[LOGO]	Radiology Research Ultrasound Division	SOP #	001
		Revision #	
		Implementation Date	7/8/22
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SOP Owner	Susan M. Schultz, RDMS, FAIUM	Approval	

Standard Operating Procedure

1.   Purpose: To schedule time on the ultrasound scanner and/or the photoacoustic unit in SAIF

2.   Scope: For all Faculty, staff and/or students officially approved to work in the SAIF ultrasound room on SAIF equipment.

3.   Prerequisites: All users must be included in the PI's IACUC approved protocol and approved SAIF application. In addition prior training on the Visualsonics ultrasound scanner required and documented.

4.   Responsibilities: SAIF ultrasound staff maintain and manage the SAIF calendar.

5.   Procedure: contact ultrasound staff member responsible for maintaining the calendar and provide the date, start time, and end time desired. It is helpful if you can give two options in case your first preference date and times are not available.

6.   References: Visualsonics Owner's Manual

7.   Definitions: SAIF- Small Animal Imaging Facility

Standard Operating Procedure

1.   Purpose

Turning your system On and Off

2.   Scope

For all Faculty, staff and/or students officially approved to work in the SAIF ultrasound room on the Visualsonics 2100 ultrasound and photoacoustic scanner.

3.   Prerequisites : In house training on the Visualsonics Ultrasound Scanner.

In house training on the Visualsonics Ultrasound Scanner.

4.   Responsibilities

Identify the personnel that have a primary role in the SOP and describe how their responsibilities relate to this SOP. If necessary, include contact information.
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5.   Procedure :

Operating instructions to turn on the Visualsonics Ultrasound Scanner.
Make sure unit is plugged into a wall electrical outlet without an extension cord.
Flip the breaker switch located on the rear of the unit to ON.
Then switch the toggle switch on the scanner to initiate the inboard computer.
The toggle switch will not stay in that position as it will return to a neutral position.
As the computer starts the operating system, decide which transducer you want to use and plug it into the only active port located under the keyboard.
Slip the transducer connecter into the open slot and turn the knob clockwise to activate.
Secure transducer in the holder on the side of the unit.
Confirm you have an image and the proper frequency transducer has been initialized.
Begin to scan.

6.   References

Visualsonics Owners Manual

Standard Operating Procedure

1.   Purpose

You can copy any number of studies from your Vevo 2100 Imaging System to a location on your network or to an external storage device.

2.   Scope

For all users of the Visualsonics 2100 platform

3.   Prerequisites

Ensure that the Vevo 2100 Imaging System is connected to the external storage location through the appropriate ports on the rear panel of the system.

4.   Responsibilities

Identify the personnel that have a primary role in the SOP and describe how their responsibilities relate to this SOP. If necessary, include contact information.

5.   Procedure

Copy a study from:
1. In the Study Browser, select the names of the studies that you want to copy. ƒ Press Select to select one row ƒ Press CTRL + Select to select a collection of individual rows ƒ Press Select + SHIFT +scroll+ Select to select a range of rows

2. Press Copy To . The Copy Study To window appears.

3. In the folder browser, browse to the location where you want to copy the study and select the folder.

4. If you need to create a new folder to contain the file you are copying: a. Click New Folder. b. Type the name of the new folder and click OK. Chapter 26 Rev 1.1 VisualSonics Vevo 2100 Imaging System Operator Manual 153 Chapter 26: Copying, deleting and importing The system adds a new folder inside the selected folder in the folder browser window.

5. In the Options section, in the Save As box, if you want to change the name of the study, type the new name.

6. Click OK. The system: a. Copies the studies to the folder you selected. b. Displays the Copy Study Report box to summarize the details of the copy process. Click OK to complete the process. c. Returns you to the Study Browser.

6.   References

List resources that may be useful when performing the procedure; for example, Admin policies, Municipal Code, government standards and other SOPs.

7.   Definitions

Identify and define frequently used terms or acronyms. Provide additional and/or relevant information needed to understand this SOP.

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Standard Operating Procedure

1.   Purpose

Use this command to copy studies acquired on another Vevo 2100 Imaging System or from another storage location.

2.   Scope

For all labs that will use the Visualsonics 2100 scanning platform.

3.   Prerequisites

Ensure that the Vevo 2100 Imaging System is connected through the appropriate ports on the rear panel of the system to a data storage location on your network or to an external storage device.

4.   Responsibilities

Each lab is responsible for copying, importing or exporting their images from the scanner to their external source.

5.   Procedure

To import a study:
1. From the Study Browser press Copy From . The Copy Study From window appears.
2. In the Owner Operator box, select your name from the list. ALERT: CANNOT PROCEED If you do not select your name in the list, the system disables the OK button. 3. Select the studies you want to import to your Study Browser. To preview the images in an external study: In the folder browser browse to the folder that contains the study, expand the folder, expand the study and select a series. The system displays the thumbnails of the images. To select an individual study: ʃ In the folder browser browse to the folder that contains the study, expand the folder and select the study. ʃ Click the transfer button . The study name appears in the Selected Studies list. Rev 1.1 VisualSonics Vevo 2100 Imaging System Operator Manual 155 Chapter 26: Copying, deleting and importing
4. If you want to remove a study from the Selected Studies list, select the study and then click Remove.
5. Click OK. The system: a. Imports the studies that you selected. b. Displays the Copy Study Report box to summarize the details of the import process. Click OK to complete the process. c. Returns you to your previous workspace.

6. References

VisualSonics Vevo 2100 Imaging System Operator Manual

7. Definitions

1.   Purpose

The Vevo® Imaging Station is VisualSonics' advanced system for handling, monitoring and managing mice and rats during imaging procedures. This component-based apparatus helps you position the anesthetized animal in a stable position in relation to the transducer so you can:
Maintain the correct image plane during an imaging session
Monitor and maintain the animal's ECG, heart rate, and core body temperature and display and record this data in the Vevo 2100 Imaging System in real time
Manipulate the animal for image-guided injection and embryonic aspiration procedures

2.   Scope

For all Visualsonics 2100 users.

3.   Prerequisites

Department provided system user training.

4.   Responsibilities

All users are expected to use the equipment as expressed and clean the equipment after use.

5.   Procedure

Animal handling and physiological monitoring system. Use this system to secure the subject animal, support the manipulation of the animal during imaging, ensure the comfort of the animal during the imaging session, and monitor the animal's blood pressure, ECG, temperature and heart rate

Integrated rail base. Provides the stable rail for attaching, sliding and securing the animal platform system, injection system and transducer mounting system. You can interchange these systems and set them up for left-handed or right-handed people.

3D motor system (optional). Captures data sets for 3D volumetric measurements. The transducer connects to the bottom of the system. The system moves the transducer from one side to the other as the transducer acquires cross section slices. The slices combine to create the 3D image.
Transducer mounting system. Secures the transducer in a stationary position when you position it at the desired image plane. In this configuration, the 3D motor system is attached to the

mounting system and the transducer clamp is connected to the connector on the bottom of the 3D motor system.

7.   Definitions

None

Standard Operating Procedure

1.   Purpose

You can save your image data in one of two ways:
1. Save your data as a multiple frame animation of your image frames. This ultrasound image is called a cine loop.
2. Save your data as a single frame ultrasound image called an image frame.

2.   Scope

For all Visualsonics 2100 users

3.   Prerequisites

Department provided training

4.   Responsibilities

The users are responsible for saving their images or clips on the hard drive for later retrieval.

5.   Procedure

Saving a cine loop (multiple-frame animation) A cine loop is a multiple -frame animation of your image frames. You can save your image data as a cine loop in every image Mode other than 3D-Mode. B-Mode based cine loops are measured by number of frames. M-Mode and PW Doppler Mode cine loops are measured in seconds. How cine loops work While you acquire data, the system's playback memory holds your most recent image data in a buffer. The size of the buffer is determined by the Cine Loop Size preference you specify in the Preferences window on the General tab. When you save your image as a cine loop, the system saves this buffered data as an image. The buffer saves the latest acquired data.

To review your cine loop content before you save it:
1. Press Scan/Freeze.
2. Use the Cine Loop Review dial to review the current, but unsaved, cine loop frames.
3. If you don't want to save the content, press Scan/Freeze again and continue to acquire new image data.

To save your image as a cine loop:

1. Press Scan/Freeze to stop acquiring data

2. Review the image as required and then press Cine Store .

3. Your Mode window dims and the system pauses the image acquisition. During this image acquisition pause: The system captures the last number of acquired frames based on your Cine Loop Size preference and creates a new cine loop image. In the bottom left of your Mode window, the system briefly displays the Cine Stored confirmation message The system adds your new image as an unnamed list item within the active series row in the study that you selected in the Study Browser before you started acquiring your data. The pause ends and the system continues to acquire image data.

To save your image as an image frame:

1. Press Scan/Freeze and then Cine Store to create a cine loop.

2. Turn the Cine Loop Review dial forward and back until you see the frame you want to store.

3. Press Frame Store .

4. Your Mode window pauses for a moment. During this pause: The system captures the current image frame and creates a new image. In the monitor bar of your Mode window, the system briefly displays the Frame Stored confirmation message. The system adds your new image as an unnamed list item within the active series row in the study that you selected in the Study Browser before you started acquiring your data

5. The brief pause ends and the system continues to acquire image data.

6.   References

VisualSonics Vevo 2100 Imaging System Operator Manual

7.   Definitions

None