STEREOTAXIS

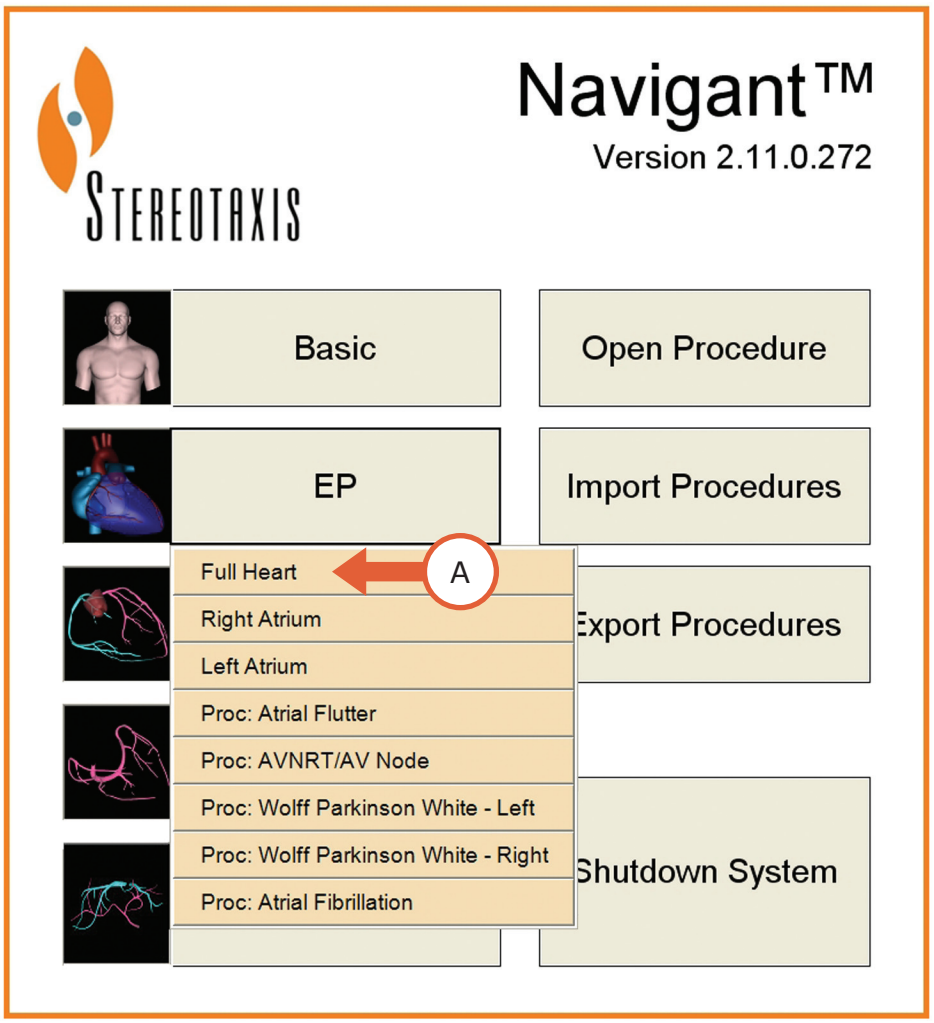
ELECTROPHYSIOLOGY NAVIGANT™ V2.11

RIGHT VENTRICULAR OUTFLOW TRACT MAPPING FOR VENTRICULAR TACHYCHARDIA

Getting Started

The **Opening Screen** displays the application procedure selection menu. Choose an application (**EP** for electrophysiology).

Choose from the drop down menu to select the type of procedure (A). Select **Full Heart** for this procedure.

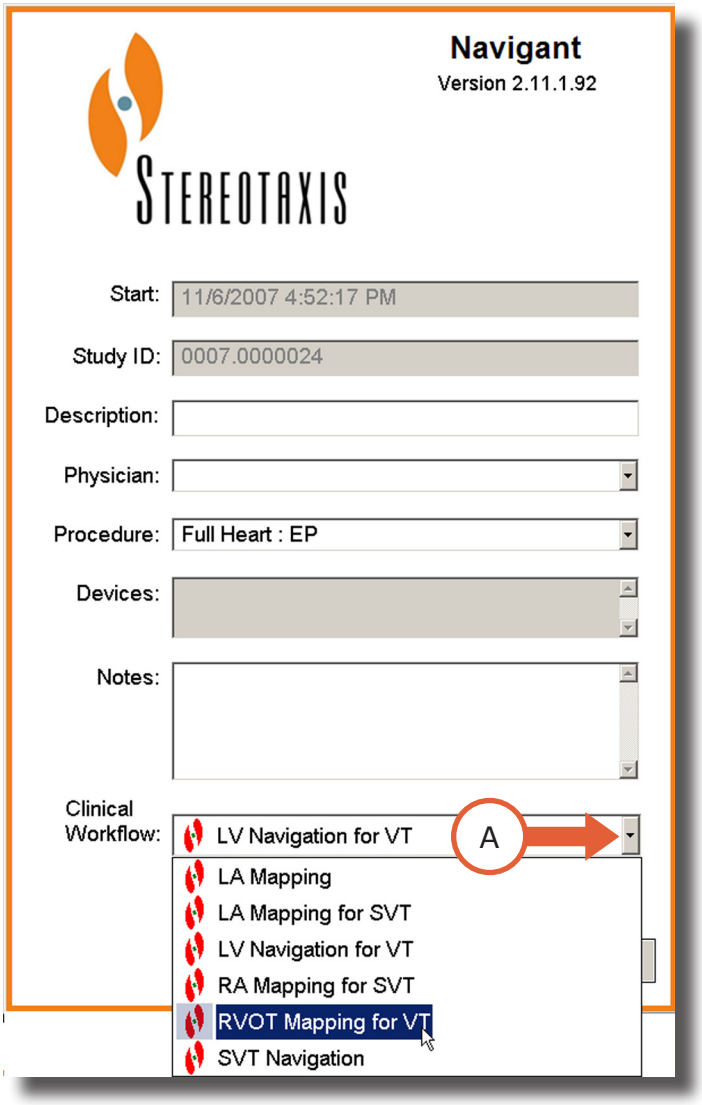


Opening Dialogue Box

Choose a Clinical Workflow

Once the procedure has been selected, the **Procedure Information Window** will appear. A start date, time, and a study ID are automatically assigned. Fill in the description and physician's name by typing or selecting from a drop-down list if available.

The devices window will be grayed out.



Information Window

TIP

You must fill in the physician and description in order to save a physician layout.

Click the triangle (A) and select the Clinical Workflow from the drop down menu.

Click **OK** once the **Clinical Workflow** has been selected. The Navigant main screen will appear.

Clinical workflows are designed to facilitate case progression in the following ways:

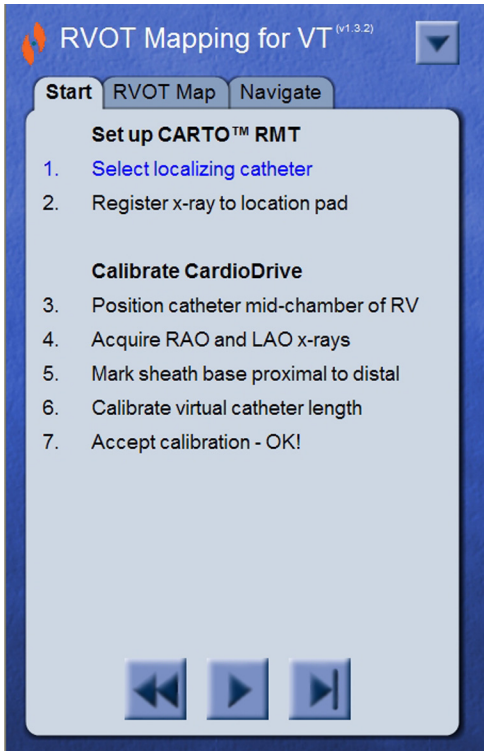
- By providing a simple step-by-step approach to automation and integration
- Keeping navigation and control options easily accessible throughout the case

The Clinical Workflow Manager menu will be on the left side of the monitor. Click **Execute ►** to advance to the next numbered step.

Once all the steps have been completed, use the **Execute ►** button at the bottom of the tab window to advance to the next tab window.

Each tab on the CWM lists steps pertaining to a part of the procedure. By progressing through the appropriate steps, you can complete a portion of the study.

CWM Tab Controller buttons:
Start Over (left)
Execute Step (middle)
Next Section (right)

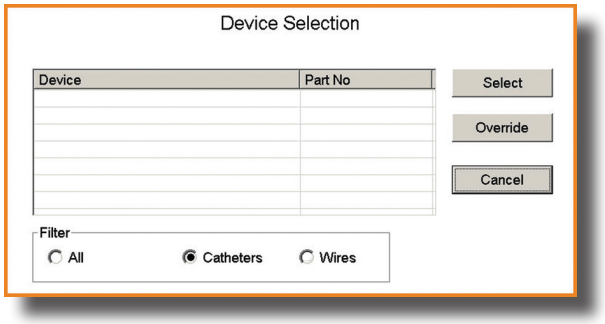


CWM with the Start Tab open

1. Select localizing catheter

The device selection window opens automatically. Click the **Override button** to view the menu of available catheters. Either double-click the option of choice or select one, then click **Add Device** to choose a device.

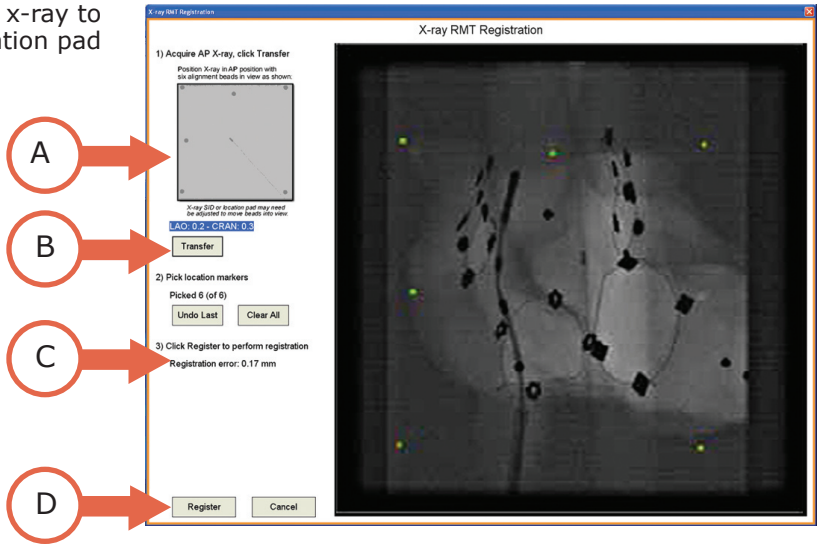
Device Selection Dialogue Box



2. Register x-ray to Carto location pad

- The registration screen will automatically appear.
- Ensure all six radiopaque markers are visualized on fluoro as seen on the reference template (A).
- Transfer an AP image by clicking the transfer button on the registration screen (B). Select all six markers with mouse clicks. At this time, a registration error will be displayed on step 3 of the registration screen (C).
- The registration error must be below 1.0 mm. If greater than 1, select clear all and remark.
- Select register (D).

Step 2: Register x-ray to location pad



Section 2: Cardiodrive

Calibrate Cardiodrive

3. Orient catheter for alignment

Position the catheter so the tip is located in the center of the right ventricle. Selecting this step will apply the initial magnetic field.

4. Acquire RAO and LAO x-rays

Acquire and transfer RAO and LAO images (must be a minimum of 40° apart).

5. Mark sheath base proximal to distal

This step identifies the anatomical location of the catheter's entry point.

a. Position the mouse over one of the transferred fluoro images where the catheter enters the chamber
b. Click and drag the mouse over the catheter shaft from proximal to distal (a short segment)
c. A red line will appear indicating the path
d. Repeat steps a. and b. on the second fluoro image using the yellow dotted line as a position reference. A pop-up will appear asking that you accept or reject the identified sheath base.
e. Once accepted, the sheath base will appear

6. Calibrate CAS length

The calibrate window will pop-up and the yellow virtual catheter will appear.
Click advance or retract to set the length of the virtual catheter equal to the length of the actual catheter.

TIP

Do not move the Cardiodrive during the calibration of the CAS length.

7. Retract catheter to the retraction limit

Using Cardiodrive micro-navigation tools retract the catheter until the middle magnet of the catheter tip is in the tricuspid valve region.

8. Set the CAS retraction limit

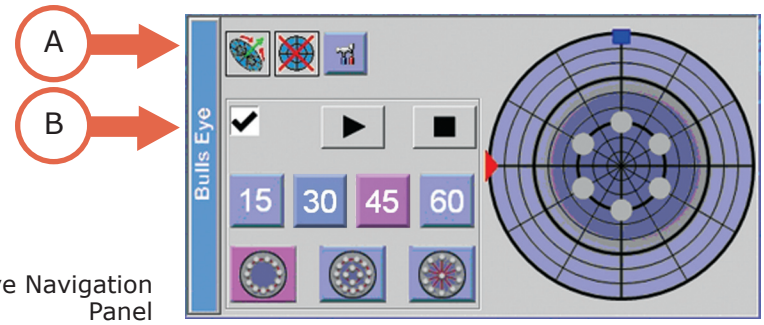
By clicking this step, Navigant stores the retraction limit, and will prevent the catheter from moving past this point during automated movements.
Click **Execute ▶** to advance to the next tab.

RVOT AutoMap

The RVOT AutoMap feature of Navigant creates a map of the right ventricular outflow tract. It utilizes circumferential navigation to assess and record activation throughout the RVOT.

- Prior to initiating the AutoMap it is important to position the catheter appropriately.
- This feature will circumferentially map the RVOT from superior to inferior.
- It is recommended to utilize electrogram signals to assist in the determination of tissue contact.

When the AutoMap feature is initiated, the Bulls Eye control panel (A) will be displayed on the Navigant screen. The Bulls Eye will give a visual representation of the sequence of catheter movements.



Bulls Eye Navigation Panel

The numbers 15, 30, 45 and 60 are the degrees from the center of the outflow tract. The program assumes the catheter is at the center and the correct distance will be pre-selected based on the workflow.

The ON check box, execute/advance button and stop button (B) are for use in the manual mapping mode.

TIP

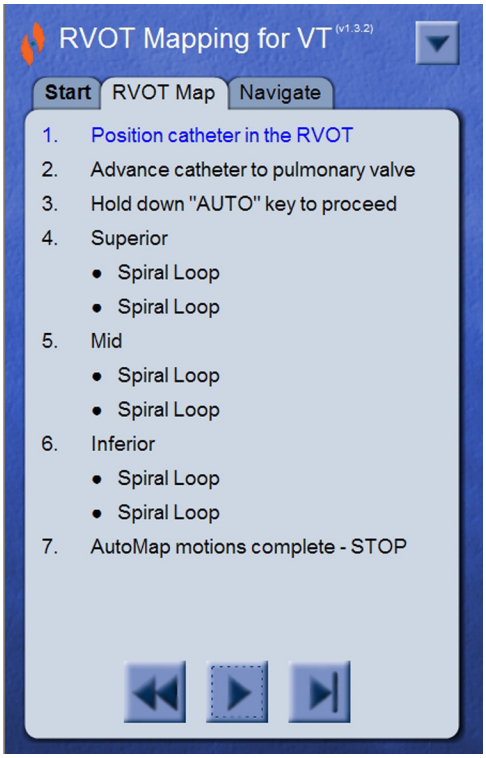
Use the numbers across the top of the keyboard to change the CAS step size. The range is from 1 to 9 mm.

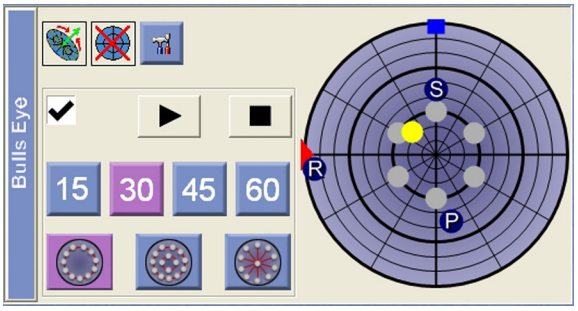
RVOT Map Tab

The RVOT Map tab provides the ability to auto map the right ventricular outflow tract by using the numbered steps provided.

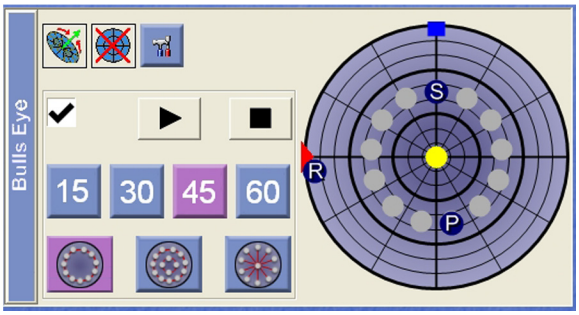
After selecting step one, the program will set the field direction automatically. Step one requires the advancement of the catheter to the level of the pulmonary veins in the RVOT.

Step two will set the existing field direction as the center of the Bulls Eye.





Bulls Eye panel after step 1 is selected.



Bulls Eye panel after step 2 is selected.

Prior to pressing the Auto key on the Navigant keyboard set the RMT Acq to None or auto accept on the Carto RMT Monitor.

Press and hold the Auto key and the Navigant system will initiate the auto mapping sequence changing the field direction and advancing or retracting the catheter as needed.

If the Carto RMT is in "**auto accept**" mode the Navigant MNS will manipulate the catheter and acquire points into the map without any additional action required by the user.

Carto RMT Acq Button
Choose Auto Accept or None

If the Carto RMT is in the "**none**" mode the Navigant MNS will manipulate the catheter but the user must manually "**Freeze**" and "**Accept**" the points on the Carto RMT system. The auto map sequence will place the catheter at a location and wait for the user to "freeze" a point prior to advancing to the next location.

Carto RMT
Freeze Buttons

The **Auto Accept** mode has the advantage of being faster in creating the map. However the user should review the map points for accuracy once the auto map of the chamber is completed.

The "**None**" mode allows the user to assess each point prior to accepting it into the map. This will add time to the procedure but the user will be assured of an accurate map on completion of the sequence.

TIP

Once the mapping is completed the Navigate tab can be enabled for additional tools to assist in the treatment of the patient's arrhythmia.

RVOT Map Tab

Select the third step on the tab. Then hold down the **Auto** (B) key on the keyboard and the auto mapping function begins. The chamber regions will be mapped in the sequence on the tab.

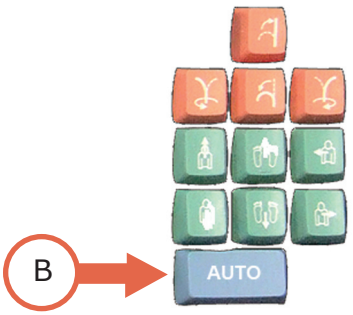
The **Auto** key (B) must be depressed for the duration of the auto map sequence. If it is released the sequence will pause until the **Auto** key is again depressed.

The map is created using the steps:

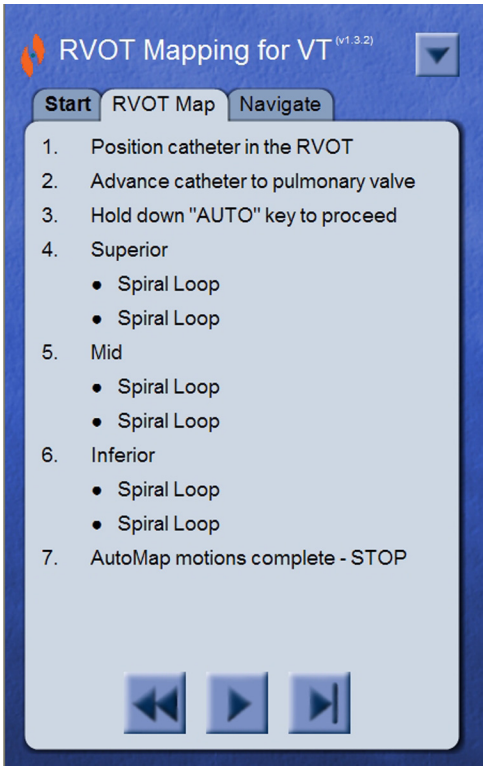
- **Superior**
- **Mid**
- **Inferior**

Once the sequence is completed the **Auto** key can be released. The final step will be automatically selected when the auto map sequence is complete.

Press **Execute** ► to advance to the next tab.



Auto Key on the Navigant Keyboard



CWM showing the RVOT Map Tab

The Navigate Tab

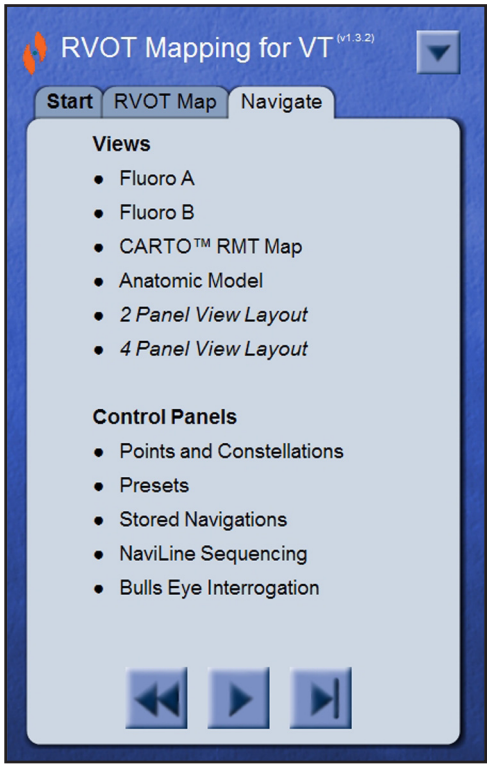
The navigate tab allows customizing of the images, palettes, and tools on the Navigant screen.

The Views section of the tab allows the display of:

- Fluoro (A and B)
- Carto RMT Map
- 3D Map View
- Anatomic Model
- Layout Views (2 or 4 panel)

The Control Panels section allows the display of the different tools to assist in the procedure. The panels are displayed above the image windows.

- Points and Constellations
- Presets
- Stored Navigations
- NaviLine Sequencing
- Bulls Eye Interrogation



CWM showing the Navigate Tab