

SCORE 3D Workstation Operation Guide

Target System: Trinias/ BRANSIST alexa
Reference: M517-E227E
(DAR-9500f 3D-Recon SCORE 3D/CT/Navigation Operation Manual)

[No Text]

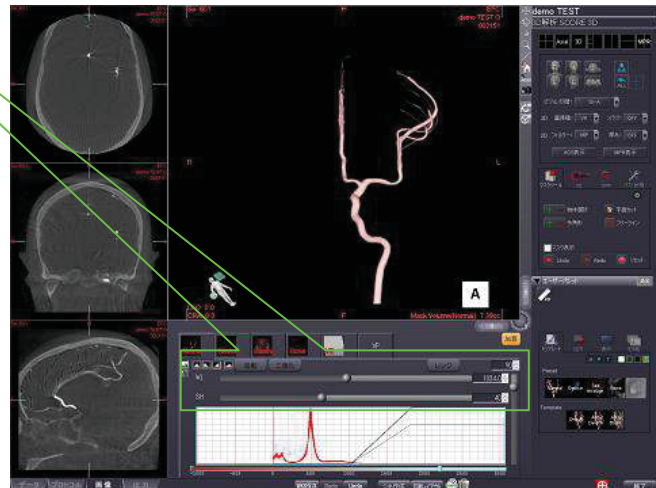
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Change opacity of vessels

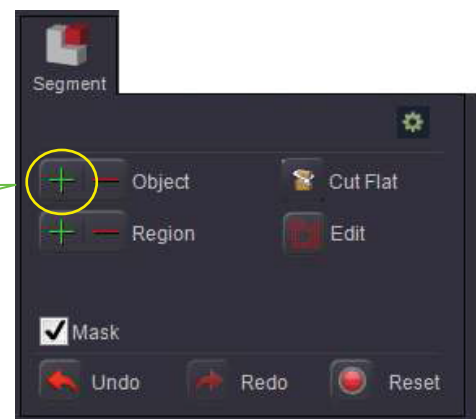
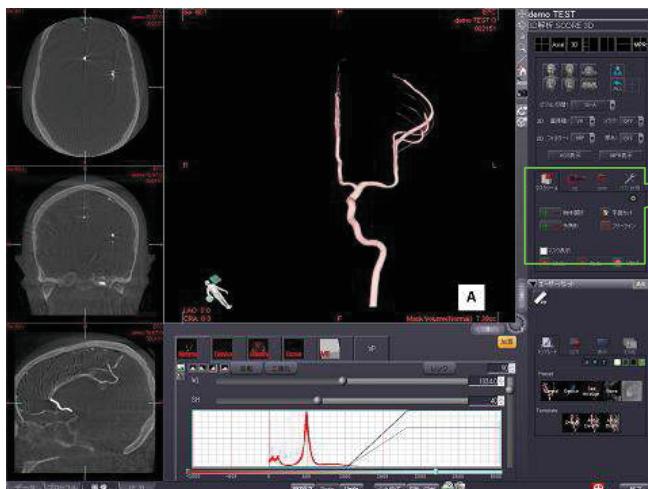
Adjust WL and SH value.

*WL: Window Level
SH: Sharpness



Remove needless bones or vessels

- 1) Click the button [+ Include Object] on the [Segment].
- 2) Click on the targeted vessel.
- 3) Click [Apply] or [Apply Reverse] to determine.



Zoom in

Followings are alternative

A) Press Shift key and right click, and the cursor will be hand glass mark.

Drag the image right or bottom to zoom in.

Drag the image left or up to zoom out.

B) Click the zoom mode button. (Hand glass icon)

Drag the image bottom to zoom in.

Drag the image up to zoom out.

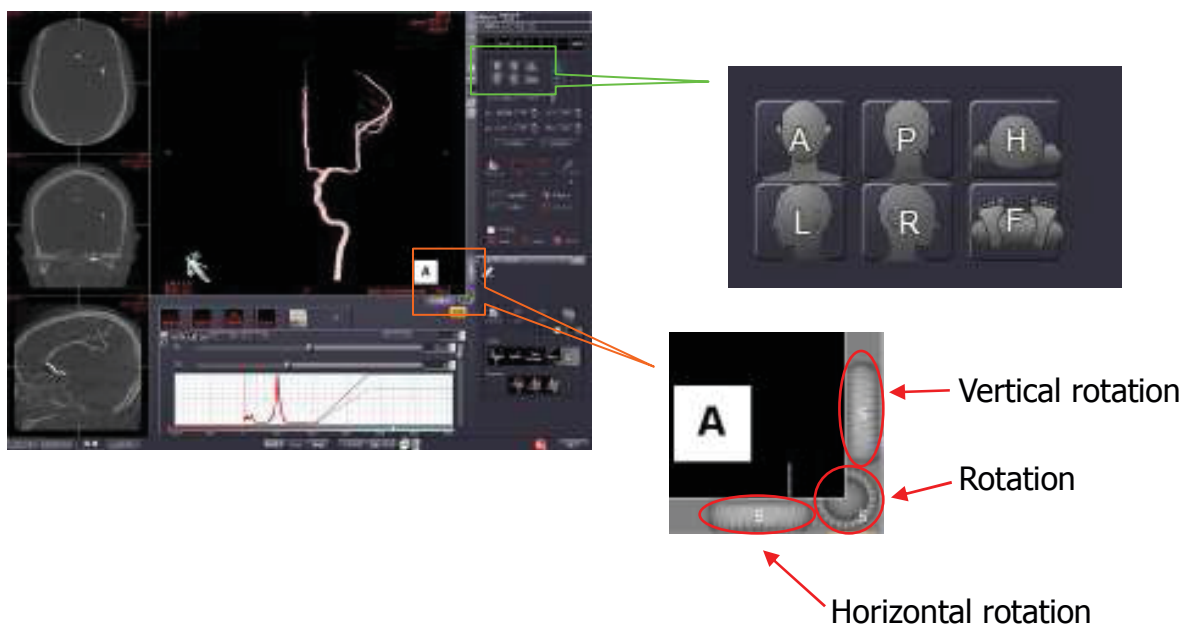


Rotate image

A) Drag over the image to rotate it.

B) Select the direction of the image from the Orientation icon on the tool partition.

c) Click and drag each dial to rotate. (Vertical or Horizontal)



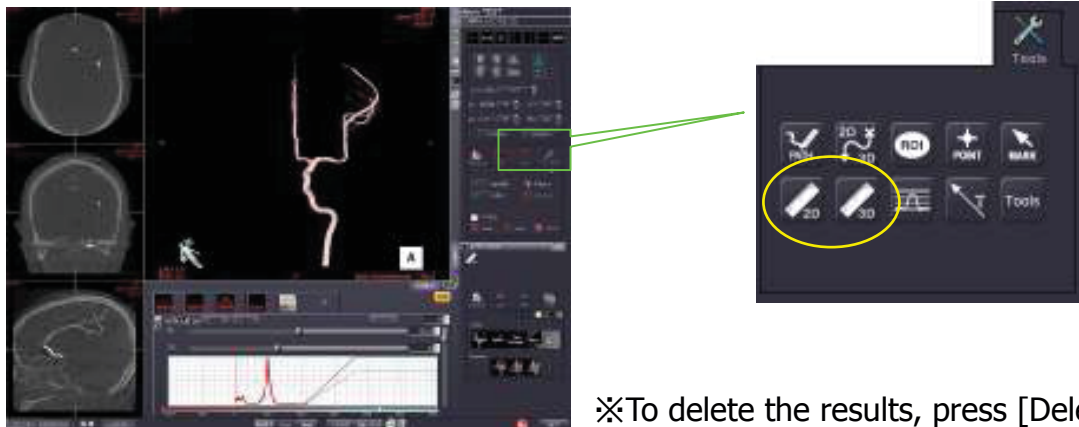
Measure image

Click the button [2D] or [3D] on the [Tools].

2D measurement: Click 2D measure button, and click the starting point and ending point.

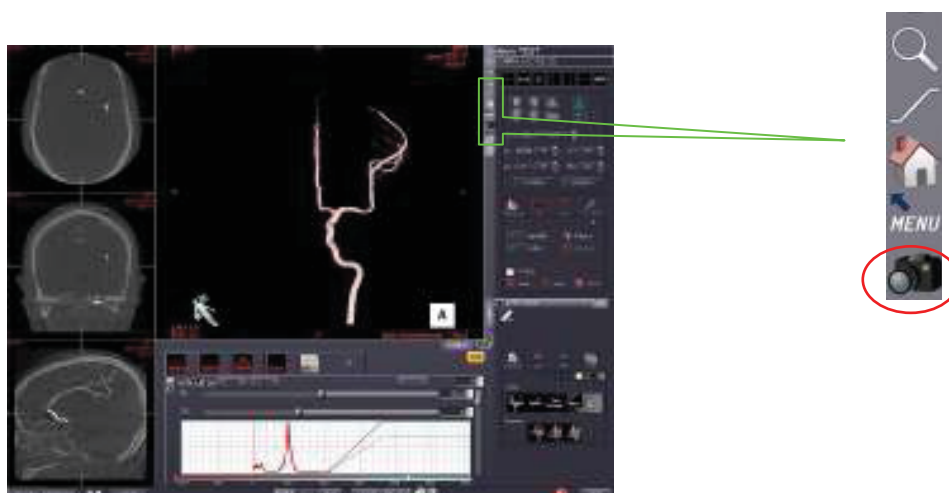
To make more than two points, press Shift key and right click.

3D measurement: Click 3D measure button, then click to make the starting point and click again as many as required. Double-click to make the ending point.



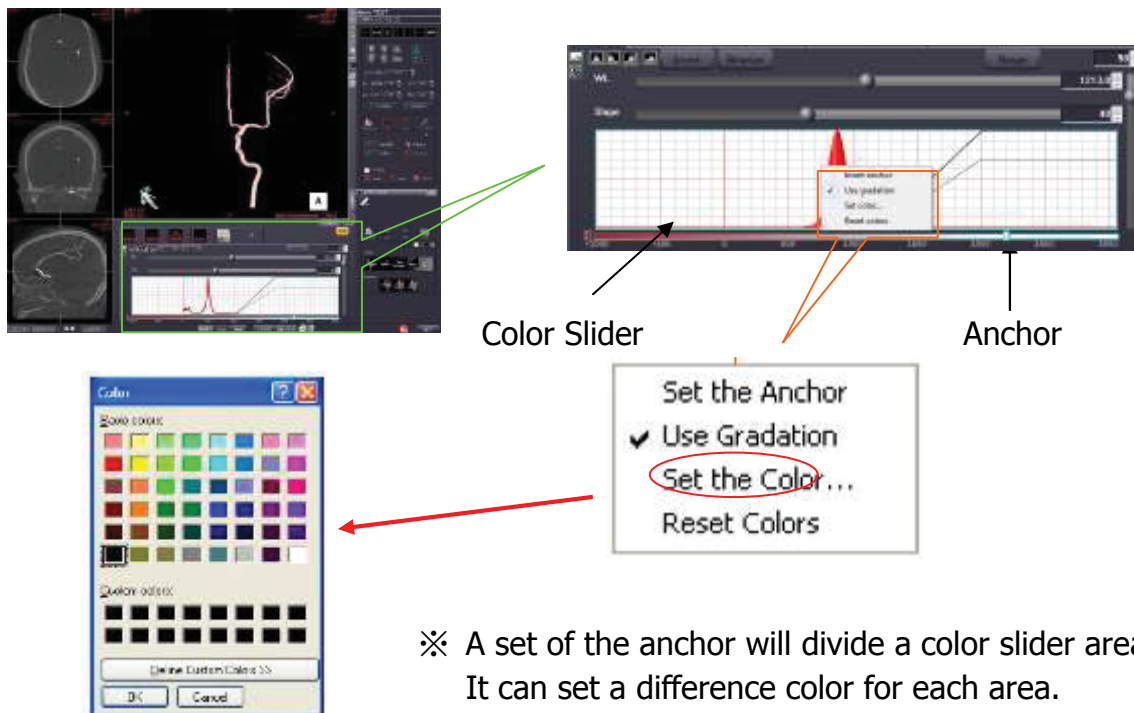
Capture image

Click the camera button.



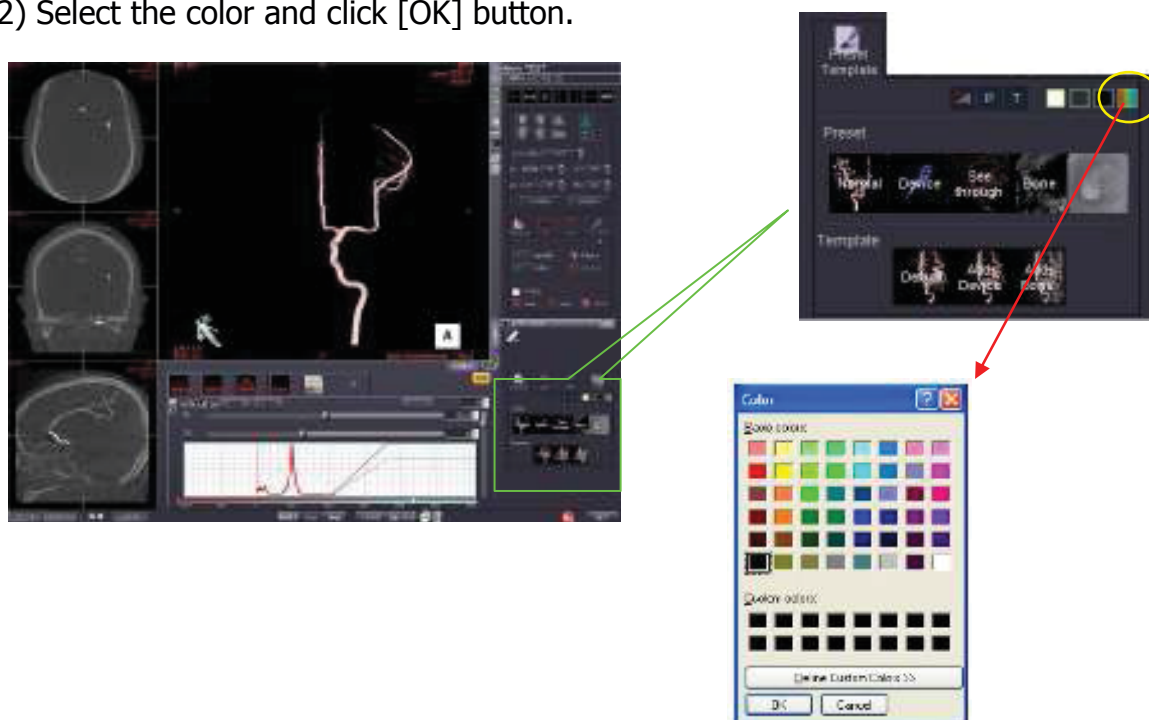
Change color of vessels

- 1) Click on this slider to display the menu.
- 2) Select [Set the Color] to open the [Color] dialog.
- 3) Select the color and click [OK] button.



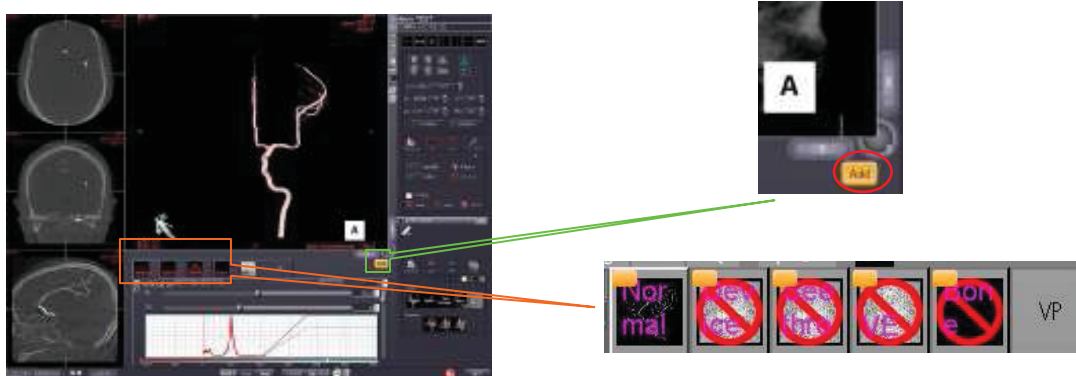
Change background color

- 1) Click the button [Background Color] on the [Preset Template] to display [Color] setting dialog.
- 2) Select the color and click [OK] button.



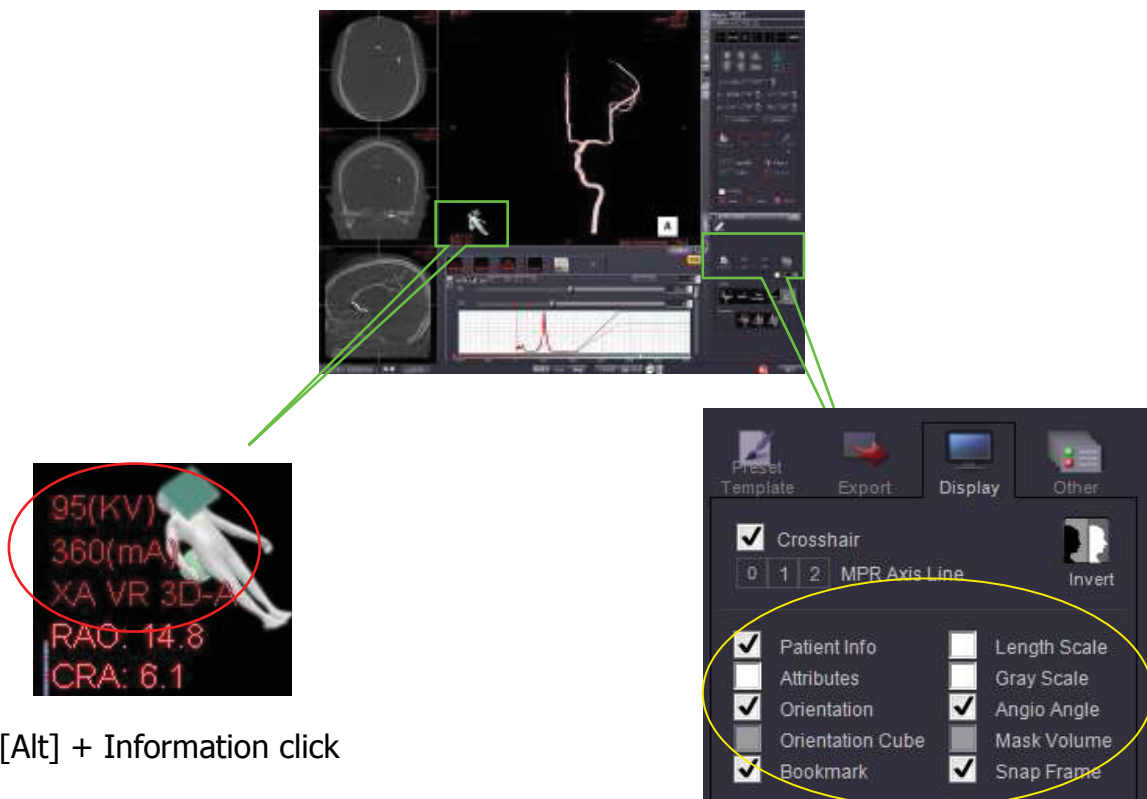
Add volumes

- 1) Click [Add] button.
- 2) Choose volume tab to add.
e.g.) Normal + Device, Normal + Bone etc.
- 3) Click the upper left corner of tab to switch On/Off.



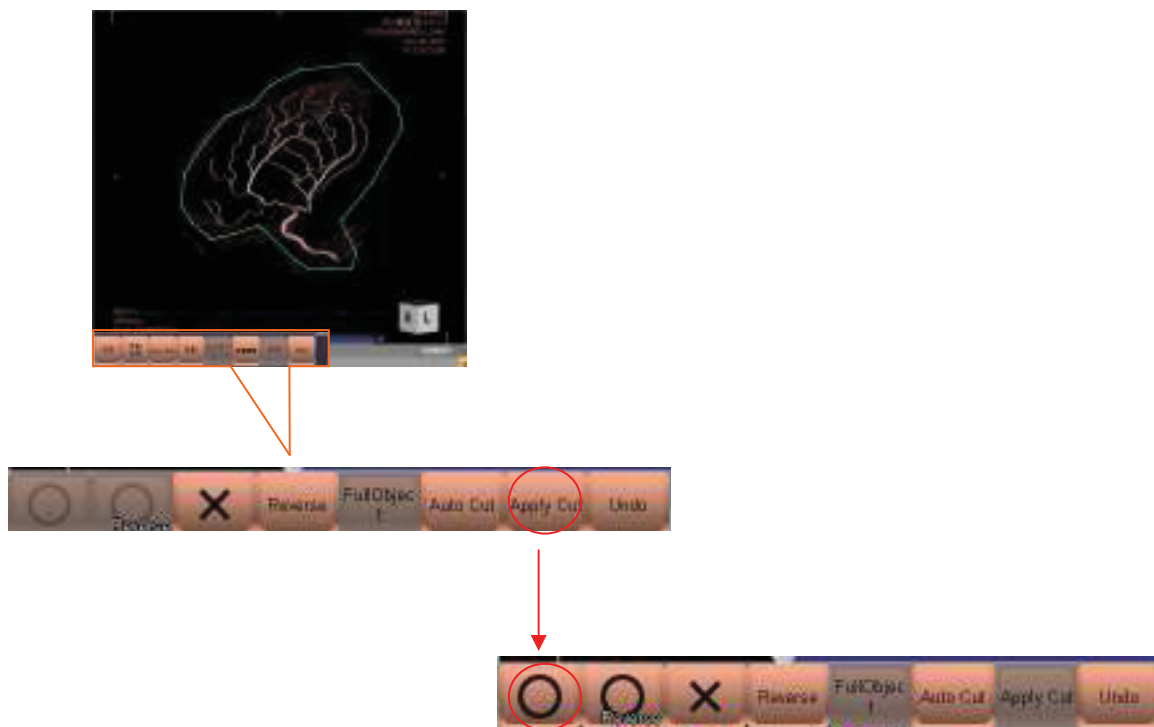
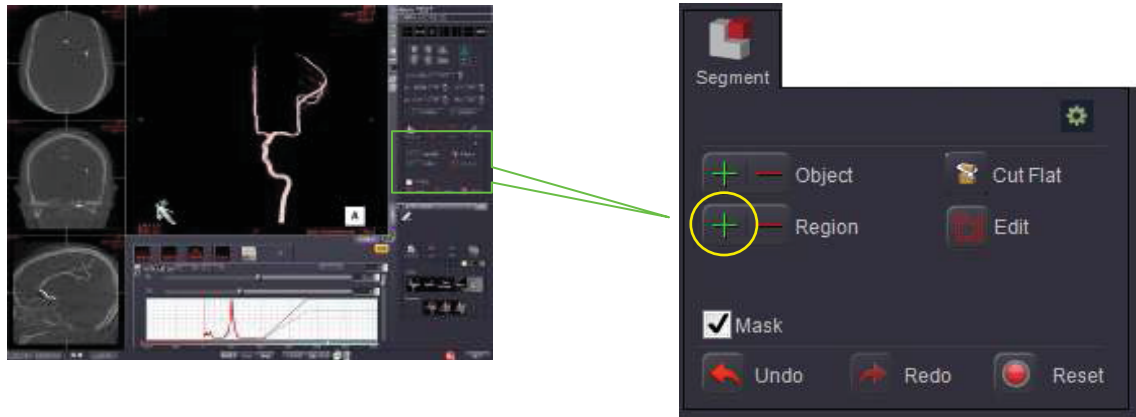
Display image information

- A) Press [Alt] key and click the information (Angle, Volume, Scale etc.) displayed.
- B) Select the information on the [Display]. *Temporal setting



Mask management of vessels


- 1) Click [+include Region] on the [Segment] to select the area needed.
- 2) Click [Apply] and then click the circle to determine.
*Click the cross to cancel.




☆ The area displays automatically immediately after select [Region] if [Auto Cut] is chosen.

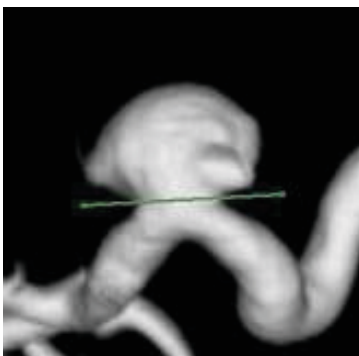
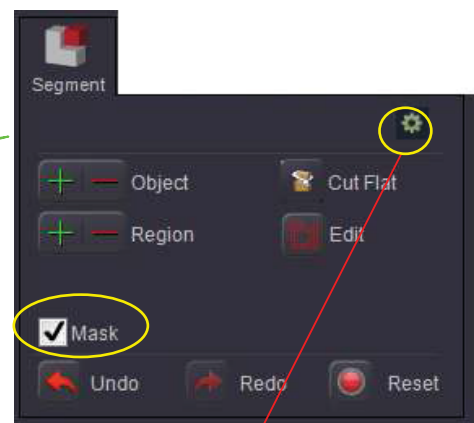
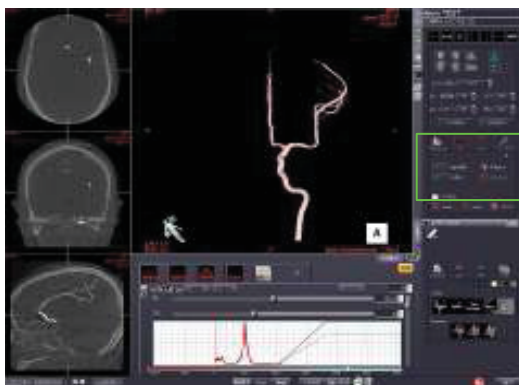
Volume measurement

e.g.) Volume measurement of aneurysm

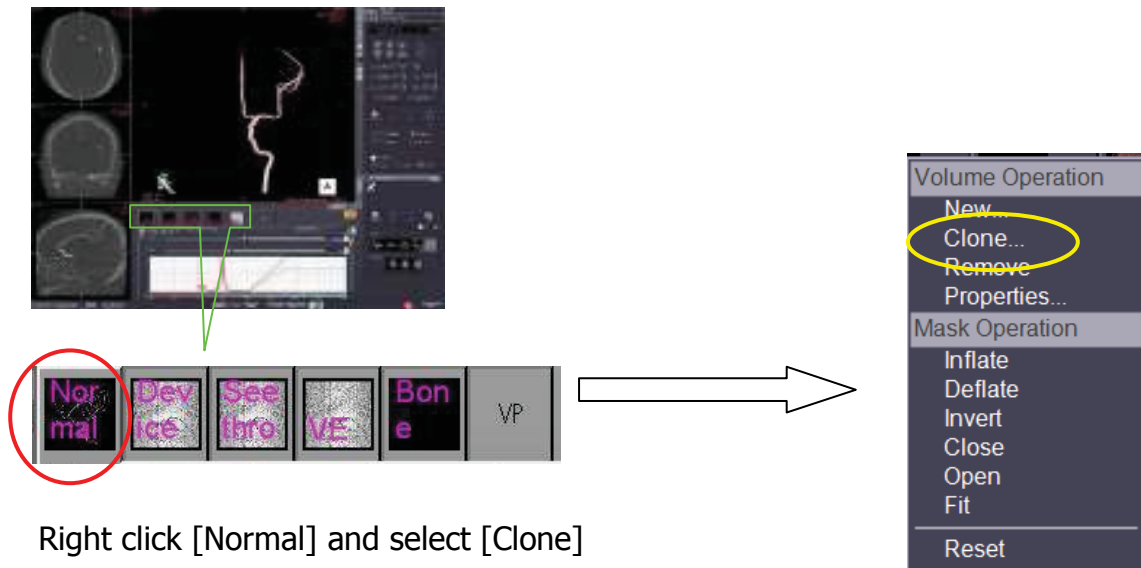
- 1) Pan or rotate the object where the aneurysm can be seen clearly without overlapping with vessels. (Zoom in the object is recommended to make the operation easier.)
- 2) Right click on [Normal] and copy the volume. Select [Clone], and then select [Normal Copy].
- 3) Click the button  on the [Segment], and then select [Cut Line]. And draw a line between the vessel and the aneurysm, and then click [Apply].
- 4) Click the button [+Include Object] on the [Segment]. Select the aneurysm you cut in the step 2) to delete except for the aneurysm, and then click [Apply].
- 5) Choose [Mask] button on the [Segment].
- 6) Adjust the position of the slice in the cross section vision to check the selected mask area is red. Right click on [Normal Copy], and then select [Deflate] and input deflate value number. Click [OK].
Mask area is deflated until it suits aneurysm area.
- 7) Check the measurement value.

OPERATING PROCEDURE

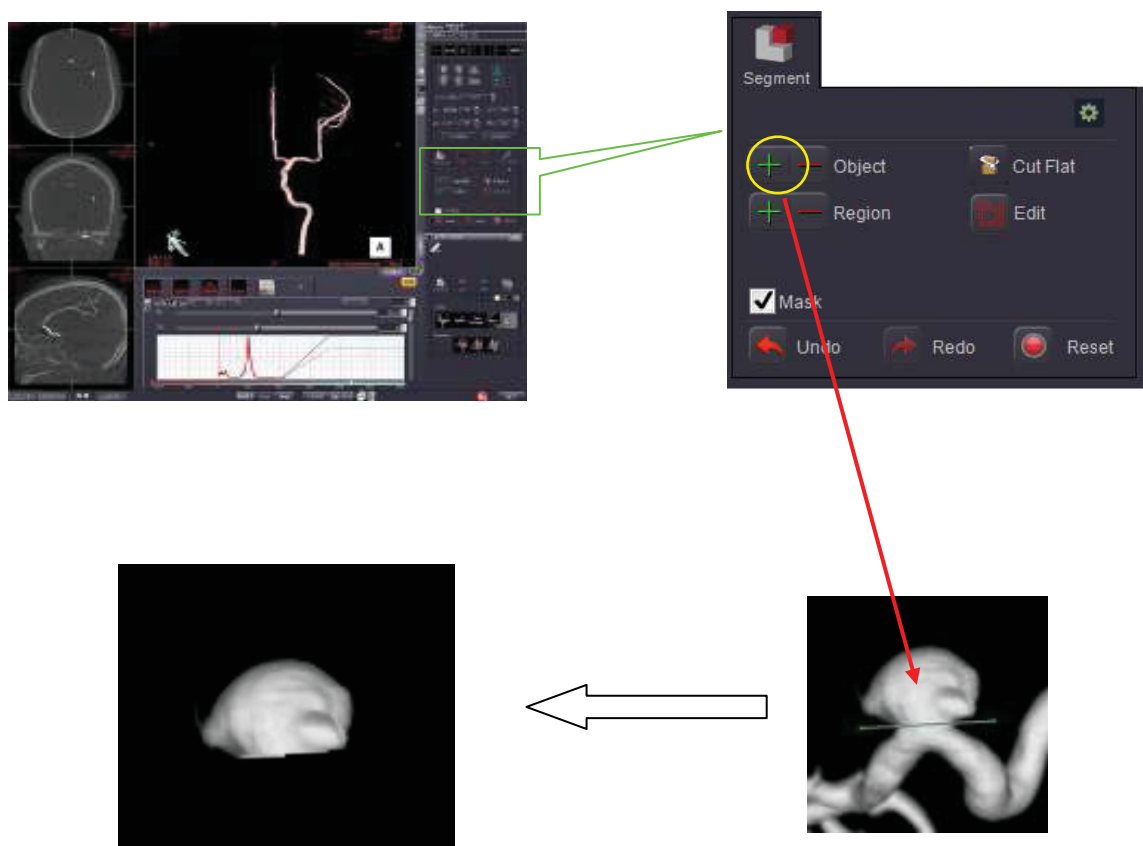
- ① Rotate the object until at the angle whose neck of aneurysm is visible to the front.
- ② Click  on the [Segment], and select [Cut Flat]. Draw a line between the vessel and the aneurysm.



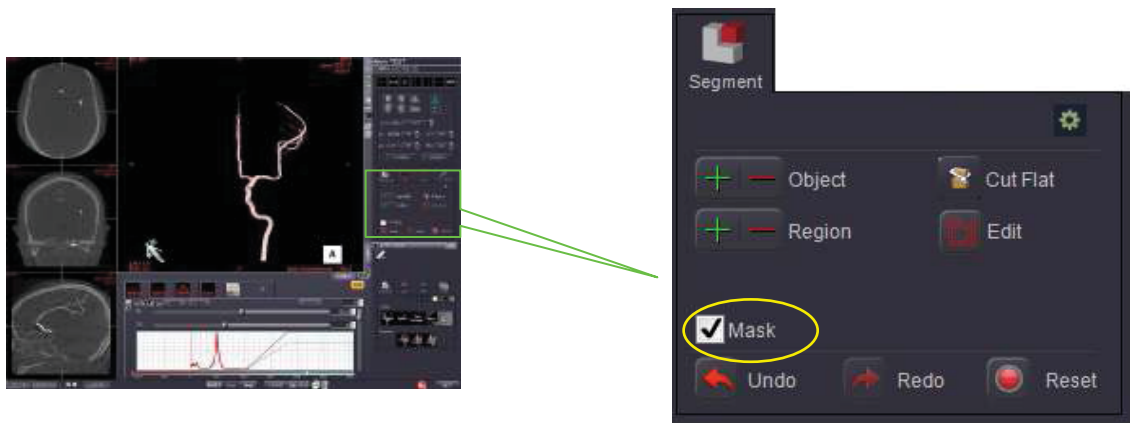
- ③ Right click [Normal] and copy the volume. Select [Normal Copy].



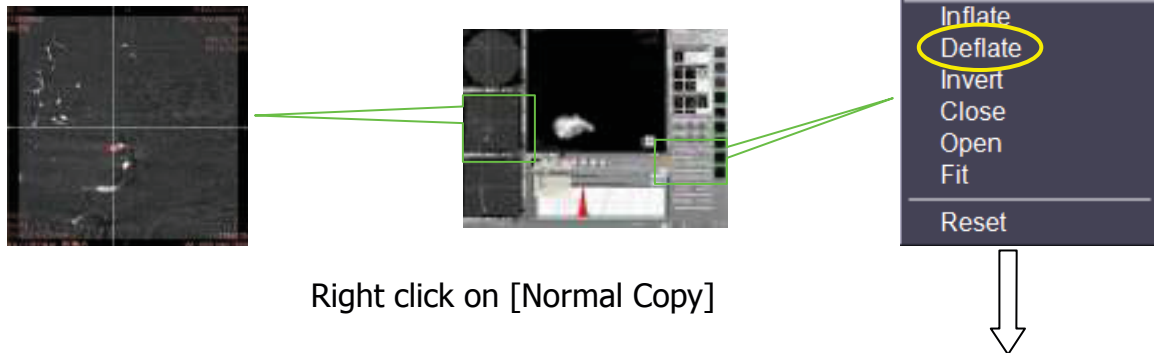
- ④ Click the button [+Include Object] on the [Segment].
Select the aneurysm and click [Apply].



- ⑤ Choose [Mask] button on the [Segment].

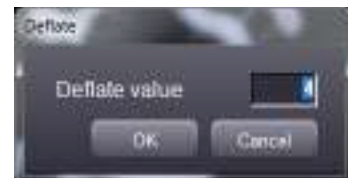


- ⑥ Mask area is deflated until it suits aneurysm area.

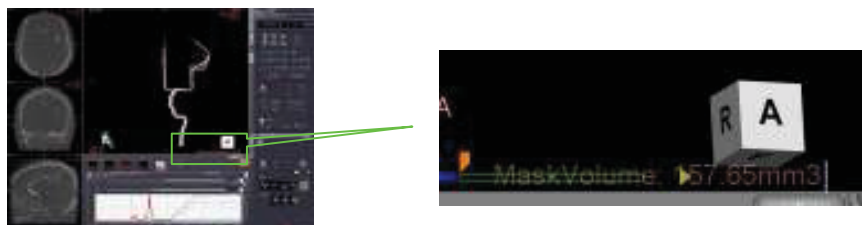


Right click on [Normal Copy]

*When deflate too much, use [Inflate] on the menu.



- ⑦ Check the measurement value.



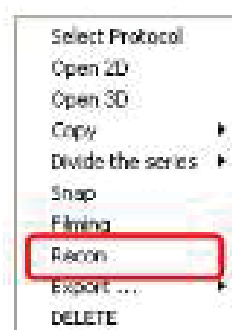
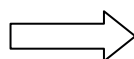
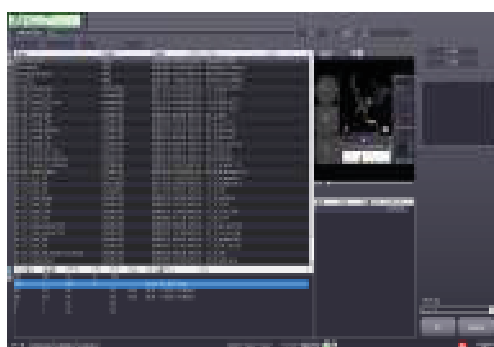
Change reconstruction settings of SCORE 3D/CT

Change for each parameters.

- ✓ Resolution
- ✓ Image Sharpness
- ✓ Noise reduction filter
- ✓ DSA mode *
- ✓ Reregistration *
- ✓ Updating calibration data

(*Only for SCORE 3D-DSA)

- 1) Select the rotation data to reconstruct from the series data list and right click.
- 2) Select [Recon] and click [OK].



- 3) Change the reconstruction parameters and click [OK].

SCORE 3D-DA



SCORE 3D-DSA



SCORE CT



- Resolution
- Image Sharpness
- Noise reduction filter
- DSA mode *

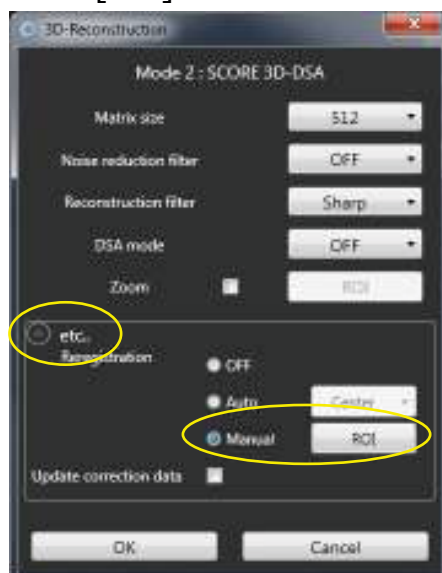
: 512 / 256
 : Sharp / Standard / Smooth
 : OFF / Level1 (Low) / Level2 (High)
 : OFF / Device / Bone

(* Only for SCORE 3D-DSA)

【Reregistration】 *Only for SCORE 3D-DSA

This is function, if the patient moved between during Mask and Live image acquisition.

- 1) Click [etc.] on the [3D-Reconstruction].
- 2) Select [Manual] and click [ROI].



*Default is [Auto]

- 3) Surround the device with red ROI on both [Front] and [Lateral] windows. Enable to change the position and size of red ROI.



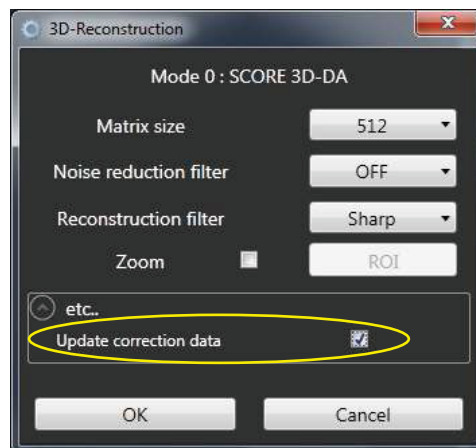
- ☆Surround the high absorption device (clip or coil etc.) on the images. Available area is one if the image has some devices.
- ☆It becomes short processing time, make the ROI size smallish.

- 4) Click [Check] button and check the device does not come out from red ROI.
*If not, return by [Close] button and set the ROI position and size again.
- 5) After adjusting the ROI, click [OK] on [Reregistration Region] window.

【Updating calibration data】

Use this function to apply new calibration data to reconstruction image.
(e.g.) After the C-arm bumped something, when a new calibration* data is made.)

- 1) Click [etc.] on [3D-Reconstruction].
- 2) Select [Updating calibration data].
- 3) After that do reconstruction.

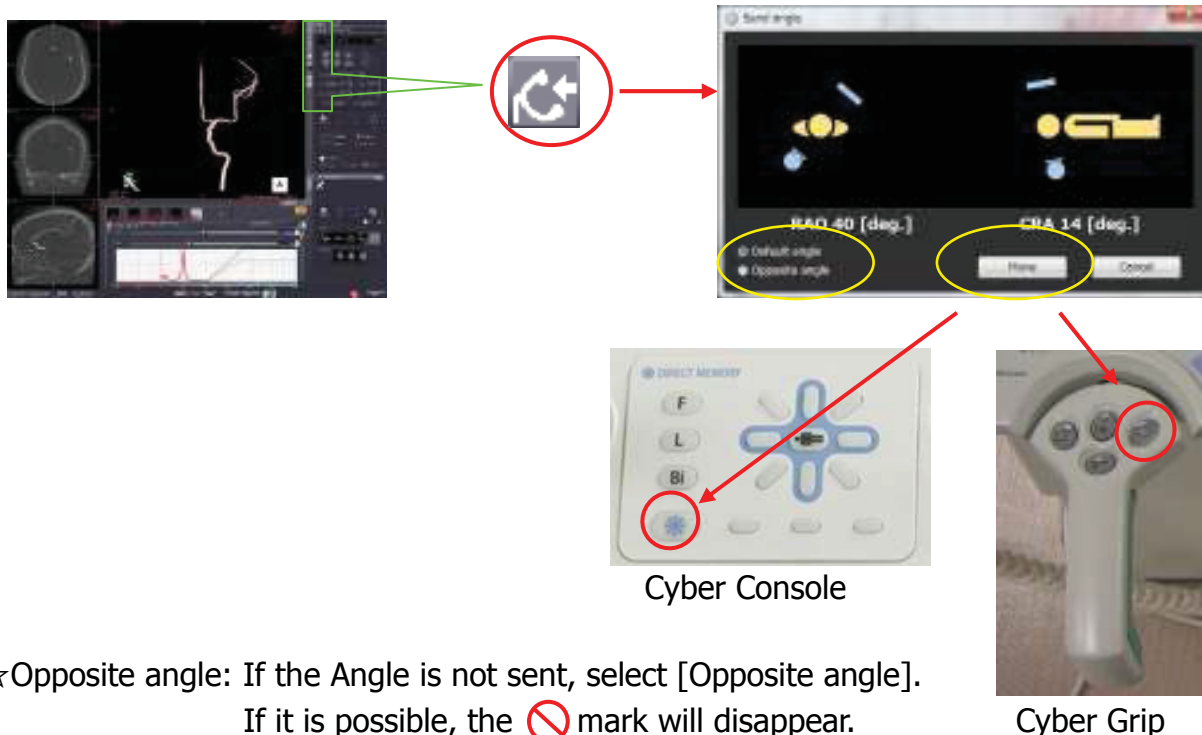



*Calibration will be performed by professional service representatives.

Send image angle to C-arm

- 1) Display the image with required angle.
- 2) Click [Sending Angle] button on the 3D-WS display.
- 3) Click [Move].
- 4) Press Set Switch [*] on the cyber Console or Cyber Grip.

C-arm moves only while the switch is pressed. Keep it pressed until it becomes the same angles as ones sent from the 3D-WS. Once it completed, the flashing angle display will stop.

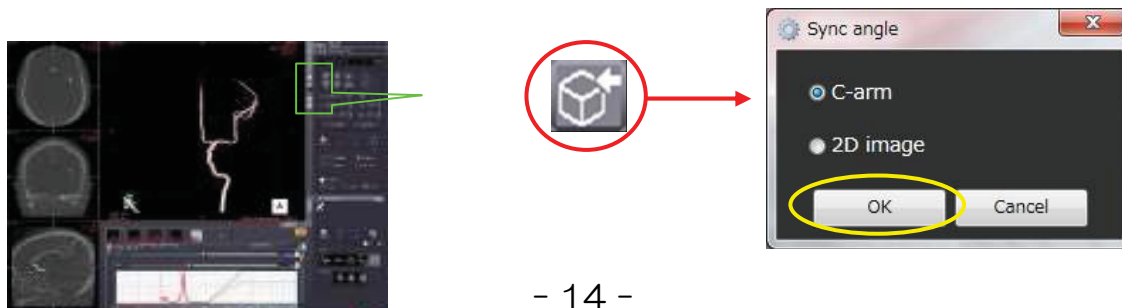


☆Opposite angle: If the Angle is not sent, select [Opposite angle].
If it is possible, the  mark will disappear.

Synchronize with C-arm angle/Ref. monitor

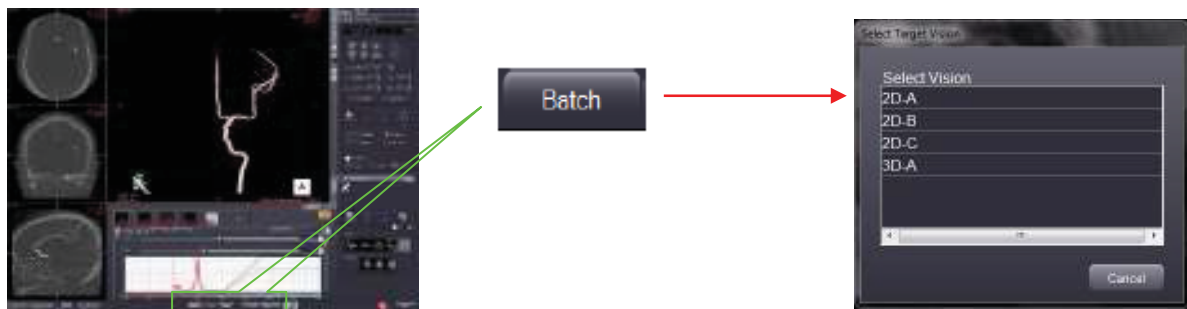
This function is to synchronize the 3D and 2D vision (only MPR) image on 3D-WS with the current C-arm angle and observing angle on Ref. monitor.

- 1) Click [Sync. Angle] button on the 3D-WS display.
- 2) Select [C-arm] to synchronize with current C-arm angle.
Select [2D image] for displayed angle on Ref. monitor.
- 3) Click [OK]

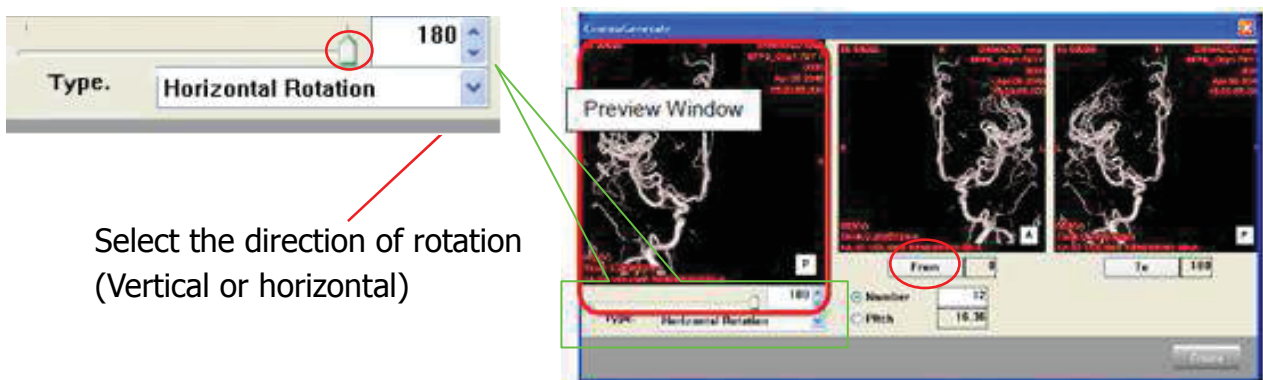


Create cine image

- 1) Click [Batch] button, and select the vision.



- 2) Adjust the slider to set the starting image of the cine, and then click [From] button.

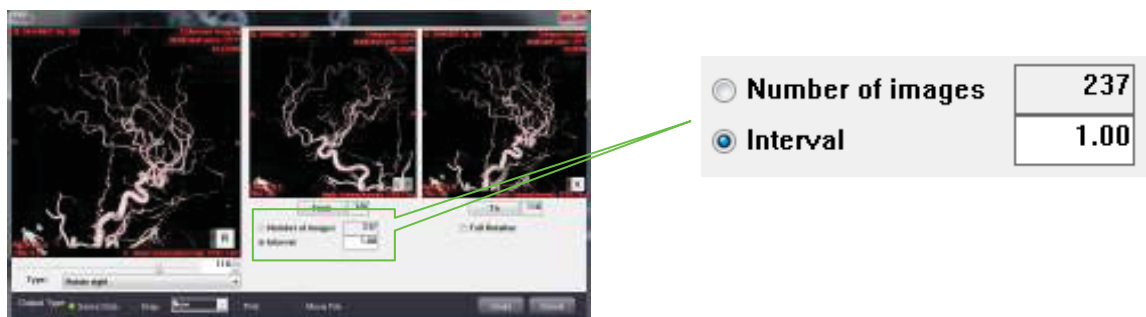


Select the direction of rotation
(Vertical or horizontal)

(In case of cross-section image, click [Back to front])

Type: **Back to front**

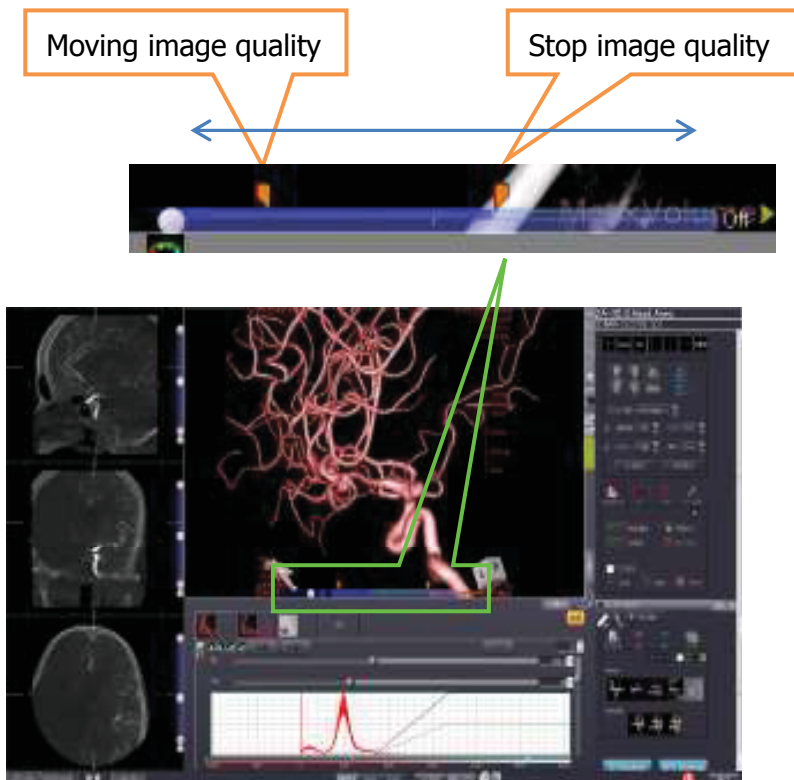
- 3) Display the last image of the cine, and then click [To] button.
- 4) Select [Number] or [Interval], and input numbers, and then click [Create] button.




- 5) Remark the series data, and then click [Create] button.

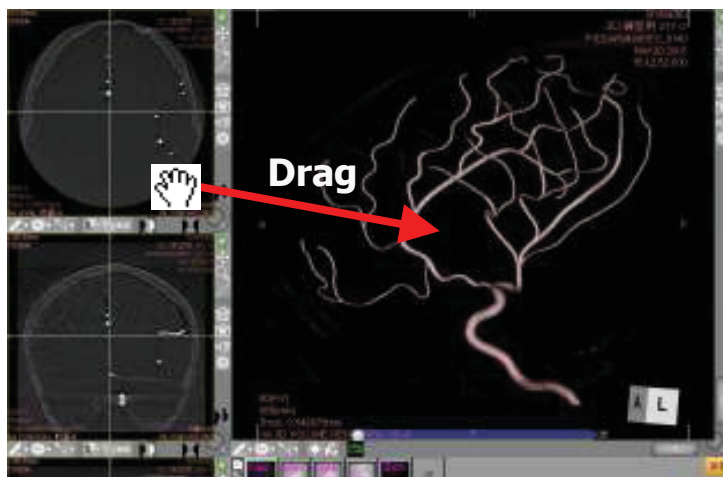
Change resolution setting of SCORE 3D

Press [Alt] key and adjust the slider to change resolution.
Right side of slider is higher resolution than current image.



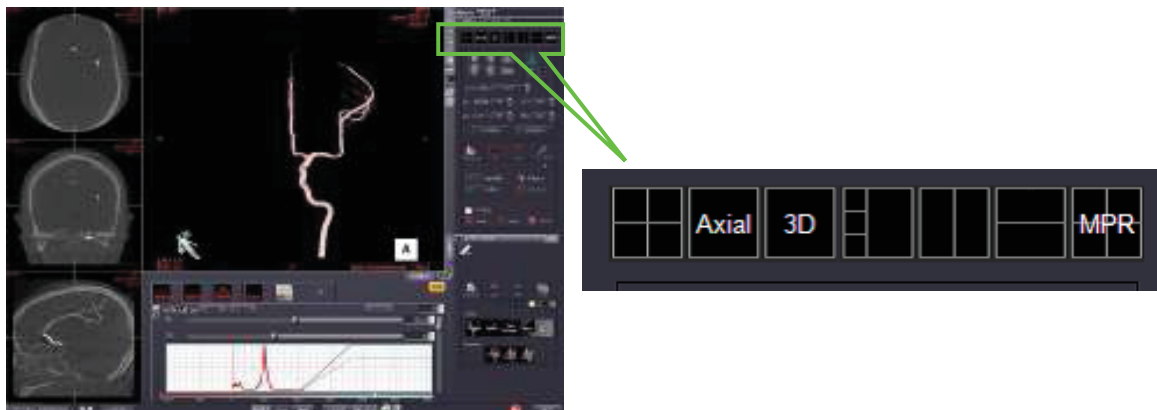
Switch displayed image

- *Move the cursor to right bottom of image window (cursor turns to be  hand cursor.)
- *Drag and drop image to the main window.



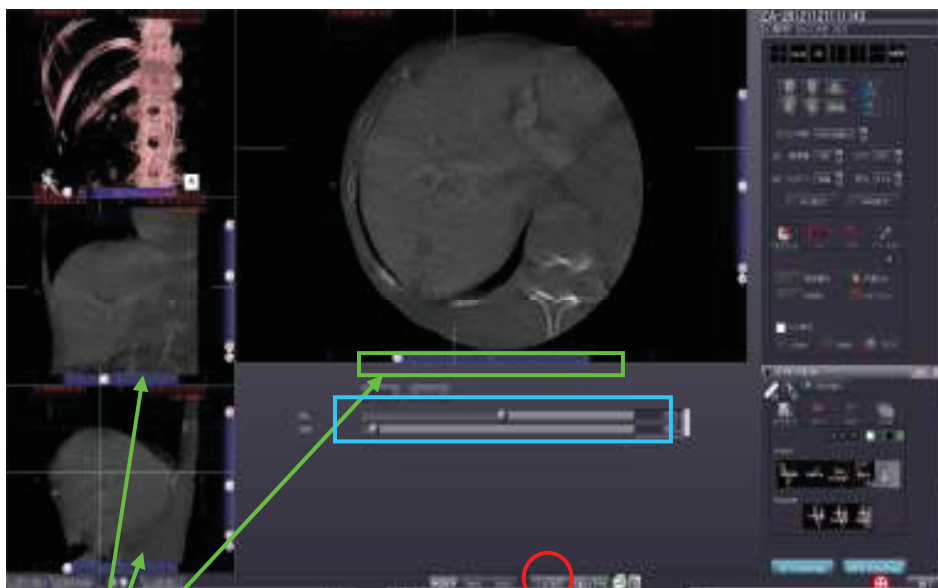
Change layout

Select and click [Layout] button on the tool partition.



Change thick filter

Thick filter (Axial / Coronal / Sagittal) can be changed.
Tomography can be saved by creating cine image.



Thick filter Slider

Thick filter can be adjusted with slider.
Registered thickness can be selected by right click.

Create the cine image

Image quality adjustment

WL/WW value can be adjusted with slider
or by inputting number.
*[Fine]: Enables fine adjustment with slider.

Workspace

*Image, image quality adjustment, and image editing step are saved as workspace.
Check point can be created on every image editing steps.
Every image editing steps can be saved.

a. Creating Workspace.

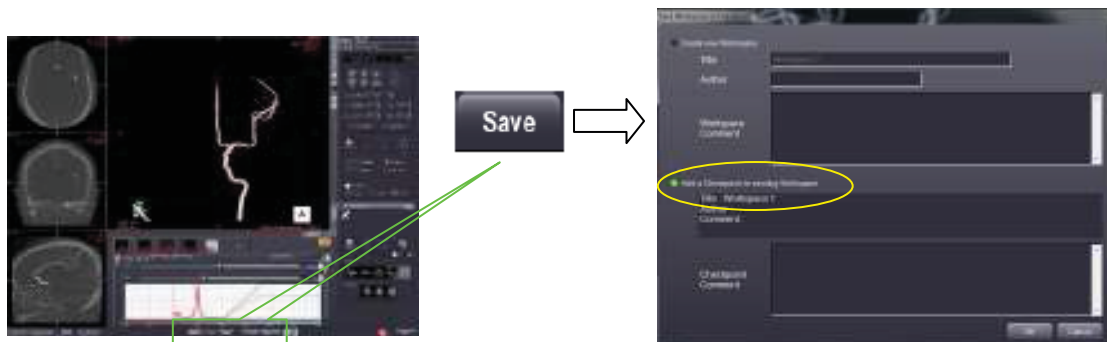
- 1) Click [Save] button on the bottom bar
- 2) Workspace dialogue will be displayed
- 3) Input title, comments and etc.
- 4) Click [OK] to save the workspace



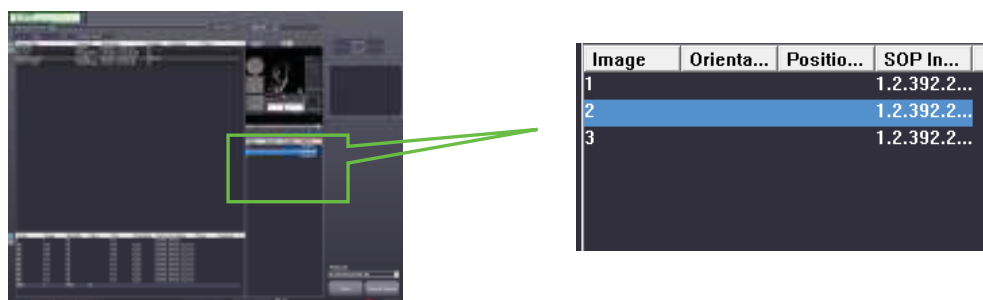
*Double click WKS on the data list to read the workspace.

b. Create Check Point.

- 1) Workspace is displayed
- 2) Click [Save] on the bottom bar
- 3) Select [Add a CP]
- 4) Click [OK] to create the Check point



Select WKS from the data list, and then double click checkpoint to read.



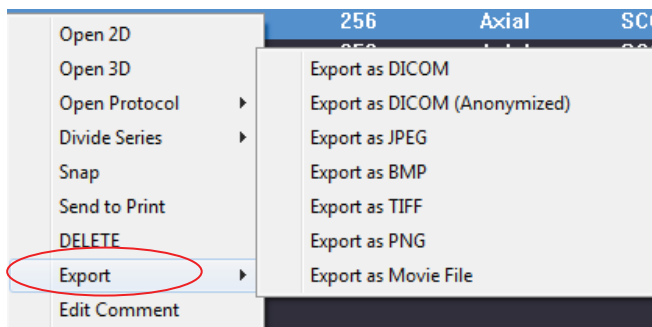
*Workspace cannot be opened if its original reconstruction data were deleted.

Save the data to media

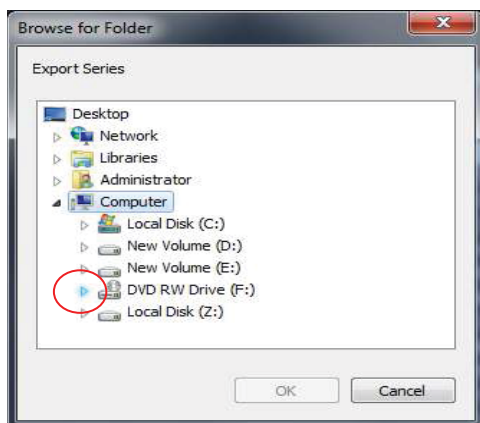
*Image data can be saved on media. (CD and DVD-R, RW are available.)

*Format is necessary, when a new one is used.

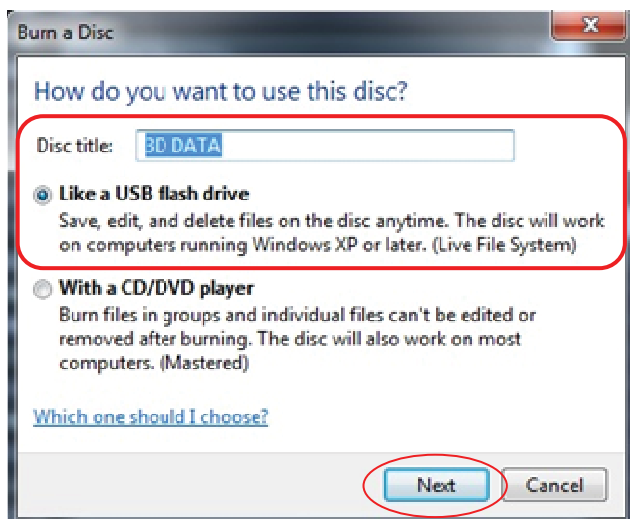
- 1) Right click on the data to be saved.
- 2) Select [Export], and then select file type.



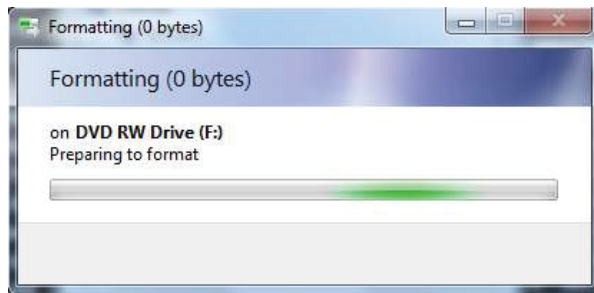
- 3) In case of new media, click ▶mark of DVD RW Drive.



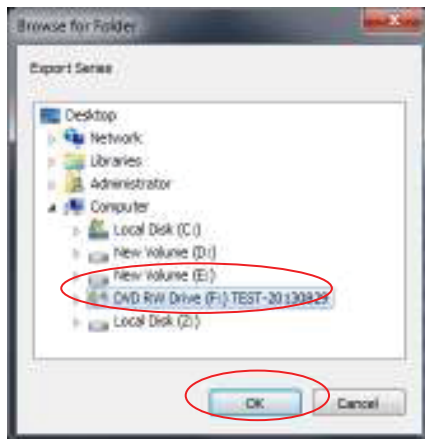
- 4) Attach an arbitrary title to the disc.
Choose [Like a USB flash drive] and click [Next], a format starts.



The following window is displayed during format.

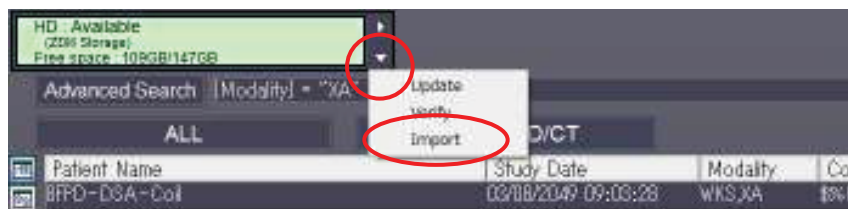


5) After format, select "DVD RW Drive", and click [OK].

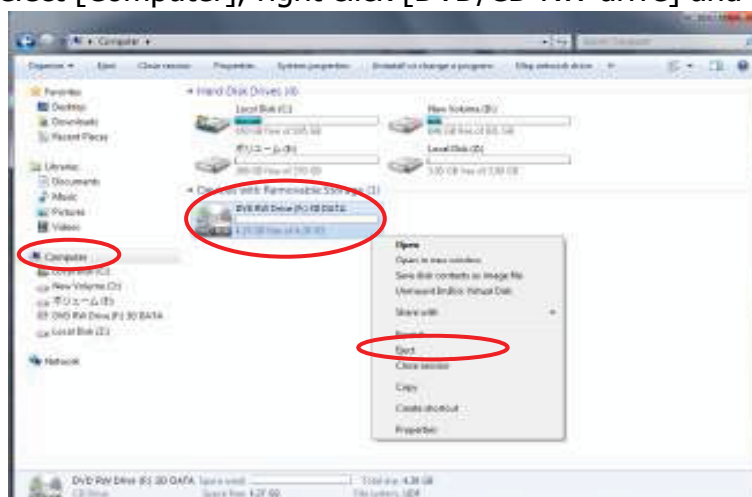


★When taking out a media

1) Click the ▼ button, and select [Import].



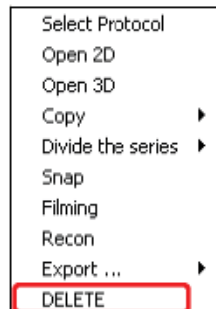
2) Select [Computer], right click [DVD/CD RW drive] and select [Eject].



Delete image

Data are not deleted automatically. Delete images manually, if you needed.

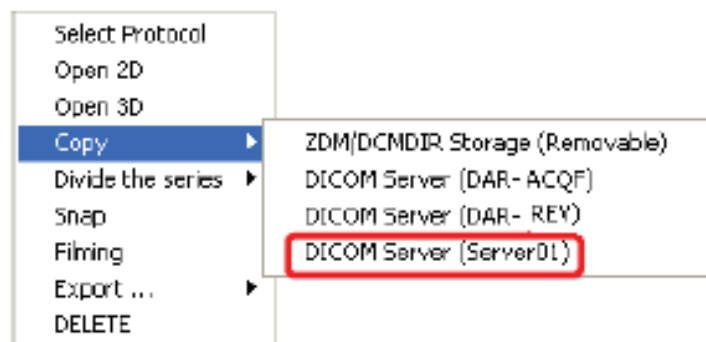
- 1) Right click on the data to be deleted
- 2) Select [Delete]



Send DICOM data *option

Send image to server.

- 1) Right click on the data to be sent
- 2) Select [Copy], and then select server



Notice

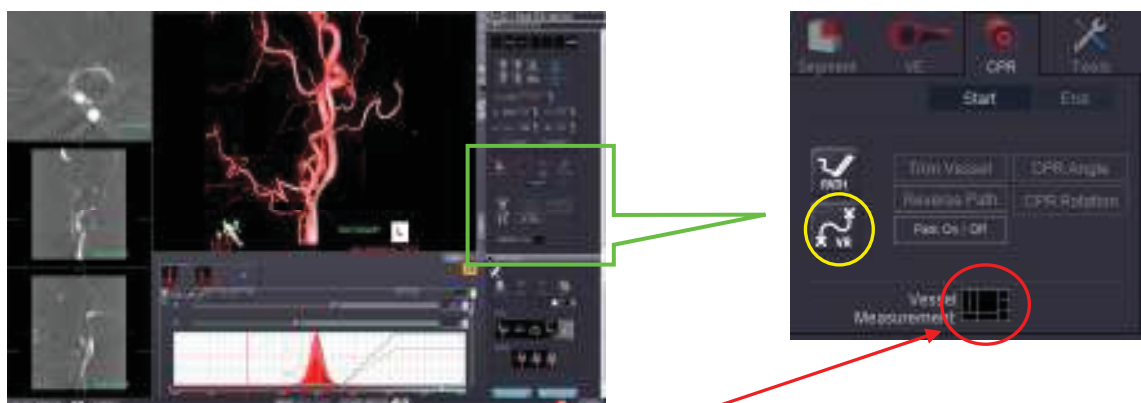
- 1) Workspace can not be sent to server
- 2) Cine image may not be displayed depends on DICOM viewers.

Measurement of vessels

- 1) Select [VR (trucking)] button on the [CPR] of the tool partition. It makes a path along the vessel.
- 2) Click [Vessel Measurement] button.
- 3) Stenosis ratio is calculated automatically, and it is displayed on the reference list.
- 4) Adjust the position of reference line, and calculate the stenosis ratio.

OPERATING PROCEDURE

- ① Select [VR (trucking)] button on the [CPR]. Click the start point and end point on the target vessel, after that it is made a path.



- ② Click [Vessel Measurement] button.

Red line : Cross-section area

Blue line : Mean diameter

Dark blue area : Long axis & Short axis

Image rotation: Drag to right & left on the image

Light-blue: Analysis point

Yellow : Stenosis point

White : After reference line of 4th

Analysis result graph

Straight View

CPR image

Short axis MPR

Reference list

Distance table

Light-blue: Analysis point

Yellow : Stenosis point

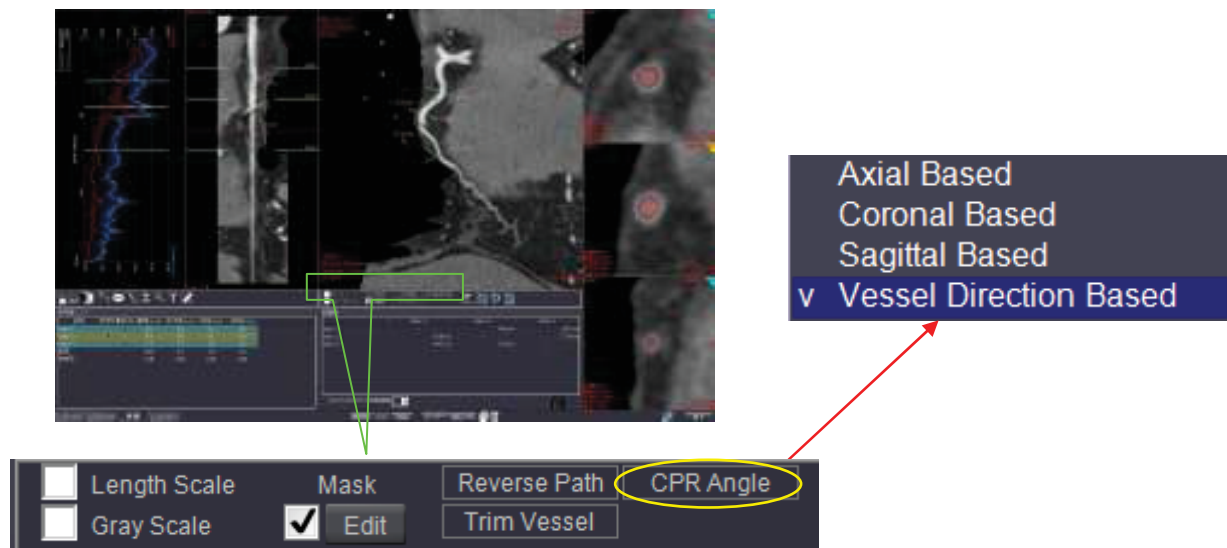
* : Point chosen now

Stenosis ratio

Display of mask On/Off is changeable

Threshold is changeable

☆ **How to change the projection direction of CPR.**



Axial Based : Limit to Axial view

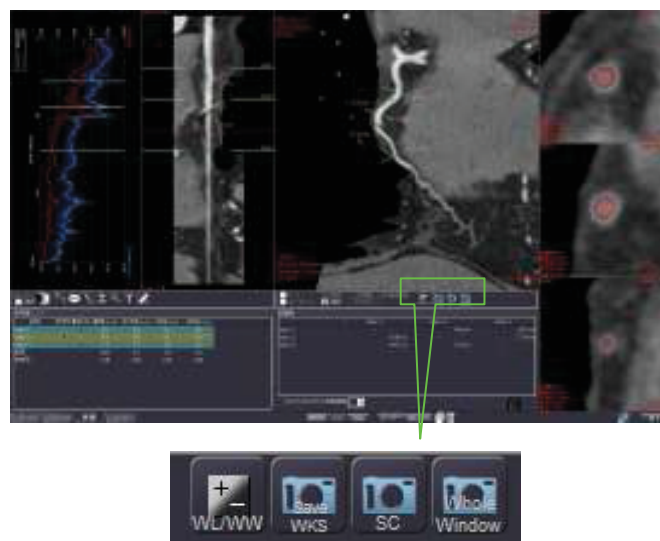
Coronal Based : Limit to Coronal view

Sagittal Based : Limit to Sagittal view

Vessel Direction Based : Rotate freely on base of calibration* on the path.

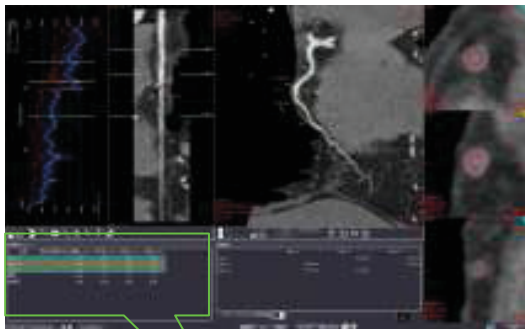
*Red line with green points.

☆ **How to change the window and save the image.**



- WL/WW : Adjust WL/WW
- Save WKS : Image editing step are saved
- SC : Select image is saved by SC type
- Whole Window : Whole window is saved by SC type

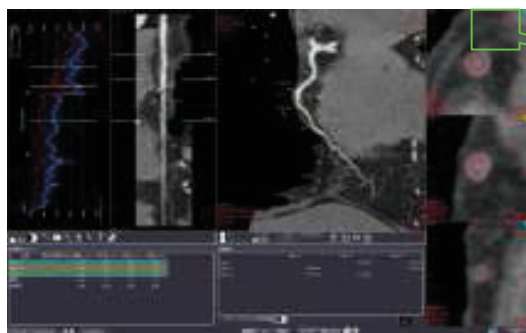
☆ **How to change the Stenosis point and Index point.**



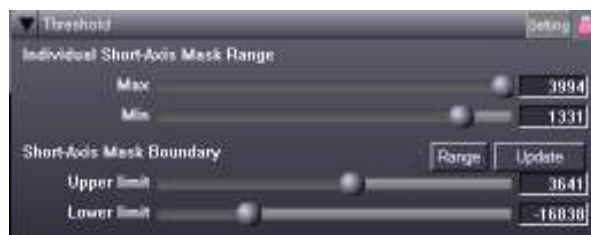
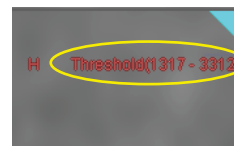
Measurement List							
Name	Steno...	Refere...	Area(mm2)	Average Dia...	Short Diamet...	Long Diamet...	
Index 1	○	*	21.2	5.2	4.6	5.5	
Index 2	*	○	15.7	4.5	3.7	4.8	
Index 3	○	*	17.9	4.8	4.3	4.9	
Base			19.19	4.9	4.4	5.1	
Stenosis Ratio			18.3%	9.5%	17.5%	5.8%	

- "○" of column to make into stenosis-point or analysis-point is clicked and changed.
- * mark mean being chosen.

☆ **How to change the threshold of mask of cross-section area.**



Click the character of threshold



【Threshold of mask of cross-section area】

- Slider is dragged to right and left
- Number input to the box

【Range of threshold】

- Slider is dragged to right and left
- Number input to the box
- Click [Range]button, and then select the range

Click[Update]button, after parameter is changed

☆ **How to return to the original screen.**

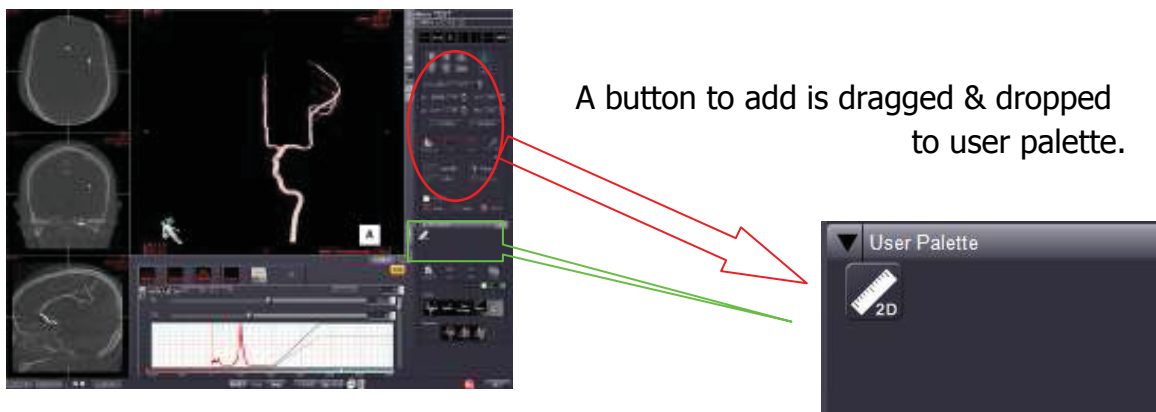
- Click [Undo Layout] button



User palette

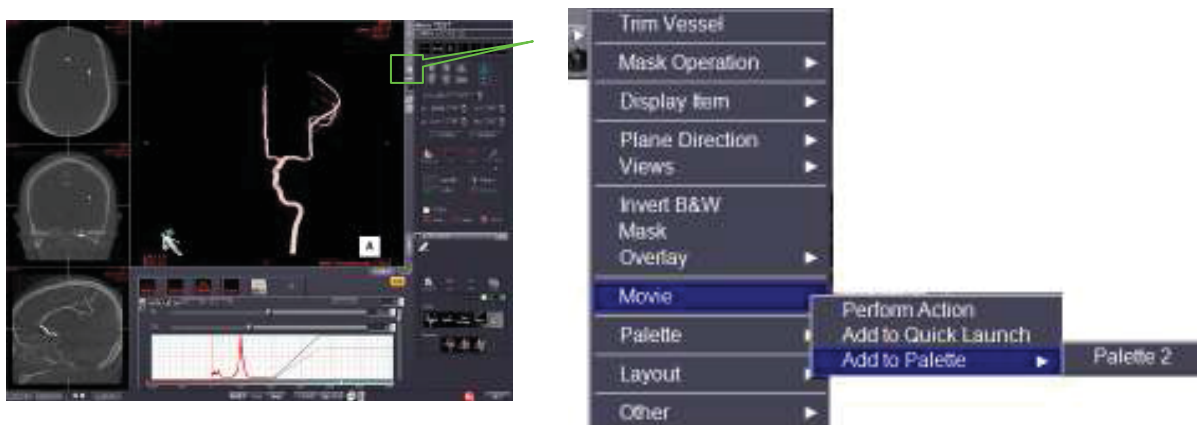
*It can be collected the function used well for the user palette.

a. Arrange the button to user palette.

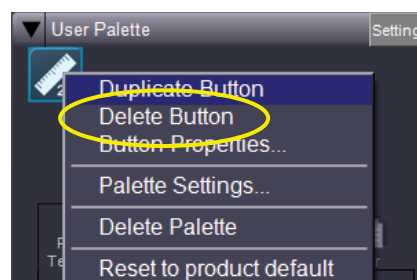


b. Arrange the button of menu item to user palette.

- 1) Click [MENU] and displayed menu, and then right click on the menu item what add.
- 2) Select [Add to palette], and select palette to add.



*In case of delete button of palette, right click on the button, and then select [Delete Button].

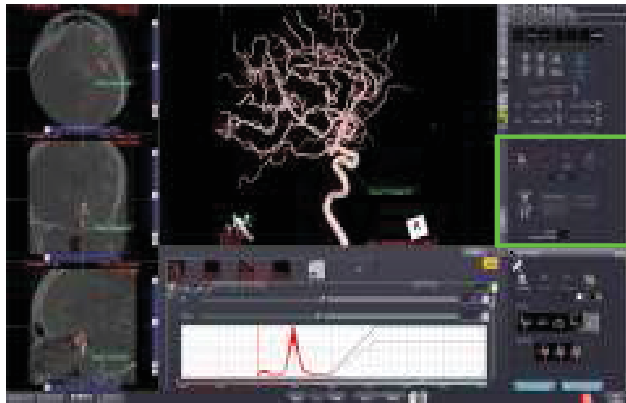


Create VE image

Show a blood vessel virtually.

*VE: Virtual Endoscopy

- 1) Select [VR (trucking)] button on the [CPR] of the tool partition.
It makes a path along the vessel.



- 2) Click the [Start VE] button on the [VE] of the tool partition.
- 3) Entering a check to the box [Use Path].
*Please confirm that [On Path] contains a check.
- 4) It is possible to go forward/back through the blood vessel by turning a wheel of mouse.

★ Capable of creating cine of VE image.

(Please refer to P.15 for the details.)

- 1) Click [Batch] button, and select the VE vision.
- 2) Adjust the slider to set the starting/ending image of the cine, and then click [From]/[To] button.

Select the direction of rotation
(Type is "Use selected VE path")

Type:

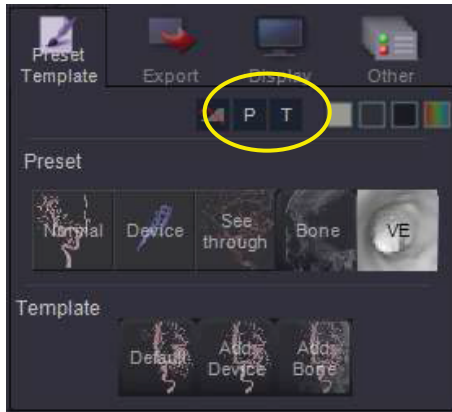


- 3) Select [Number] or [Interval], and input numbers, and then click [Create] button.

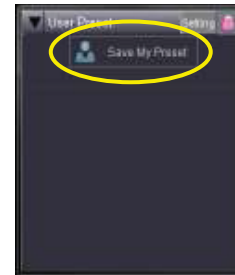

Save Preset

Preset is capable of setting of information including WL, WW, SH and color.

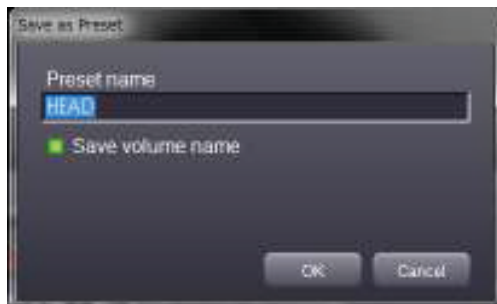
- 1) Click **P** button of the tool partition. And then click the [Save My Preset] on the [User Preset] palette.



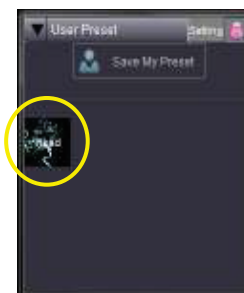
Click the **P**



- 2) Attach the arbitrary name, and then click [OK].




- 3) Choose the palette of the destination, and click [OK].

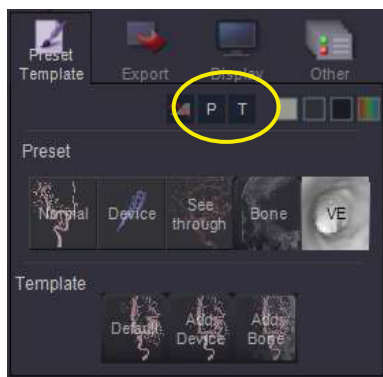



Please confirm that the preset was added.

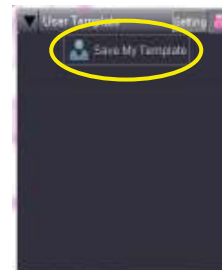
Save template

Template is capable of setting of information including volume information, back ground color, location information and the add volume setting.

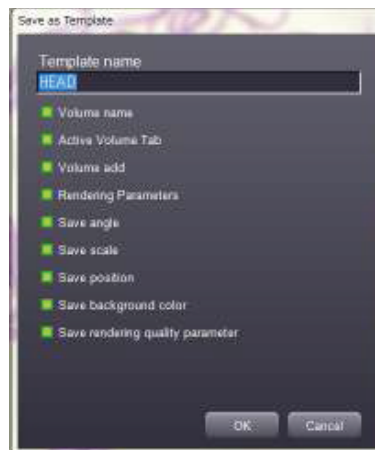
- 1) Click  button of the tool partition. And then click the [Save My Template] on the [User Template] palette.



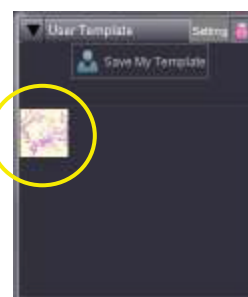
Click the 



- 2) Attach the arbitrary name, and then choose the item which want to store. Click [OK].



- 3) Choose the palette of the destination, and click [OK].



Please confirm that the template was added.