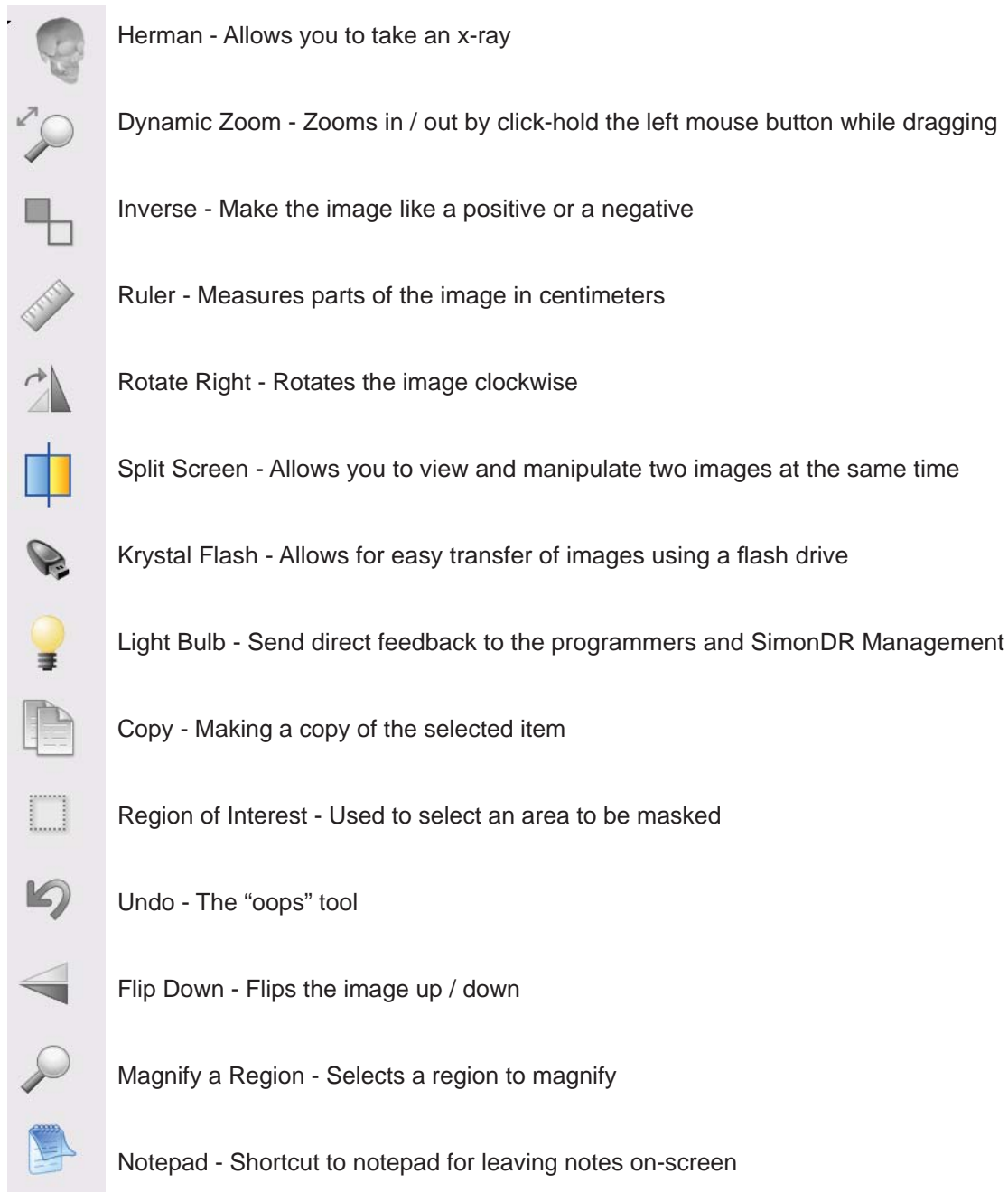
## The ToolBar - “RonButtons”

Just left of the center is the toolbar - the “RonButtons.” The tools can also be accessed by pressing the middle mouse button (wheel) once while viewing an image.

	File Open - Opens files manually
	Window / Level - Controls the brightness and contrast or amount of grayscale
	Grab Tool - While zoomed, grabs the image and moves it around the screen
	Sharpen - Sharpens an image
	Annotation Tool - Enables you to annotate images
	Rotate Left - Rotates the image counter-clockwise
	Speedy CD - Allows for easy complete or selective CD Burning
	Email Tool - Allows a user to easily email an image by JPEG
	Cut - Used for advanced operations
	Paste - Generally not used
	Crop / Collimation - Masks DICOM images or crops JPEGS
	Redo - The “un-oops” tool
	Flip Right - Flips the image right / left
	Print - Prints images to any standard windows printer

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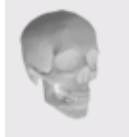
### To Close out of WhiteCap-

The red X in the right top corner of the screen has been disabled in WhiteCap to prevent imager control issues. To close Whitecap go to File>Exit Application.

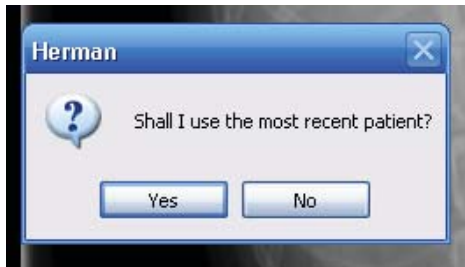
## The Basics

### Take an X-Ray

To take an x-ray, click on “Herman.” Herman is the 3-D grey image of a human skull.



You will be prompted to x-ray the most recent patient or not. Choose “no” if this is your first time taking an x-ray.



The patient data window pops up. Notice that some of the fields are highlighted in blue. The highlighted fields are the critical fields that cannot be left blank. Enter the necessary client information.

When finished entering the client demographics, click on the save new client or update button.

After clicking the update or save new client button, the client information appears in the middle of the screen. This is the “client selection” window. If there are multiple clients with the same name, they will appear in this list. Click on the appropriate one and the patient selection window will appear.

Enter the patient’s demographics. Click on update in that window when finished. Note that after clicking on update, a tab appears with the patient’s name.

If the client has multiple patients, all of their patients will appear as tabs after being entered. Select the appropriate one, or select the New... tab and enter a new patient. When finished entering a new patient or changing information for a current patient, click on the update button next to the patient. Prepare and measure the patient as you would normally. In the view selection field, choose the view that you will need. In the measurement selection field, select the measurement you acquired. Take care to measure the area of interest.

For example; if you are interested in the lower abdomen, perform the measurement in that area. If your interest is in the abdomen near the diaphragm, measure that area.

Measure after you put the patient in the position in which you intend to acquire the

image. If you measure the abdomen with the patient standing, you will get a larger centimeter measurement than if you measure the patient in the lateral or VD position.

In the lower right corner of the patient window you will see the appropriate kVp and MaS (or time) settings. Set your x-ray machine accordingly. Prior to taking an x-ray, click on the “verify data and take x-ray button,” or simply hit “enter” on the keyboard. This button checks that all of the necessary information has been entered and that the imager is connected and ready. If everything is ok, a window will pop up showing “waiting for x-ray.” This will remain on the screen until the imager captures an image.

### **Positioning, Positioning, Positioning - Collimation, Collimation, Collimation**

Digital x-rays cannot fix poor positioning or poor collimation. Because the quality of digital images are affected more so than analog images by proper collimation, always collimate tightly and only on the area of interest. When taking a thorax image, center and collimate over the heart. In other words position the patient appropriately and collimate on the area of interest as tightly as possible without cutting off any of the area of interest. Center the anatomy of interest in the light-field.

When ready, depress the foot-switch normally. Normal operation of a foot-switch is to depress it half-way and wait for the ready light on the x-ray generator before pressing it the rest of the way. From the time you press the foot-switch initially, you will have 10 seconds to generate an image. After the ready light has been displayed, normally you will then have another seven seconds before the imaging window will process what it has acquired. If no x-ray has been acquired, the imager will acquire nothing and process a white image.

Once the x-ray has been generated, a preview image will appear in approximately two to four seconds. From this preview, you can see positioning or motion artifacts, and either prepare the patient for the next view or return the patient from radiology. Approximately 15-18 seconds after the preview image is viewed, the image will be ready for diagnosis and manipulation (if necessary.)

To take a second view or repeat an x-ray of the same patient, click on the “Herman” icon and answer “yes” when prompted to x-ray the same patient. Change the view and measurement and set the x-ray machine with the appropriate exposure factors. Click on the “verify...” button and take the x-ray as described above.

You will find in the time that it takes to shoot and display one analog image, you can usually capture six digital images.

### **Adding History to an Image...**

WhiteCap 1.4 now offers the ability to include history files on patient images. This allows the user to add key information to the image without having to look through the paper file. After history has been added to an image it is included within the DICOM header. History is also contained in the DICOM header when using SpeedyCD, Krystal Flash and DICOM Send.

Patient History can be added two ways. History can be added when the image is initially taken and can also be added to an older image that has already been taken. History files can be updated at any time. Each image can contain its own History file if desired.

#### Adding History to a new image:

Enter the required information in Herman. Save the information. Click on the History button. Open Append New History to write new History. Use Existing History to view previous history if applicable. Click on the save button. Repeat as needed for each image requiring history to be added in that particular study. Once history is added, all subsequent images will have that history.

#### Adding History to a previously taken image:

Click on the desired image. It will load in the Imager Viewing Area. Go to the Tools menu. Click on Medical History. Open Append New History to write new History. Use Existing History to view previous history if applicable. Click on the save button. Repeat as needed for each image requiring history to be added in that particular study. Once history is added, all subsequent images will have that history.

## View a Previously Taken X-Ray

In the patient list on the left, click on the “plus sign” next to the patient name and then click on the correct date folder. Immediately, the first image in the series will be displayed on the screen as last viewed and on the right side of the screen, the other images in the series appear as “thumbnails.” To view the other images in the series, click on the appropriate thumbnail.

## Common Viewing Operations

**Rotating an image** is done in 90-degree increments using the rotation buttons. Once an image is rotated, its rotation is automatically stored within the file. For rare reasons, an image can be flipped on a vertical axis and flipped on a horizontal axis. Most users will not ever rotate an image around the center and never flip an image on an axis.

**Window and Level** (technical terms that for practical purposes means brightness and contrast) is done through the window and level tool. Select the window and level tool and move the mouse into the image viewing window. Clicking and holding the left mouse button down while moving the mouse will change the window and level settings. Move the mouse slowly and carefully. Once a desired “look” is achieved, release the mouse button. Window and level settings are saved with the image automatically by default.

To turn off automatic saving of window and level settings click on the edit menu and select “use file properties.” By default, this menu has a “check mark” next to it which means that it is on.

It is important to know that when sending a DICOM image out on CD or other method, that the properties file is not sent with it and therefore the image that is being sent will be initially viewed in its default state. Saving window and level settings is proprietary to WhiteCap and will only work on your system. Because the chances of viewing the image on the exact monitor that you are using with the same brightness and contrast settings is pretty slim, the window and level settings are not saved when sent out. Additionally every user will most likely prefer different settings.

**Zooming in to the image** can be accomplished two ways:

One way is continuous or “real time” zoom is accomplished by selecting the Dynamic Zoom icon and placing the cursor over the area of interest. Left click and hold while moving the mouse vertically (up & down) to increase and decrease the zoom of the image, while maintaining the center of the area of interest on the image. To view other areas of the zoomed image, select the “hand” icon, place the cursor over the image, left click and hold while moving the mouse which will allow you to view every area of the zoomed image.

Another way to view is: Select the Zoom Tool and using the mouse, click and hold with the left mouse button and “circle” the area you want to see enlarged. Lift your finger off of the mouse and the zoomed area will instantly appear on the screen larger.

**Annotating an Image** is done by selecting the annotation tool. When this tool is selected, a small annotations toolbar appears. To type text, click on the “A” from the menu and then click within the image approximately where you want the text. While holding down the left mouse button, drag your cursor down and to the right to create your box that you will type in. Type the text. To draw an arrow, select the arrow tool and click and drag with the left mouse button in the image.

Annotations are permanently saved in the same manner as window and level settings. They “burn in” only when sending an image by email or DICOM send. To duplicate, annotations on multiple images click on the lower left icon on the annotations tool bar then click save. Open the next image and click on the lower right icon on the annotations toolbar and select the “.ddo” file. This will apply the saved annotations to the new image.

**Cropping An Image** (this is like artificial collimation) is done by selecting the “region of interest” tool and clicking and dragging to create a box around the area of interest. Everything outside of this area will be deleted. Don’t panic – you can’t save cropping settings to the original image. Once an image is cropped, it can only be saved by using the “save as...” function in the file menu and saving the image as a jpeg. The cropped area will appear as you last left it, but this can be turned off if necessary.

**Negate An Image** reverses the colors of an image. Doing this can often reveal anatomy that might otherwise be overlooked.

**Sharpen** takes an image and uses a set value to sharpen the view of the x-ray. Sharpening makes certain things clearer than an unsharpened image.

## Other Useful Tools

**Burning a CD is Easy.** WhiteCap's "Speedy CD" is great for sending all of the images in a patient's folder, selective sending a few images, or for archiving as well. To create a CD for a patient, insert a blank CD-R into the CD writing drive on the server. You are given the option of selectively burning or burning all of the patient's images.

If you choose to burn all of the images, the CD will be ejected in a few minutes with both the DICOMs and JPEGs on the CD. Any annotations will be burned in during CD writing. Both DICOM images and JPEG images are written to ensure that if the person viewing the CD does not have a DICOM viewer, then they will still be able to view the JPEG images on any computer.

To burn selectively, when asked if you wish to burn all images click "No." This will bring up a box with your images inside and check boxes beside them. Click on the image you wish to copy to the CD and once your choices are made click OK. Follow the steps that follow to burn your images to the CD.

**Emailing an Image** is very easy. Simply open the image you want to send by selecting the desired x-ray from the thumbnail on the right side. Click on the "Email Pictures" tool and type your email address in the "from" box. Type the recipient's email address in the "to" box. Type a message in the subject line and a short message to the recipient. This interface sends JPEG images compressed in a zip folder. While JPEG images are not to be considered diagnostic, they are certainly very good and in most cases, diagnosis from these images is not a problem.

When sending multiple images, follow the steps above. When ready to add the next picture to be sent, simply click on the thumbnail of the desired image and when it is in the viewing area, click on it to add it to the list of images to be sent.

**Viewing Two Images** is done by clicking on the Split View Icon. The active image is duplicated on screen and it is now possible to manipulate the active image while looking at the original image. The active image is determined by the red box around the image. To make either side active, simply click on the image and the red box will indicate that you are now working with the active image. To view two different images side-by-side, simply click on a patient's image folder and the appropriate image thumbnail.

To turn off Split View, click on the split view icon. The active image will become the only image on screen.

**Krystal Flash** is the tool that helps copy select files easily from your computer to a USB Flash Drive. This is helpful for transferring copied files from your computer to a laptop or other device that can read a USB Flash Drive.

## Advanced Operations

**DICOM Send** is done two ways. You can send every image you take, send a few images selectively, or both. To send all images see below. To send a few images at a time via DICOM send, open the patient's images and click on Tools>Send to DICOM Server.

Click on the thumbnail for each image you want to send and then click on the open image. Once the image selection process is done, type the AE Title you wish to use for yourself (WhiteCap is inserted by default.) Then enter the recipient's AE Title, Port Number, and IP address in the appropriate fields.

Click on Send. **Caution!** DICOM files are large, and the sending process can take a few minutes or more than one hour depending on the number of files you are sending and your connection speed.

It is a good idea that you send an email to the recipient at the PACS end after sending the images so they know that the images have been sent and how to contact you. Additionally, add information about the study in the email so the recipient is better able to make a diagnosis.

## **Administrator Control Panel (ACP):**

Only advanced users should utilize the ACP. Changing data contained within this section can cause serious errors.

The Administrator control panel (ACP) can be accessed by going to <c:\program files\SimonDR\WhiteCap\WhiteCapConfig.exe>. The ACP is where the constant data and many options are kept.

**Layout:** Nothing on this tab should be changed without aid of a SimonDR technical representative.

**Storage:** Altering any information on this page can cause serious damage to your system and it will be unrecoverable, so please don't use this tab without SimonDR.

**Facility:** This is where you add and remove your facility's constant data. Do not click on Sends Emails. This check box is used only during the first weeks of operation by SimonDR.

**Doctors:** This is where you add and remove Doctors.

**Technicians:** This where you add and remove technicians. Let's hope the name you are removing is not your own.

**Study:** Should always read radiographic imaging.

**Annotations:** This is where you set the default font size and position for your right and left marker. You really should never need this tab.

**DICOM Server:** This is where you opt to send every image to a PACS system or not. You can still send images to any PACS server by choosing to selectively send images from the Tools menu whether or not this option is used.

**Processing options:** This is where different options on how the images are viewed and processed are set. Changing anything in this tab will result in the images displaying abnormally and a call to SimonDR technical support would be needed. Please do not touch these.

**Generator:** This is where the generator controls can be set. Changing anything in this tab will result in the imager to work abnormally and a call to SimonDR technical support would be needed. Please do not touch this.

## Troubleshooting

Reset your imager. Close WhiteCap and turn the imager off by using the “reset” switch. Wait five seconds. Turn the imager back on. Click on “Test Imager.” Wait 10 seconds for the progress bar. If you see the progress bar then you will then be able to take an image.

If the test imager is not available and the “Connect” button is not grayed-out, follow the above procedure exactly.

If after resetting the imager a second time and it still does not work, the imager may not have power. Test this by turning off the x-ray machine. Step on the footswitch and listen for the imager to make a click noise. It is hard to hear this click, so make sure the room is quiet.

If you do not hear the click of the imager, then check that the power cord is still plugged in. The imager power cord plugs into the white reset switch which goes back to a small black transformer and then to the imager in the bottom.

If you do hear the click sound, then the USB cable connecting the imager to the server could be disconnected. Trace this all-the-way back to the imager. If everything appears to be connected, move the USB cable to a different slot on the computer. Reset the imager and then start Whitecap and click on Test Imager.

If all of the above does not work, call technical support at 800-835-3852.

Should you wish to see the log of your x-rays, there is a log file which logs all x-rays taken by your machine. To access the file go to Start>My Computer>Local Disk (C:) >Documents and Settings> Your computers Administrator>Application Data>DMMD>Whitecap>Logfiles. Here you will find the folders containing the logs.