# Cardiac Viewer Endo Mode

Cardiac Viewer Endo Mode functions are based on the CT Viewer. The following sections cover the unique features of the Cardiac Endo Viewer. For detailed Endo Mode instructions, see section "CT Viewer Endo Mode" on page 49.

The Cardiac Endo viewer is a review function that allows you to perform a general flythrough of heart structures filled with contrast, like cardiac chambers and vessels. You can look for calcium, plaque, occlusions and stenosis in vessels.
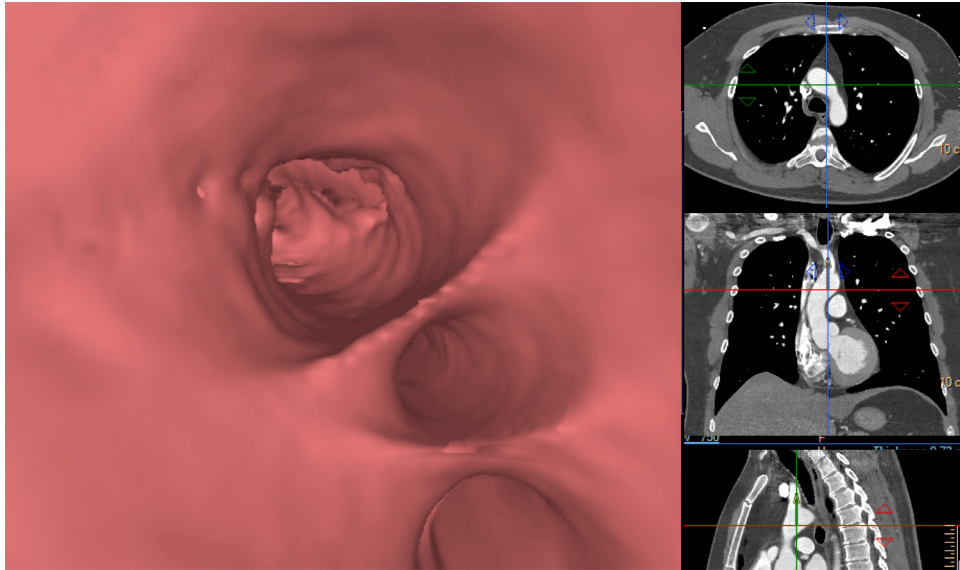
WARNING

Cross sectional images might rotate around the centerline. Please note orientation annotations on images.

In cases where the orientation annotations are not displayed on the image - you must not assume any specific orientation. For correct orientation information - use only the images which display such information.

One or more of the following image types may appear in this application: curved MPR, straightened MPR, volume images, and thick slab images. Measurements you make on such processed images can sometimes be misleading. When saving such images, make sure they are labeled properly.

Objects in thick curved MPR images may appear distorted. Use caution when making measurements on MPR images.

Load Multiple Studies in Application

To load multiple studies in the application:

1. Use the **Ctrl** key when selecting studies from the Directory list.
2. Select the application from the Applications menu.
3. Confirm the studies are from the same patient.

NOTICE

When loading data into an application, ensure the orientation shown on the images is consistent with the images' appearance. This precaution is required for data that contains wrong orientation information because the data will be incorrectly presented within the application.

Locate Structure of Interest

In most cases, the application displays the Endo image from within a contrast filled structure, but occasionally the Endo image appears solid in the display.

This is usually because of a mismatch between protocols.

Locate by Selecting the Correct Protocol

To view the volume correctly, you may need to select the correct protocol icon from the protocol list.

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Locate with Relate Function

Another way to help orient yourself is with the Relate Viewports and Relate Scenes tools. See section "Use Relate to Locate Structure of Interest" on page 52.

Cardiac Viewer Endo Tools

Complete instructions for using the Endo tools are provided in the Endo Viewer section. See section "CT Viewer Endo Mode" on page 49.

Orientation

Two viewing orientations are offered for flythrough: Volume Orientation and Eye orientation. The default viewing mode is Volume orientation.

Flip

Click the Flip button to rotate the endo volume image 180 degrees around the rotation center. The reference images update accordingly.

Layouts

In the Volume orientation the two available layouts are 1+3 and 2x2. (1+3 is the default.)

Show Crosshairs

This function makes visible all graphical overlays (crosshairs, center marks, rotation bar, and arrows). The default is to show crosshair. The intersection of the crosshairs is the rotation center of the Volume orientation viewport.

High Quality

This function adjusts the rendering parameters to display a sharper image to enhance details.

Speed

You can control the speed of navigation by selecting from the drop-down list: Slow, Medium Slow, Normal, Medium Fast and Fast.

Navigate

These arrows control the direction of flythrough. When you are at the start of the flythrough, you can only go forward. When you go backward, the navigation reverses, but the camera viewing direction does not reverse.

Scroll along Curve

This function is only enabled when a curve is loaded (active). See also section "Curve" on page 108.

1. Select **Load Curve**.

2. Select path from the Curve Selection Dialog box.

3. Click **OK**.

Now when you scroll, the image moves along the active curve. Scrolling in this mode does not affect the rotation center of the scene (the arrow and rotation bar do not move).

Cardiac Viewer Endo Functions
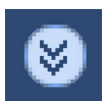
To access additional Endo Viewer functions, click the down arrow in the tab window, or hover the mouse over the tab window. The list of available functions displays.

See **Report**, **Film**, **CT Common Processes** and **CT Common Tools** for information on using common options, tools, functions, and processes.

Series

The Series tree displays a list of the studies and series that are loaded into the viewer, and also other elements (like batches) that have been created.

Bookmarks

While using a viewer or an application, you can record a bookmark at any time to "save the current status" of your work.

Curve

The Curve function allows you to draw a curve (or load an existing curve) to produce a curved path to produce a Curved Planar Reformat (cMPR) image, or a curved path for the Endo viewer's fly through function.

To create a curve in Endo mode, first do a flythrough, then click "Create Curve from navigation." The curve is added to list as "Navigation Path."

See **Report**, **Film**, **CT Common Processes** and **CT Common Tools** for information on using common options, tools, functions, and processes.

Batch

The Batch function allows you to create a series of sequential slab images for viewing, saving, reporting and filming purposes.

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Tissue Management

The Tissue Management function allows you to control the viewing of the active tissue, based on the tissue definitions for the current study that have been created in the current work session, or that were previously saved for this study, from this and other applications.

Flythrough without Active Curve

To begin using the Endo viewer, drag the middle of the crosshair to the desired location (for example, a vessel or a heart chamber). The center of the crosshair represents the "eye" (or the camera) from which the endo image is created.

1. Using the cross hairs on the reference images and using image scrolling, bring the cursor to the desired starting point.

2. Select a speed.

3. Click the Forward arrow. The mouse cursor becomes a double-ended arrow.
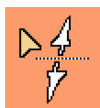
4. Click on the Endo viewport. The flythrough begins.

    Play Forward always navigates away from you, "into" the display. Play Backwards always navigates toward you, "out of" the display.

5. Navigate through the structure by moving the mouse toward the desired location in the image.

6. To stop the flythrough, left click on the Endo viewport.

7. To resume, click again on the Endo viewport.

8. To exit the flythrough mode, click any common tool.

Flythrough with Active Curve

If a curve exists for this study, the Activate Curve button is in full color. If no curve has been saved (or created in another view mode, like Slab or Volume), the Activate Curve button is grayed out, and flythrough with an active curve is not possible.

1. Click **Activate Curve**.

2. Select one of the curves.

3. Select a speed.

4. Click **Forward**. (The flythrough always starts at the beginning of the curve.)

5. Click on the Endo viewport. The flythrough begins.

6. To end the flythrough, left click on the Endo viewport.

7. To continue, click again on the Endo viewport.

Start Navigating Along a Different Curve

Stop the flythrough by clicking on the Endo viewport. Click **Select Active Curve**. Continue as above to fly through an active curve. The flythrough always starts at the beginning of the new curve.

Switch to Manual Navigation

Click the **Activate Curve** button (so it appears unpressed).