Making the difference with Live Image Guidance

Treating cardiac arrhythmias
Making the difference
with Philips Live Image Guidance

Whether performing an ablation or implanting a CRT device, understanding and navigating through cardiac structures can be challenging.

Long procedure times make it crucial to reduce radiation exposure for patients and staff. And with the need to handle many different types of equipment and information sources, establishing an efficient workflow can be far from trivial.

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

Intelligent and intuitive integration of multi-modality imaging, recording, mapping, robotics and IT applications provides you with optimal ease of use, allowing you to streamline your workflow for increased lab efficiency. Our advanced 3D imaging tools give you insight into complex cardiac anatomies, and help you to navigate your catheters with confidence.

Our AlluraClarity family with ClarityIQ technology enables physicians to deliver fast, effective, and simplified electrophysiology procedures, with an efficient clinical workflow. All while reducing radiation dose by 50% in minimally-invasive electrophysiology procedures and maintaining image quality.

Together, we drive growth and we open doors to new procedures and techniques that truly make a difference in people’s lives.

Free EHRA webinar: Minimizing radiation dose for EP physicians, patients and support staff

This webinar will review some very practical steps that can be implemented to reduce the exposure during interventional electrophysiological procedures.

Two key opinion leaders who will give useful tips for your daily clinical practice.
- Professor Hein Heidbuchel
  Department of Cardiology University Hospital Gasthuisberg, Leuven (Belgium)
- Doctor Lukas Dekker PhD
  Cardiologist, Catharina Hospital (Netherlands)

Visit www.philips.com/epwebinar to learn from key opinion leaders.
Real-time imaging of cardiac structures is a cornerstone of the electrophysiologist’s ability to efficiently and accurately guide a catheter through the anatomy of a beating heart. However, 2D imaging has obvious limitations when navigating through complex and highly variable 3D anatomical structures. Having access to 3D data fused with real-time 2D imaging has the potential to increase the speed and precision of procedures.

**Greater insight and confidence**
in finding and treating the problem

**EP Navigator – clear insight into cardiac anatomy**
EP Navigator facilitates intuitive 3D catheter image guidance during AF ablation procedures. It provides detailed 3D anatomy, which can be overlaid onto live fluoroscopy, removing the need for a mapping system, or exported to a compatible mapping system to help minimize dose and reduce procedure time.

“...The advantage is that we have a more up-to-date left atrium volume. It is the volume and the filling status of the patient during that date. The advantage with the 3D rotational angio is that it happens in only one room, which is the cath lab and there is no interaction needed with the radiology department et cetera. And finally the advantage is that using the 3D rotational angio allows a more actual registration compared to integration with CT or MRI.”

**Key benefits**
- Enhanced visualization of 3D cardiac anatomy
- Intuitive catheter navigation
- Integrated images for enhanced orientation and tissue visualization

Prof. Dr. M. Duytschaever,
St. Jan Hospital, Bruges, Belgium
Point Tagging
Point Tagging allows you to accurately mark ablation points and can be used with all catheters in the field.

EP Navigator with different mapping systems
Biosense Webster Carto™ UniVu with exported 3D anatomy from EP navigator enhances orientation in the mapping environment and has potential to reduce X-ray dose.

St. Jude Medical Ensite™ with exported 3D anatomy from EP navigator

Unique capabilities
- Fully automatic segmentation of the cardiac structures
- Reduced angular 3D rotational scan at the time of the procedure, avoiding interference with anesthesia logistics
- Inspect and measure pulmonary veins effortlessly

Stay focused during complex EP procedures
To help you stay focused during complex EP procedures, the next generation of our EP navigator tool offers faster and simpler workflow. Your 3D volume is now automatically segmented to show the left atrium (LA) and esophagus, saving 5 to 10 minutes of tedious clicking. You can measure the pulmonary veins (PV) and left atrium dimensions and easily view the PV. Registration is done automatically, and registered data can be exported to all standard mapping systems so you don’t have to re-register it. To get an immediate reference point, you can view the rotational scan by different anatomical planes.

“The challenging part of the entire procedure is to burn the ridge between the lateral veins and the left atrium appendage. It is very difficult to exactly delineate this very small ridge and to keep the ablation catheter in the procedure on the ridge. It’s my experience that 3D ATG (3D rotational scan) was a great help to identify the ridge correctly and to balance the ablation catheter on the ridge.”

Dr. R. Tilz, Asklepios Klinik St. George, Department of Cardiology, Hamburg, Germany

“Actually I was quite surprised when we got the integration of the rotational angiography into the Carto system and how easily it works. There is a direct connection between the Carto system and the rotational angiography which makes it very easy and fast to integrate the 3D rotational angiography into the Carto systems.”

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Endoview
Endoview allows you to look inside the 3D structures to view the posterior of the atrial wall, the ostia of the PVs, the ridge, and other cardiac features.

Dr. R. Tilz, Asklepios Klinik St. George, Department of Cardiology, Hamburg, Germany
A new era in premium cardiovascular ultrasound

The Philips EPIQ 7 ultrasound system incorporates our most powerful architecture ever applied to ultrasound imaging – touching all aspects of acoustic acquisition and processing. Supported by our family of proprietary xMATRIX transducers and our leading-edge Anatomical Intelligence, this platform offers you accurate diagnosis, first-time-right, which is faster and easier to perform than before.

Intuitive insight into cardiac soft tissue

During complex EP procedures, advanced ultrasound imaging technologies, such as Live 3D transesophageal echocardiography (TEE) and intra cardiac echocardiography (ICE) provide critical insights into soft tissue anatomy, function, and flow information.

Intracardiac Echocardiography (ICE) Imaging

- Imaging of 2D, Color, PW Doppler, CW Doppler, harmonic imaging, TDI, M-mode and Color M-mode
- Operates with St. Jude Medical ViewFlex Xtra 9 French, 4 way steering ICE catheter. See St. Jude Medical for details and sales information.

Live 3D Transesophageal Echocardiography (TEE)

- Live 3D transesophageal echocardiography allows the viewing of inter atrial septum, the left atrial appendage and all chambers of the heart with unique perspectives.

Live 3D TEE on the CX50 xMATRIX supports complex structural heart disease interventions.

EcholNavigator

- Real time fusion of live X-ray and live echo images to deepen understanding of soft tissue anatomy and the device location

“...the beauty of good imaging is that you don’t have to imagine too much”

Professor J. Zamorano, Head of Cardiology, University Hospital Ramon y Cajal, Madrid

Philips offers a choice of Live 3D TEE echo systems – portable and cart. Compact X7-2t TEE may be shared between CX50 xMATRIX and EPIQ7 systems to increase clinical and operational efficiency.
Electrophysiology procedures can take several hours and medical staff often stand in the same position for extended periods of time, while concentrating on different devices, images, and materials during the procedure. Cluttered and inefficient labs can put a physical and mental strain on all members of the EP team.

Better user experience
to promote consistency and efficiency

EP cockpit
Our EP cockpit is a fully integrated solution for the EP lab. It seamlessly integrates multi-vendor systems, including mapping, recording, and robotics to improve the working environment, improve efficiency, and promote comfort and convenience while working.

Organize and de-clutter the EP lab
Our ceiling mounted, equipment rack organizes your EP equipment and consumables: mapping system, recording equipment, stimulator, defibrillator, catheters, etc. The rack revolves around the patient table when in use and can be parked when finished. It guides all cables, simplifies cleaning, and reduces clutter.

Flexible options for comfortable viewing
Comfortably view images of cardiac structures in 2D and 3D from a convenient working position thanks to the enhanced viewing angle on our FlexVision XL 58” display. View all the information you need from up to 8 sources at once. With advanced SuperZoom, you can resize and enlarge information at any time, while maintaining full sharpness.

A streamlined control room
Set up the information displayed on the control room monitors according to your preferences. You can operate Philips and other devices from a single touch panel in the control room. Put information on any monitor in the exam and control room and change the set-up as you like. To keep desks clear, additional keyboards and mice are eliminated. Assign keyboards and mice to the monitor of your preference.

“I think Philips cockpit and navigator have been developed out of an obvious need to integrate divergent information sources to help physicians deal with the challenges of information overload.”

Dr. Gabriel Soto, Southeast Missouri Hospital, Missouri, USA

Seamless integration
with recording, mapping and robotics

Integration & compatibility with all major EP technologies
Our Allura portfolio is integrated & compatible with St.Jude Ensite, Biosense Carto and BostonScientific’s Rhythmia. In robotics, we integrate with Stereotaxis Niobe, as well as with Hansen Sensei.

Image fusion with mapping – CartoUnivu
The Philips Allura interface ensures that each cine and optionally fluoro acquisitions are automatically transferred to the Carto 3 system. In this way anatomical reference is provided to the localized catheters in the mapping system.

In combination with 3D rotational scanning, a dedicated rotation has been created for use with CartoUnivu, ensuring enhanced dose exposure whilst providing a full 360 view of the heart.

Key benefits
• Clutter-free and comfortable lab environment
• Streamlined workflow through lab integration
• Fast lab reconfiguration between procedures

Ambient Experience enhances patient and staff comfort for efficient procedures
During complex EP procedures the benefits of an Ambient Experience room design with a privacy screen in the control room are evident. They include, enhanced comfort for patient/staff, better patient/staff interaction, a less stressful work environment, and enhanced procedural efficiency.
Radiation usage can vary widely between different medical practitioners in the EP lab. Long procedure times and increasing procedure volumes require new ways to manage dose.

We are committed to the As Low as Reasonably Achievable (ALARA) principle, challenging ourselves to redefine the balance between dose and image quality.

“In the past we have struggled with larger patients. Now the Clarity and non-Clarity images look the same but the Clarity images are at much lower dose.”

Specialist radiographers Chantel Brooks and Kelly Finlay, Nottingham University Hospitals, NHS Trust, UK

As Philips most powerful interventional X-ray system to-date, AlluraClarity delivers relevant clinical value where it’s needed most – at the point of patient treatment. Clinicians benefit from high-definition, clear visualization of cardiac structures. Complex procedures can be performed with the support of superb image quality at 50% dose reduction, helping to reduce patient and staff exposure. Manage low dose levels to see what you must, without changing the way you work.
Pushing the boundaries of ALARA

The AlluraClarity family of X-ray systems with ClarityIQ technology sets a new standard by pushing the boundaries of ALARA (As Low As Reasonably Achievable) imaging. To help reduce our behavior we offer more dose awareness technologies.

DoseAware family provides real-time dose feedback for safer working practices

Philips DoseAware family offers immediate feedback on dose to increase radiation awareness and help manage occupational medical radiation exposure to physicians and staff. It provides real-time dose feedback in the examination room to track an individual’s radiation exposure during each shift, as well as procedure-based data for deeper insight into staff exposure trends and behavior.

DoseAware Xtend – dedicated room solution

DoseAware Xtend is a dedicated solution for rooms with Philips FlexVision XL display. Its integration with the Allura X-ray system allows it to provide detailed feedback on scattered X-ray dose levels per procedure.

Advantages of a real-time dosimeter

- Provide the information necessary to manage individual X-ray dose
- Show when and where X-ray dose was acquired to allow for appropriate action
- Check exposure level on the colored display in the examination room
- Archive, report, and analyze radiation data to maintain high levels of occupational safety.

DoseAware does not replace the thermo-luminescent dosimeter (TLD) as a legal dosimeter.

Clinical study results

Catharina Hospital, Eindhoven, the Netherlands

The Catharina Hospital in Eindhoven, the Netherlands conducted a clinical study involving the treatment of 136 patients with complex heart rhythm disorders such as atrial fibrillation (AF).

Using Philips innovative AlluraClarity system with ClarityIQ technology, developed by Philips for use in image-guided catheter-based interventions, electrophysiologists at the Catharina Hospital were able to reduce patients’ exposure to radiation during the procedure by 43% while maintaining high image quality. At the same time, the electrophysiologist’s exposure to X-ray radiation was reduced by 50% to only 3 μSv per procedure – approximately one thousandth of the average natural background radiation dose (2 - 3 mSv) that most people in the Netherlands are exposed to each year.

Lukas Dekker, cardiologist, Heart Center at Catharina Hospital, Eindhoven, the Netherlands

“With Philips ClarityIQ technology we can further enhance image-guided catheter ablation therapy for complex heart rhythm disorders. The number of people with arrhythmias eligible for catheter ablation therapy is increasing sharply, so treating the condition needs to be made simpler and even safer. In addition to minimizing the risk to patients, reducing X-ray dose is also an important step for medical personnel, because many of them are exposed to X-ray radiation on a daily basis.”

This study has been independently reviewed and verified by clinicaltrials.gov and is available online at: http://www.clinicaltrials.gov/ct2/show/NCT01593852

DoseAware is one of the most important new tools available to help manage occupational medical radiation exposure to physicians and staff. It’s a much easier and practical way to monitor levels than conventional methods. Creating a better work environment is not only the right thing to do but our obligation.

J. Kiah, MS, RN Lab Manager, Director Cardiac and Vascular Services, Baptist Cardiac & Vascular Institute, Miami, USA
Increased economic value

Philips is committed to working closely together with customers. The purchase of a new electrophysiology suite demonstrates a long-term commitment to patients and personnel. We help optimize the economic value across the total life-cycle of your labs.

SmartPath to AlluraClarity
To reflect the cost pressures that modern hospitals and health systems face, we have taken steps to make this technology widely available. So as many people as possible can benefit from it. Philips customers who have an Allura Xper interventional X-ray system can upgrade to the AlluraClarity system via our SmartPath program.

RightFit Service agreements
From premium service plans to standard service support, there is a RightFit Service agreement to suit every need. The perfect mix of on-demand support, immediate parts and service, and comprehensive business solutions helps hospitals deliver quality patient care.

Exceptional support is a priority
The Philips global service network is ready to assist when necessary. Field engineers, remote service technicians, and front line call-agents support all systems with a world-class services network. The goal: help customers succeed in every phase of system ownership, from planning to start-up, through peak usage and renewal.

A Remote Services option provides advanced system troubleshooting that helps lessen downtime even further. Equipment remains reliable through remote system diagnoses and fast repair.

Key benefits
• High uptime and versatility for increased lab utilization
• Premium solutions portfolio tailored to various budgets
• Flexible financing options and access to latest technology

Education and training
Regular training is critical to help the medical staff to better master clinical procedures, get more out of the equipment, and build professional and clinical skills. Better-trained staff improves the overall level of service and operation.

As an example, Philips has established Peer-to-Peer training programs for physicians interested in learning about EP navigator. Participants visit peers in the hospital, who are expert in the clinical use of EP navigator, and receive a comprehensive two-day program combining class room tutorials and hands-on training. They work closely with these experienced users during real cases. More knowledgeable personnel have a higher chance of obtaining accurate results.
**Extensive electrophysiology portfolio**

We partner with you to design an electrophysiology lab that meets your clinical needs – an excellent care environment where medical specialists can work smoothly together. Choose from our extensive EP portfolio – from mobile C-arms to advanced integrated hybrid electrophysiology lab solutions to fit your clinical and financial requirements.

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### Codesigning your EP lab tuned to your procedure mix

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**Financial options are plenty**

Philips Medical Capital makes it surprisingly easy to arrange financing to address capital budget requirements, manage increasing patient volume and achieve clinical superiority. Philips ProPlus combines equipment, service, and financing in one simple offering to help:

* Stretch capital budget and enhance monthly cash flow
* Lock-in equipment and service costs for up to five years
* Avoid unexpected equipment or maintenance costs
* Simplify financial management and reduce administrative burdens
* Get the equipment necessary to deliver a high level of quality care
* Enhance organization’s reputation and profit potential

While the treatment of cardiac arrhythmia disease continues to rapidly evolve, one thing remains the same – Philips leadership. Our Live Image Guidance solutions stand at the forefront of interventional care. For planning, diagnosis, and therapy, they support the skills of clinical professionals like you.

**Making the difference where it really matters, with Philips Live Image Guidance.**

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4 Indicative only, room layout & lab usage are subject to consultative path
5 Allura Centron is not available in the United States.