

# Taking simplicity to heart

**Philips HeartNavigator** supports treatment of structural heart diseases

Minimally invasive treatment of structural heart diseases, such as Transcatheter Aortic Valve Implantation (TAVI) procedures is becoming more popular as an alternative to surgery for very high-risk patients. These procedures, however, are challenging and complicated, and experience is required to perform them skillfully.

## Key advantages

- Simplifies planning, device selection, and choice of optimal X-ray viewing angle
- Provides additional live 3D imaging guidance during device placement
- Gives insight into calcified plaque distribution in the ascending aorta and ostia of the coronaries

**PHILIPS**  
sense and simplicity

# HeartNavigator provides planning support and live image guidance

Philips HeartNavigator is an interventional planning tool that makes it easier for you as a surgeon or interventional cardiologist to quickly increase your confidence in carrying out structural heart disease procedures. It simplifies planning, device selection, and projection angle selection in preparation for the procedure. During the procedure, HeartNavigator provides live image guidance to support you in positioning a device.

## **Fast and confident planning**

Conventional image guidance software often involves many tedious manual calculations that have to be performed in the control room. HeartNavigator provides automated planning to help simplify complex structural heart disease procedures. It creates an excellent 3D image from previously acquired 2D CT datasets. These 2D datasets are reconstructed to a 3D volume rendered data which are overlaid with the live fluoro image to provide real-time 3D insight during the procedure. With one click, the heart is automatically segmented to visualize anatomical structures and landmarks.

Virtual device templates can then be used to assess and select the appropriate device size and the best projection for the patient's individual anatomy.

## **Selecting the optimal X-ray view**

Usually, multiple low-contrast aortograms are used to select the optimal plane for device deployment. The HeartNavigator image visualizes the aortic root in various ways, as well as showing the calcification distribution. The software then determines the best projection for the procedure and you can store additional projections as needed.



“I plan all my cases with the HeartNavigator. I trust the measurements with HeartNavigator more than the measurements provided by the normal CT scan.”

*Dr. H. Schröfel, Heart Surgery Clinic, Karlsruhe, Germany*



### **Increased confidence during procedures**

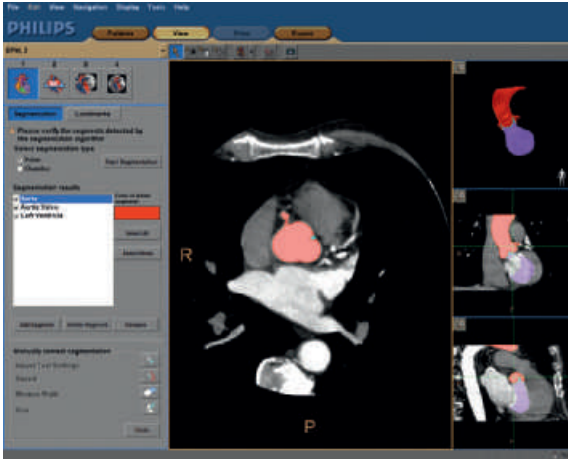
During the procedure, you match the live fluoroscopy image with the 3D image of the ascending aorta to show the exact position of all catheters and devices in relation to the reference image. This provides you with more guidance and information to check the size of the device and its correct position. After placement, you can evaluate device placement while the patient is still on the table. Having these images available in the hybrid OR or cathlab can shorten these procedures.

HeartNavigator is integrated with Philips Allura Xper X-ray systems, meaning the various X-ray views can be stored and recalled on the X-ray system, which will automatically move to that projection. The C-arc moves to the X-ray projection chosen and, vice versa, the 3D image automatically follows the orientation of the C-arc in real-time. The overlay image of the 3D image data and live fluoroscopy are shown on a separate monitor, in addition to the normal monitor which shows just the live fluoro image.



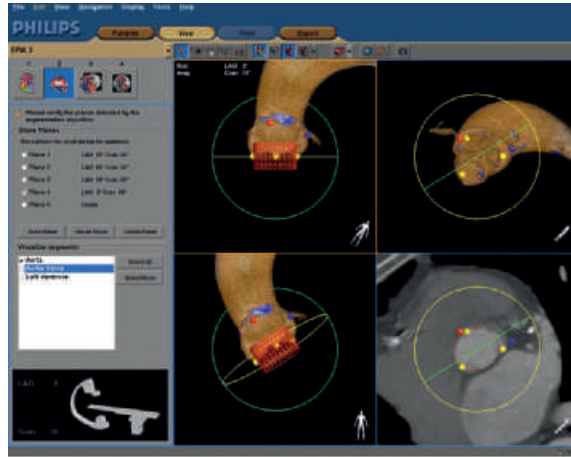
## Simple real-time guidance

**Step 1. Automatic segmentation.** The DICOM CT dataset is automatically segmented to show anatomical structures and landmarks.

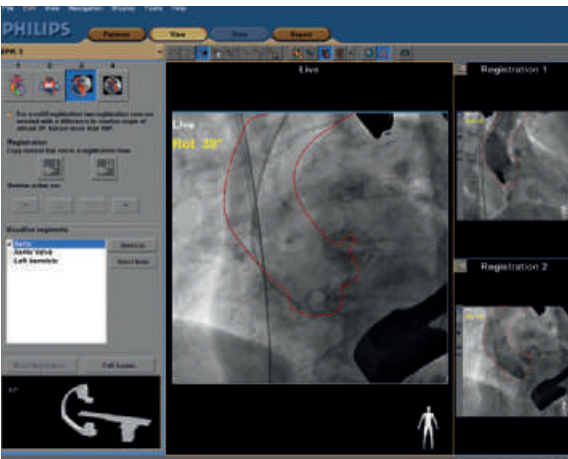


## Step 2. Device selection and view planning.

Different virtual device templates can be used to check the size of the device. The software selects the optimal projection view for the procedure. You can store various X-ray views for use during the procedure.



**Step 3. Import and match images.** The software automatically imports the live X-ray images. The user manually matches the 2D images with the 3D dataset.



**Step 4. Live overlay image.** During the procedure, you can use the 3D reference image on the normal monitor and the 3D live overlay on the X-ray image to get real-time feedback as you navigate through vasculature. The overlay automatically follows the C-arm position and all system movements can be controlled at tableside.



This product is not yet available in Canada

Please visit [www.philips.com/heartnavigator](http://www.philips.com/heartnavigator)



© 2011 Koninklijke Philips Electronics N.V.  
All rights are reserved.

Philips Healthcare reserves the right to make changes in specifications and/or to discontinue any product at any time without notice or obligation and will not be liable for any consequences resulting from the use of this publication.

Philips Healthcare is part of Royal Philips Electronics

[www.philips.com/healthcare](http://www.philips.com/healthcare)  
[healthcare@philips.com](mailto:healthcare@philips.com)

Printed in The Netherlands  
4522 962 76791 \* AUG 2011