

CardIQ Xpress

VolumeShare 7 • Quick Reference Guide

CardIQ Xpress is designed to provide an easy-to-use and time-effective means for cardiovascular image analysis.

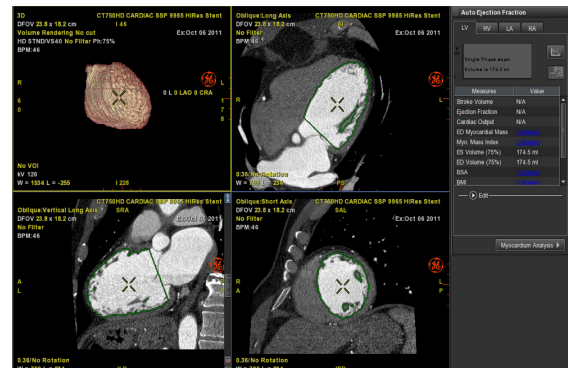
This software can be used to display, reformat and analyze 2D or 3D cardiac CT images for qualitative or quantitative assessment of heart anatomy and coronary artery vessels from single or multiple cardiac phase image data sets. Potential clinical applications include: coronary artery calcification assessment, imaging of cardiac morphology, coronary artery imaging and assessment, bypass graft patency, post intervention follow-up and functional assessment.

- Load series in CardIQ Xpress and select appropriate protocol.



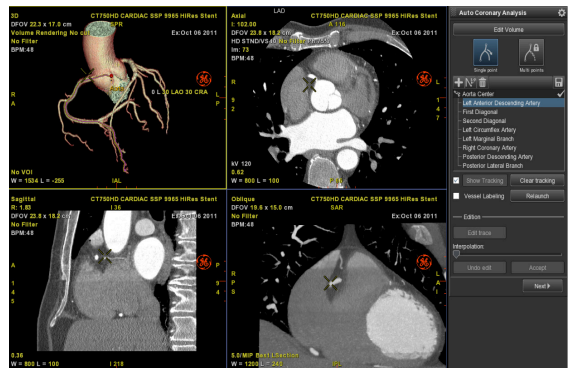
1. Auto Ejection Fraction

Automatically calculates Ejection Fraction along with End Systole, End Diastole, and Stroke Volume for the left ventricle.



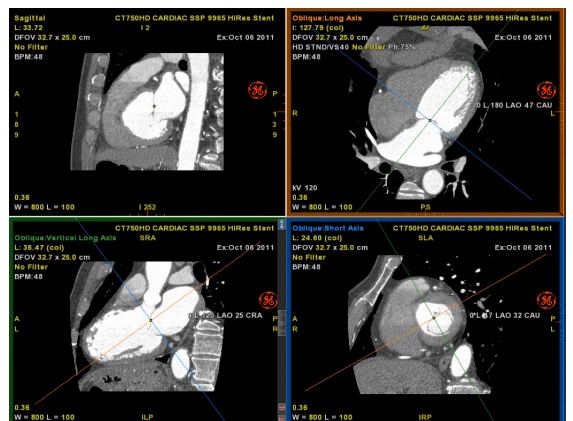
2. Auto Coronary Analysis

Automatic Centerline detection for Right and Left Coronary Arteries and automatic vessel tracking analysis.



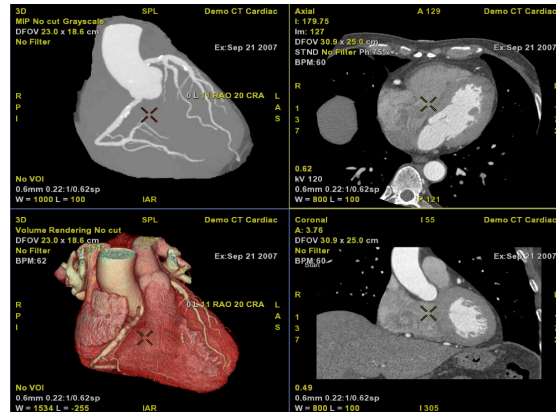
3. Cardiac Reformat

Automatically generates usual cardiac planes.



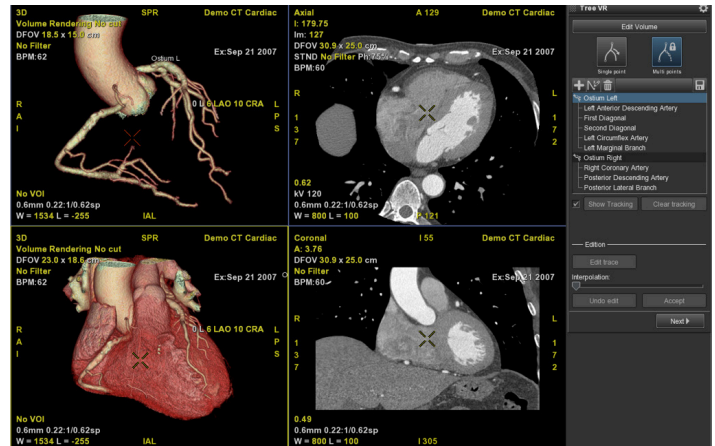
4. Angiographic View

Provides tracking for both Left and Right coronary arteries from an angiographic view image.



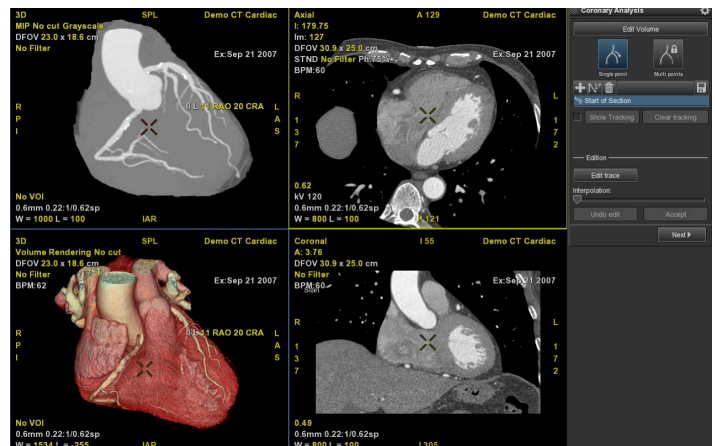
5. Tree VR

Automatically generates a VR model of the coronary arterial tree, and continues with vessel analysis for left and right circulation.



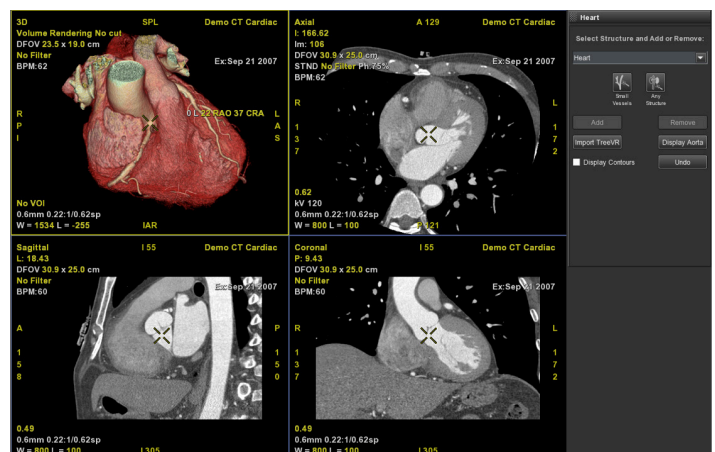
6. Coronary Analysis

Single coronary artery, by-pass grafts, anomalous or tortuous vessels analysis.



7. Heart VR

Creates a VR image of the heart.



Auto Ejection Fraction

- The software automatically calculates and displays LV/RV/LA/RA **volumes** and LV/RV **ejection fractions** for all selected phases (load multiphase series).

The screenshot displays the 'Auto Ejection Fraction' software interface. On the left, there are four CT scan images of the heart in different orientations: 3D volume rendering, Oblique:Long Axis, Oblique:Vertical Long Axis, and Oblique:Short Axis. The right side features a control panel with buttons for 'LV', 'RV', 'LA', and 'RA'. Below these is a graph area showing 'Single Phase exam. Volume is 174.5 ml.' and a table of measures.

Measures	Value
Stroke Volume	N/A
Ejection Fraction	N/A
Cardiac Output	N/A
ED Myocardial Mass	Calculate
Myo. Mass Index	Calculate
ES Volume (75%)	174.5 ml
ED Volume (75%)	174.5 ml
BSA	Calculate
BMI	Calculate

At the bottom of the control panel, there is an 'Edit' button and a 'Myocardium Analysis' button.

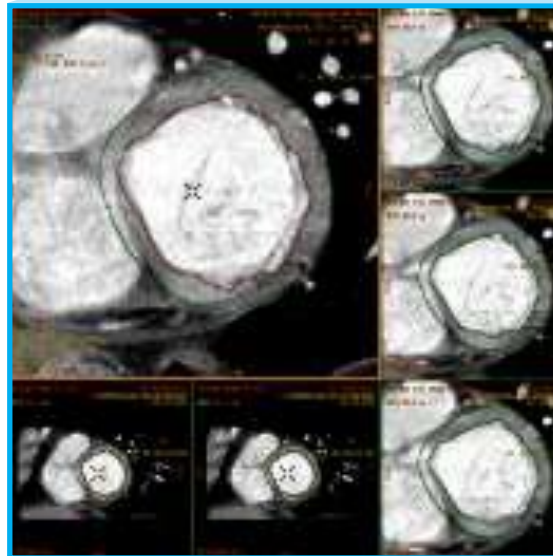
Display results for different **cavities**

Display **volume curves** over phases

Results

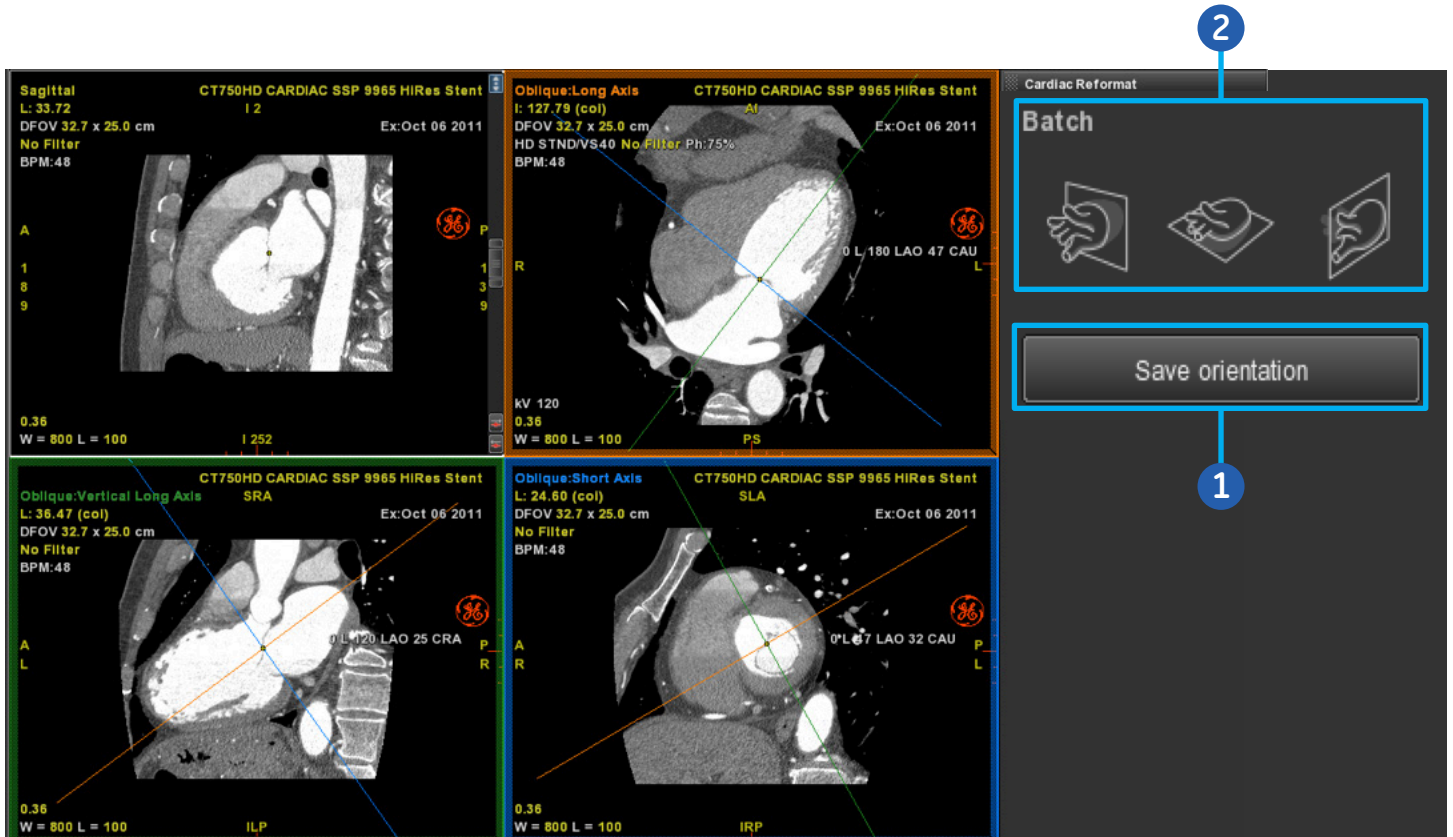
Edit myocardium if needed

Go to **Myocardium Analysis** to edit/calculate myocardial mass, wall thickness, wall motion and wall thickening of left ventricle

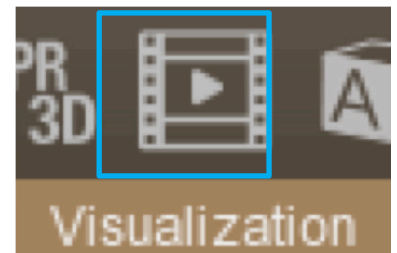


Cardiac Reformat

- This protocol automatically **generates axial, short axis, 2 chambers long axis** and **4 chambers long axis** views.
- **Edit** these planes using the **multi obliques** tool, then **Save Orientation**. (1)



- Use the **batch tools (2)** to do short/long/vertical long axis batch reconstructions.
- When loading a multi-phase dataset, use the Cine icon to view chambers in a phase cine loop.

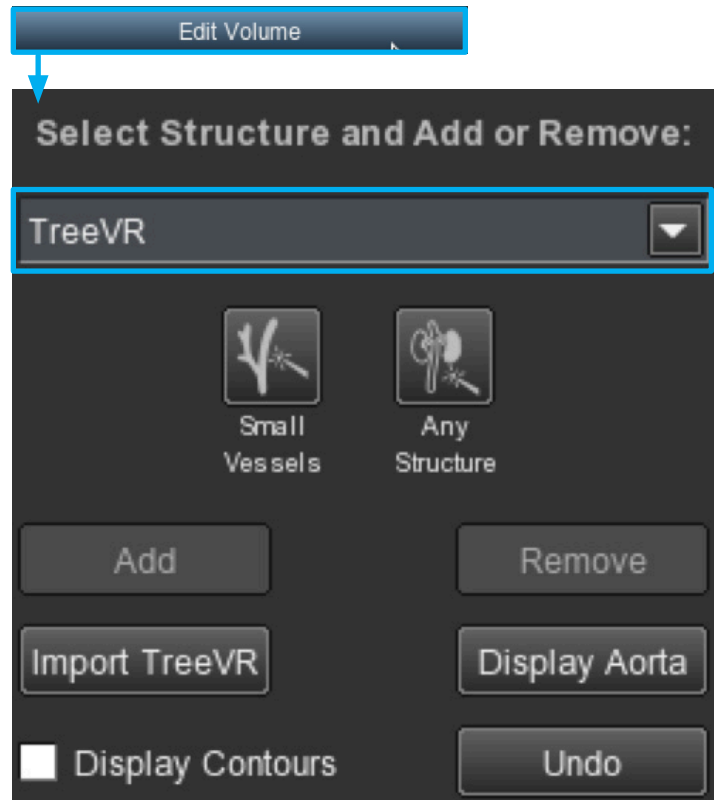


Auto Coronary Analysis / Tree VR

3D Image Display

- The protocol automatically segments a **VR** model of the coronary arterial tree.
- To edit, use **Edit Volume:**
Select **volume to Edit:**
Angioview/ Tree VR/ Heart

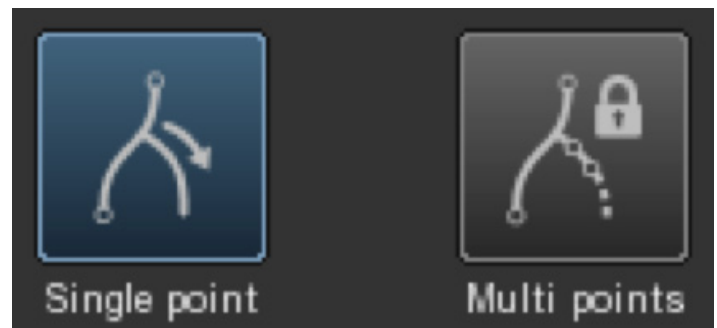
Add or remove structures or vessels on 3D MIP/VR model:
Select **small vessels or any structure** and **add or remove**, and click on structures to add/remove.



Vessel Tracking

- The Aorta center will be placed automatically on the VR. **Highlight corresponding vessel** on VR, then left click to **auto track it**.

Select one **single point** or **multiple points**/clicks per vessel, depending on the tracking complexity.



Save new vascular **protocol**

Clear corresponding vessel's trace

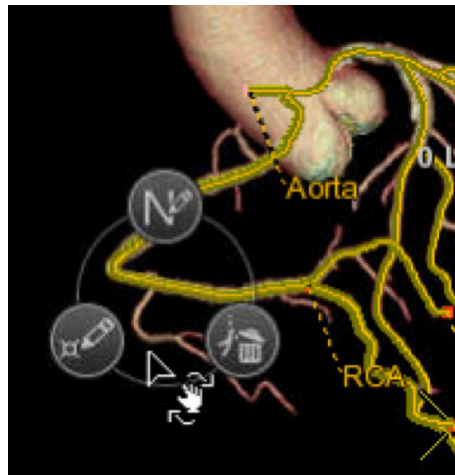
Only select vessels you want to track

Clear all traces

Tick to **auto label** vessels

- **Tracking Edition:**

Right-click on a tracked vessel to display the **contextual wheel** menu.

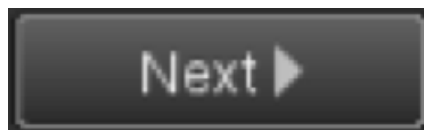


Rename	Edit Trace	Delete Tree
Clear last point	Start Bridge	Validate Bridge
undo	Exit	

Note: If **Single point mode** is selected, **Clear last point** will delete the last vessel that was tracked.



- Then click **Next**



Auto Coronary Analysis / Tree VR

Vascular Measurements

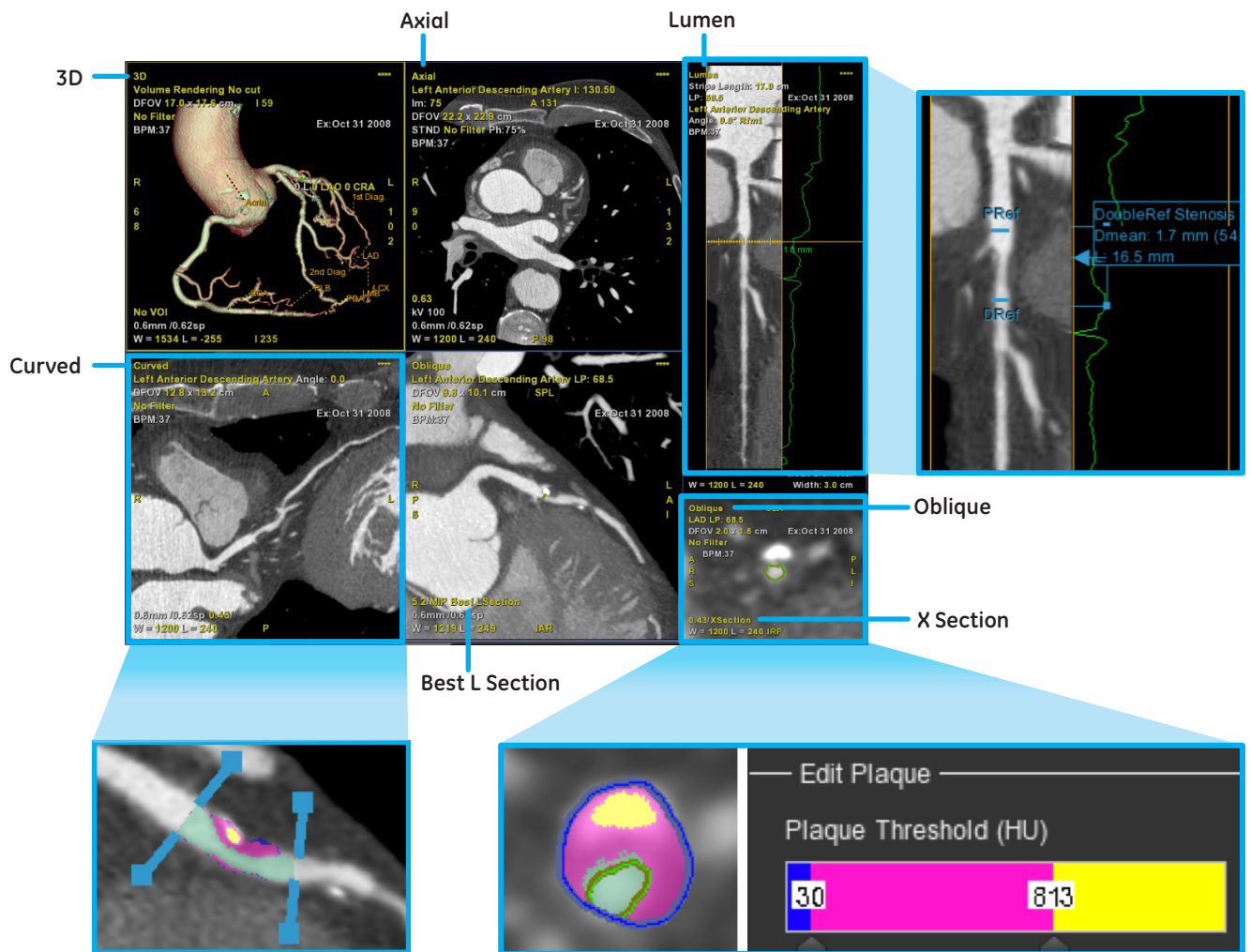
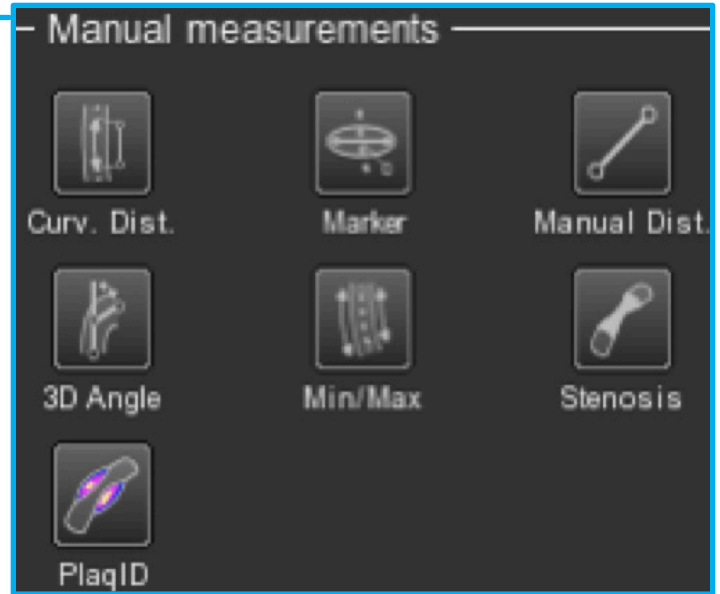
- Select the type of measurement

Most of them require placing two points on the images to measure:

Distances (Curved Distance, Manual Dist, Min/Max)

- **Angle** (3D Angle)
- **Stenosis** within these two points (Stenosis)
- Analyze a **plaque** (PlaqID)

Only one point is required to measure the **Diameters/Area** at this point (**Marker**)





For Stenosis measurements, Results' reliability depends on Reference(s)

- Select **correct reference(s)** (Right click on results)



AND

- **Check** reference(s) and stenosis **contours**: Edit Trace/Section and Accept



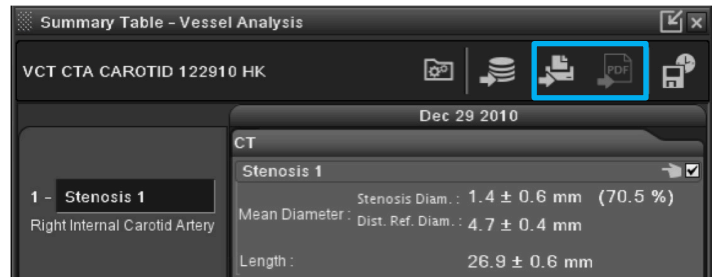
- Right click on measurement to:
 - **Delete** measurement if needed



- Choose **results** to display

- Use **Summary Table**  to create a **report** and **export** it

- To Filmer
- To PDF



- Remember to **save** your work using the **Save State** tool



WARNING! To assure an efficient and safe use of Volume Viewer Apps, it is essential for you to read the User Guides and the Customer Release Notes before attempting to start. The entire documentation is available on your system. Make certain that your documentation is readily available at all times. You shall under no circumstances use Volume Viewer Apps if the documentation is not available. If you need help, please contact the Online Center.

GE, and the GE Monogram are trademarks of General Electric Company.