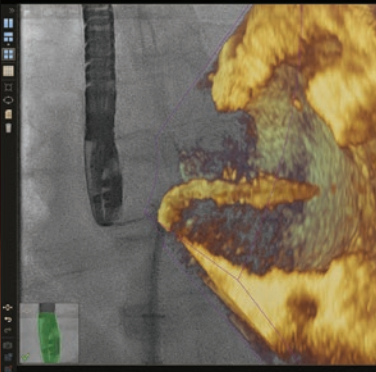


**PHILIPS**

EchoNavigator

Interventional Cardiology



# Making the difference with **Live Image Guidance**

Fusing live X-ray and live echo for intuitive guidance  
during structural heart disease procedures



# Making the difference with Philips Live Image Guidance

With our Live Image Guidance we aim to remove barriers to effective and reproducible treatments, delivering relevant clinical value where it's needed most – at the point of patient treatment.

## Tackling the challenges associated with structural heart disease

Increasing numbers of patients with structural heart disease can be treated with catheter-based techniques, thanks to a growing number of suitable devices. Yet performing complex procedures such as mitral valve repair, septal defect closure, ASD closures, trans-aortic valve implantation/repair, left atrial appendage closure and paravalvular leak closure remain challenging. Long procedure times and steep learning curves are common.

(3D) transesophageal echocardiography (TEE) imaging provides critical insights into soft tissue anatomy as well as function and flow information, whereas X-ray is invaluable for visualizing devices. These images, however, are represented differently, so valuable time and effort was often channeled into mentally aligning them. But not any more...

## Key benefits

- Live Image Guidance lowers barriers when treating structural heart disease
- Enhanced communication and teamwork in the lab helps simplify procedures
- Enhanced confidence in anatomy and device targeting
- Easy to use and easy to understand, so interventional cardiologists and cardiac surgeons can utilize live 3D echo efficiently



# Greater insight and confidence in finding and treating the problem



EchoNavigator tackles this issue head-on by automatically fusing live TEE and live fluoroscopic images, in real-time. This unique feature, known as SmartFusion, allows you to intuitively and quickly guide your device in the 3D space.

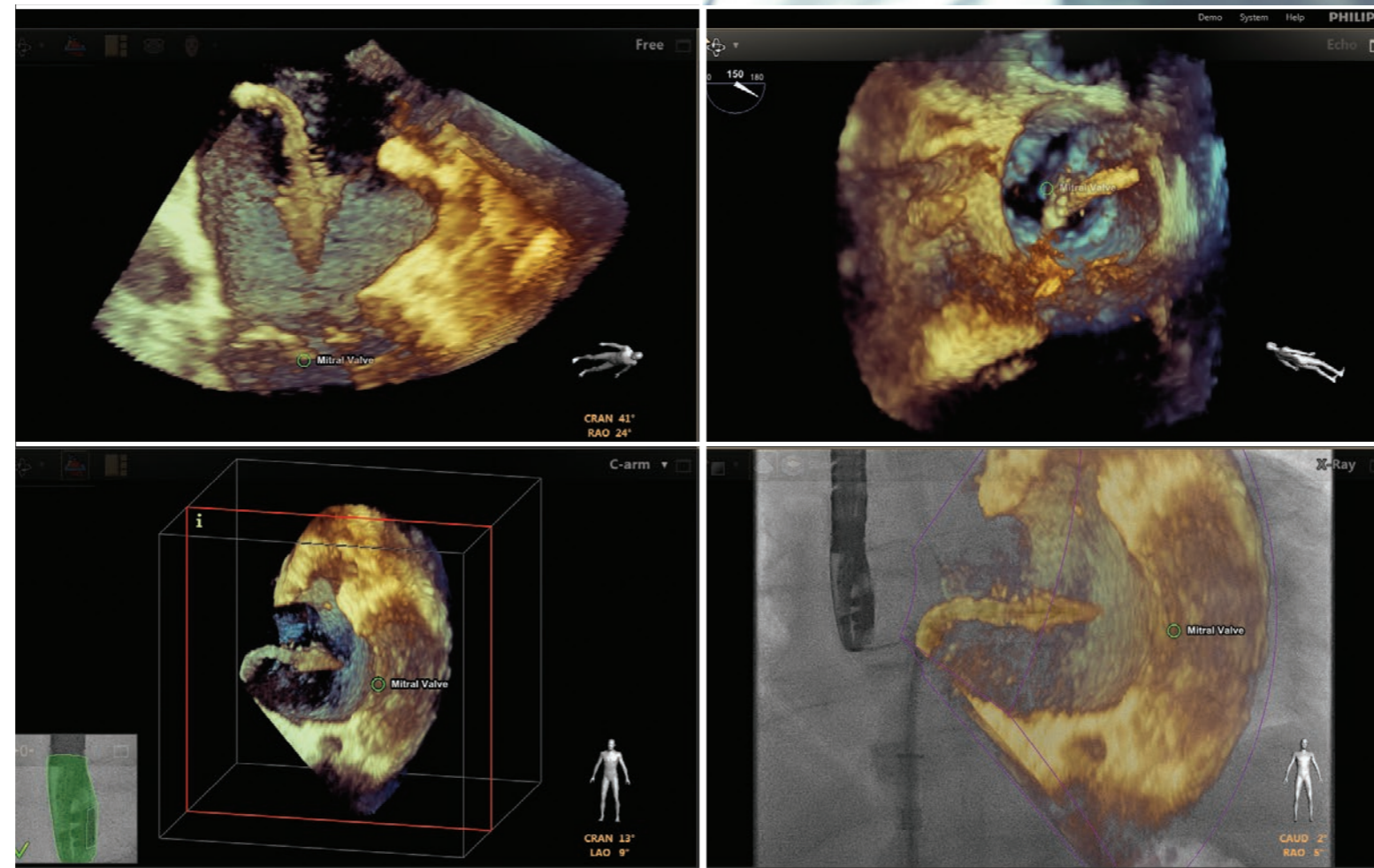
Image courtesy of Dr. Carroll & Dr. Salcedo, Colorado University, USA

The TEE transducer position and orientation is automatically tracked in the X-ray image, allowing the echo and X-ray images to move in sync when the C-arm is repositioned. Markers placed on the soft tissue structures within the echo image automatically appear on the X-ray for context and guidance. The TEE field of view (cone) is also displayed as an outline for additional reference.

## Simplified navigation, device placement and results evaluation

Up to three different echo views of anatomical structures can be shown simultaneously to deepen understanding of soft tissue anatomy and the device location. This gives clinicians a clearer impression of the spatial relationship between the catheter and the soft tissue around it.

Changing views of the anatomical structures in the echo data can be carried out from tableside as required. All of this is designed to simplify navigation, device placement and evaluation of results during structural heart disease procedures



“The fusion of live fluoroscopic and live echo images helps in understanding the relationship between soft tissue anatomy and devices for fast and accurate interventions in structural heart disease.”

**Professor John Carroll, MD,**  
interventional cardiologist,  
University of Colorado, Denver



# Overview of the key EchoNavigator clinical functionality

- Real-time fusion of live echo and live X-ray images for intuitive guidance
- Markings placed on soft tissue, in echo, automatically appear in the X-ray image (for context)
- Echo and X-ray images move in sync when the C-arm is repositioned
- Three TEE perspectives of the anatomy are simultaneously displayed in real time
- Examine echo data, change the viewing direction and zoom in/out at tableside
- 3D TEE field of view (cone) visible on the X-ray image for additional reference

## Enhancing teamwork and communication in the lab

Clear communication and understanding are necessary between the echocardiographer and the interventionalist or surgeon to facilitate reaching agreement on how to proceed. By automatically fusing echo and X-ray images with each other, EchoNavigator speeds up this process, bringing clarity and enhancing teamwork within the lab.

This enhanced teamwork can facilitate device maneuvering, which helps simplify procedures. We also recognize the need to assist with training aimed at developing a rapid and thorough understanding of

this breakthrough solution for treating structural heart disease. That is why we offer a wide range of support options to help you get the most out of EchoNavigator.

## Delivering clinical value in treating structural heart disease

EchoNavigator's Live Image Guidance means you can carry out pioneering work with your heart team, performing procedures in an intuitive, streamlined and coordinated way. EchoNavigator lets you grow your SHD program by supporting new procedures and techniques that truly make a difference to those suffering from structural heart disease.







Find out more about  
Philips Live Image Guidance

Printed in the Netherlands  
[www.philips.com/echonavigator](http://www.philips.com/echonavigator)

4522 991 04031 \* JUL 2014