



**PHILIPS**

Ultrasound

CVx

# Designed for cardiology. Built for better care.

## CVx cardiovascular ultrasound systems

Now is the time to upgrade your echo performance. Philips CVx ultrasound systems feature our most advanced solutions to provide you with efficiencies and quality that are more essential than ever.

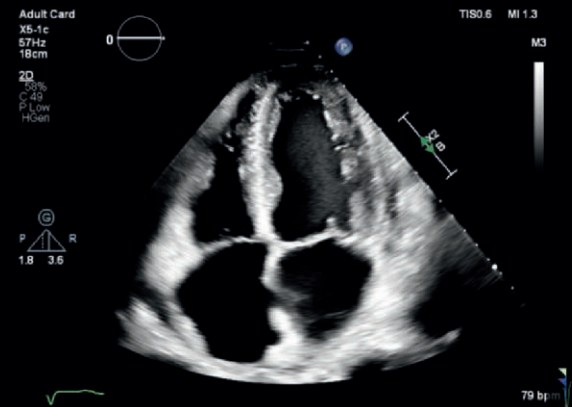
Experience exceptional clinical performance for diagnostic and interventional echo exams across a wide range of patients. CVx ultrasound systems help meet the new challenges of today's demanding practices with quick diagnosis and reliable ongoing monitoring for conditions such as COVID-19 and for assessing cardiotoxicity related to cancer therapy. Fast exams with easy-to-use applications and automated quantification allow for reproducible results with confidence.

# Diagnostic confidence across your patients

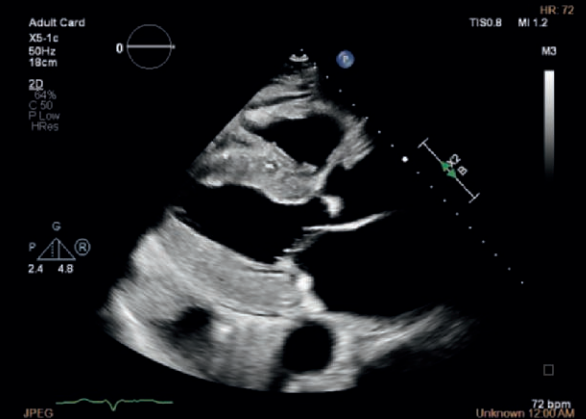
The X5-Ic transducer combines with **nSIGHT** Plus for more clinical information in 2D and 3D transthoracic imaging

Image formation – the process of converting acoustic data from the transducer into a raw ultrasound image – is key to meeting all these requirements. Recent advances in the processing power of graphical processing units (GPUs) make it possible to build a platform that enables software to run image formation calculations. **nSIGHT Plus** harnesses the power of hardware and the flexibility of software to bring new capabilities to image formation. Its advanced, intelligent algorithms adjust image formation based on the individual patient, decreasing artifacts and suppressing acoustic interference early in the imaging chain where data is more abundant.

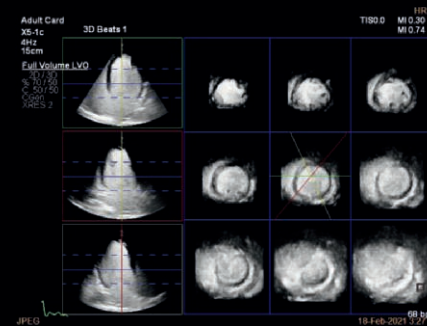
Philips trusted xMatrix technology along with **nSIGHT** Plus enables advances in TTE image quality required for today's echo imaging needs. The X5-1c transducer combined with **nSIGHT** Plus and innovative design with its curved nose provides enhanced clinical information in 2D and 3D transthoracic imaging over a standard phased array transducer. The benefits may be decreased exam time due to fast access to echo windows, enhanced confidence in quantification results, and improved imaging especially of the more difficult structures such as tricuspid and pulmonic valves, as well as the LV Apex.



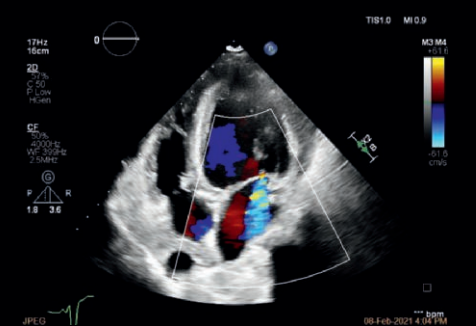
### AP4 using X5-1c



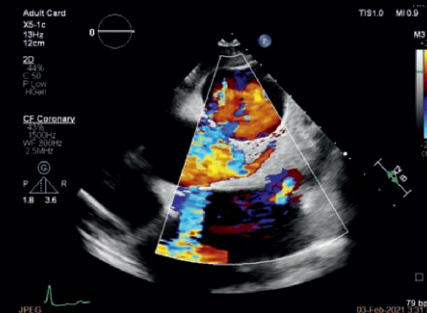
### PLAX using X5-1c



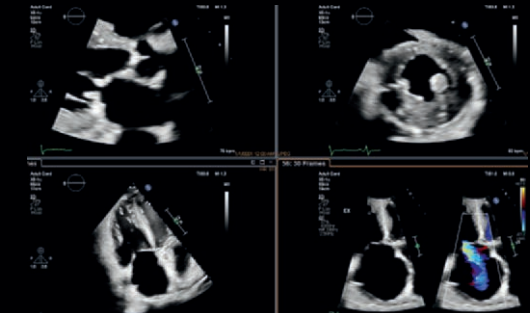
### iSlice with contrast using X5-1c



**Apical view with MR using X5-1c**



**Left main coronary using X5-1c**



### Quad screen display

# Reproducibility in heart failure assessment and monitoring

## Challenge

Accurate first-time-right measurements are necessary to assess and plan treatment. Routine follow-ups require reproducibility over time, regardless of who performs the exam. Fast image acquisition helps reduce exam time, as well as limiting hands-on time with an infectious patient.

## Auto Measure

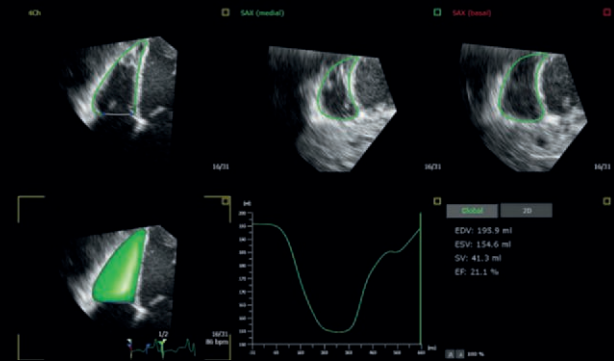
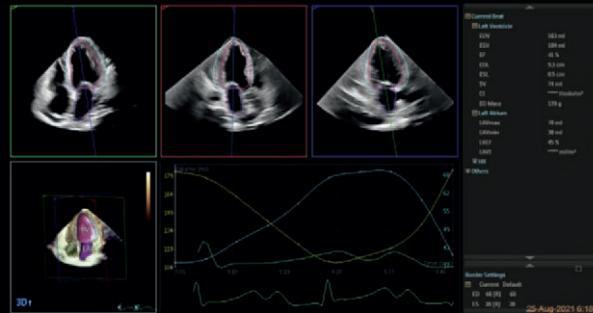
Powered by AI, the fully automated Doppler and 2D distance measurements improve exam efficiencies by more than 50%<sup>1</sup> of time saving on cardiac measurements for everyday echo.

## CVx ultrasound systems

Fully automated quantification of both left and right heart function, from both 2D and 3D images.

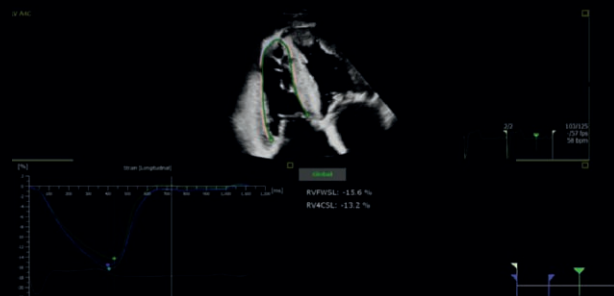
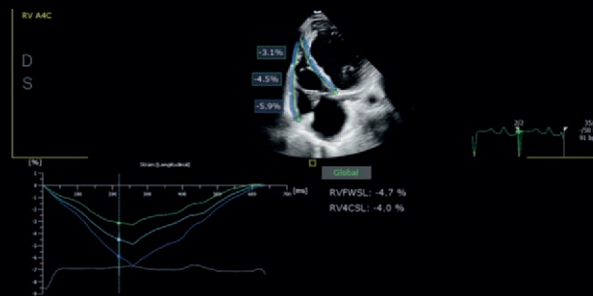
- **Dynamic HeartModel** for accurate, reproducible and fast 3D volume and ejection fraction (EF) of both the left ventricle (LV) and left atrium (LA)
- **3D Auto RV** with artificial intelligence for one-button assessment of right ventricle (RV) function
- **AutoStrain LV, LA and RV** using advanced automation for fast assessment of global longitudinal strain (GLS)

Q-Apps on scaleable TOMTEC Arena and the Philips IntelliSpace Cardiovascular multimodality image and information management solution are designed to help streamline workflow and enhance operational performance across the cardiovascular care continuum.



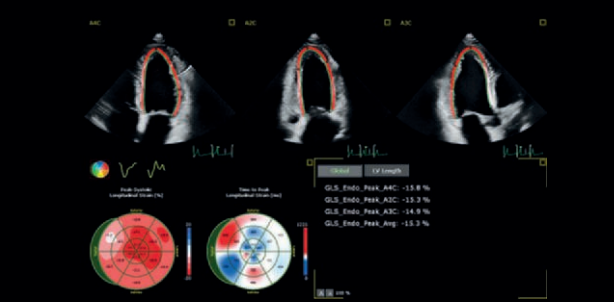
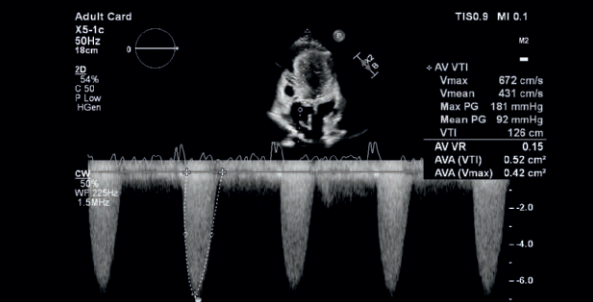
Dynamic HeartModel

3D Auto RV



AutoStrain RV

AutoStrain RV



Auto Measure of AV Doppler

AutoStrain LV



# Confidence in structural heart disease

## Challenge

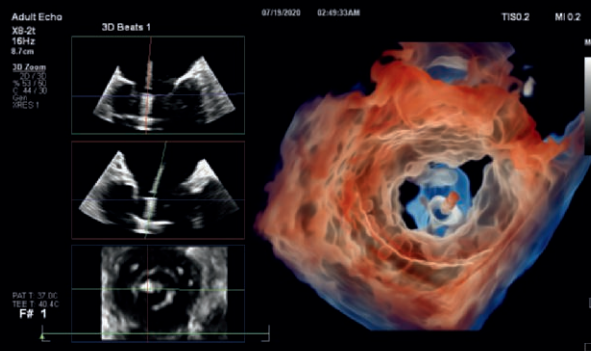
Interventional procedures require superior imaging and visualization of anatomy and devices because sizing and proper alignment of these devices can be difficult. The number of interventional procedures is set to grow significantly over the next 10 years,<sup>2</sup> with the introduction of new devices and new procedures. TEE imaging, especially in 3D, has become part of the imaging solution to aid with guidance throughout the procedure, providing important anatomical and functional information, both of which are key to the success of the procedure.

## CVx ultrasound systems

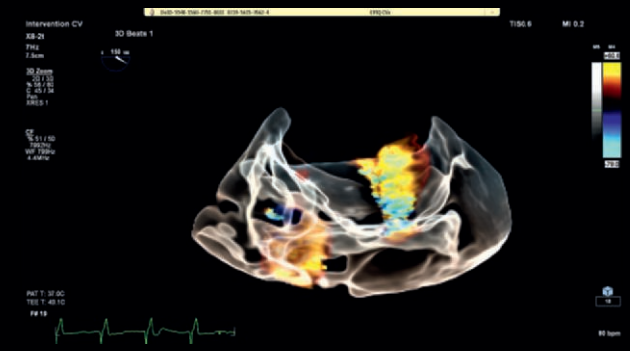
Provides workflow specific to TEE, superb image quality, reliable TEE transducers and automated tools to support fast results and confidence in guidance.

Real-time photorealistic rendering of 3D provided by Cardiac TrueVue allows for a clear view of structural heart abnormalities and impacted blood flow so that clinicians can plan, perform and follow up with confidence. Visualize morphology of cardiac structures such as the left atrial appendage (LAA) very easily and quickly using Cardiac TrueVue Glass, while live scanning or in review.

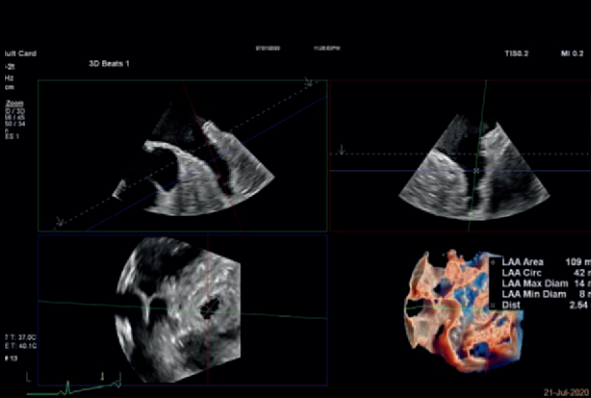
Support communication between cardiac team members during procedures with real-time fusion imaging between ultrasound and X-ray. EchoNavigator R2 is used to enhance the understanding and provide the best of both imaging modalities for procedures.



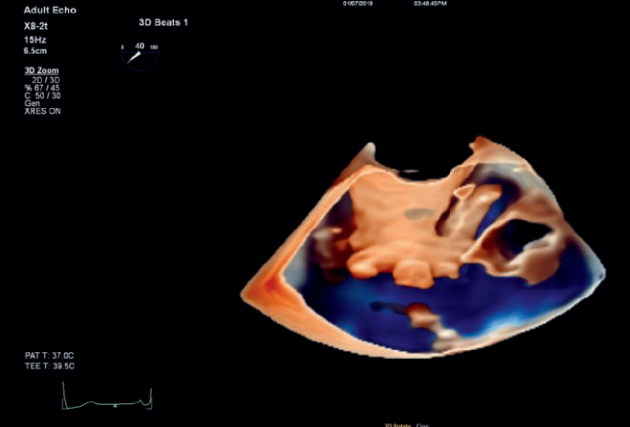
**Mitralclip using TrueVue Glass**  
Improves visualization of flow and its location within the anatomy.



**3D of Tricuspid Valve with TrueVue Color and Glass**  
To see complete color flow without losing anatomical context.



**3D Auto LAA in MultiVue layout**



**Cardiac TrueVue Glass**  
Allows for unique visualization of cardiac structures such as the LAA.

# Enhanced capabilities in congenital heart disease

## Challenge

With the wide range of patient size, age and disease, echo is the standard noninvasive method to assess the pediatric heart. Pediatric echo comes with many challenges, such as off-axis anatomy, complex anatomical structures and non-cooperative patients.

## CVx ultrasound systems

Full range of cardiac ultrasound transducers delivers industry-leading 2D and 3D image quality.

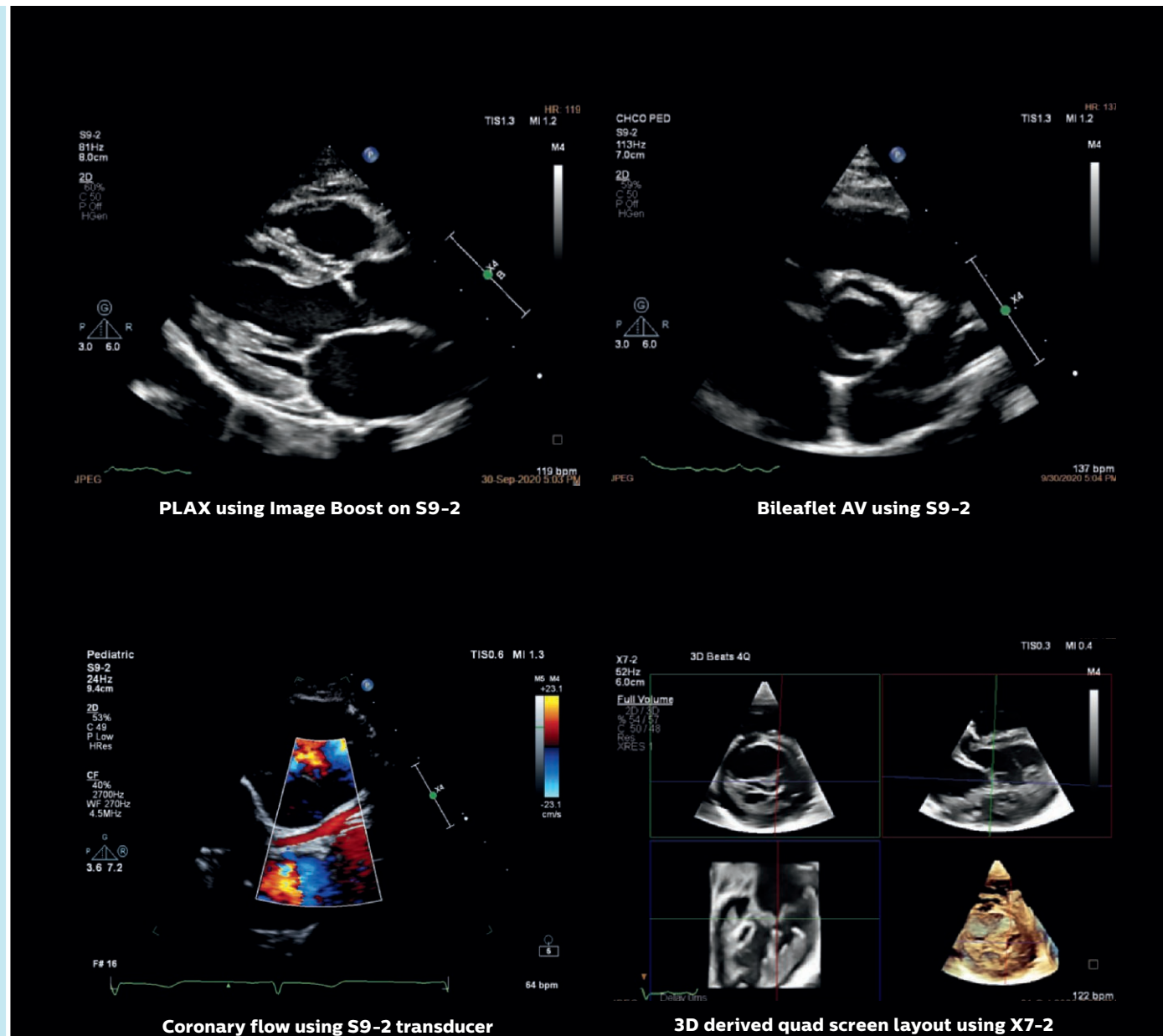
Image Boost is an advanced image processing technique that suppresses unwanted clutter signals and boosts desired signals from myocardium and other cardiac structures.

PureWave S9-2 transducer provides a wide bandwidth transducer to image various patient sizes, and also features a one-button coronary sub-mode.

Exam efficiencies are driven by AI and anatomical intelligence capabilities in quantification, an enhanced user interface and improved workflow in 2D and Live 3D.

X7-2 xMATRIX pediatric 3D TEE transducer brings Live xPlane, iRotate and 3D to even the smallest pediatric patients.

Improved visualization of structural abnormalities and new rendering functionality with moveable light source of Cardiac TrueVue Color and Cardiac TrueVue Glass can be used to investigate the anatomy and flow within these sometimes complex hearts.



# Accurate diagnosis of pulmonary hypertension

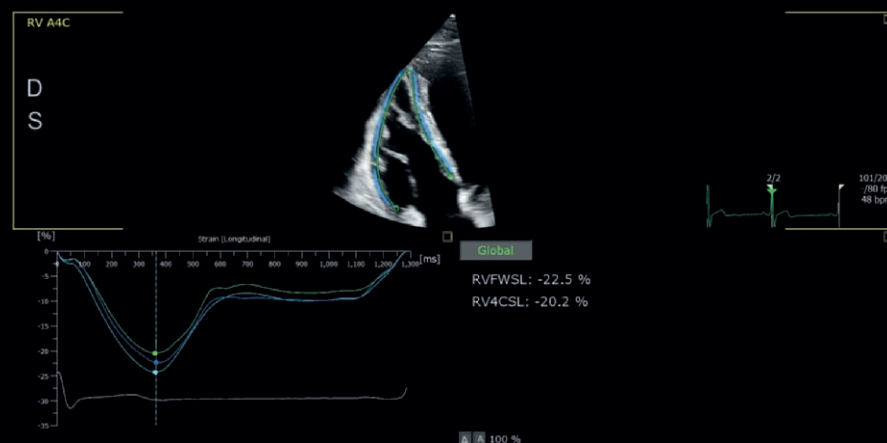
## Challenge

This hidden condition, with symptoms that are commonly associated with other diseases, is frequently misdiagnosed.<sup>3</sup> The average time between symptom onset and diagnosis is more than two years;<sup>4</sup> if a patient needs to see multiple physicians before diagnosis, it can lead to a financial burden. Echo can be the imaging modality of choice, providing confidence in results at initial diagnosis and also over time for regular follow-up echo exams.

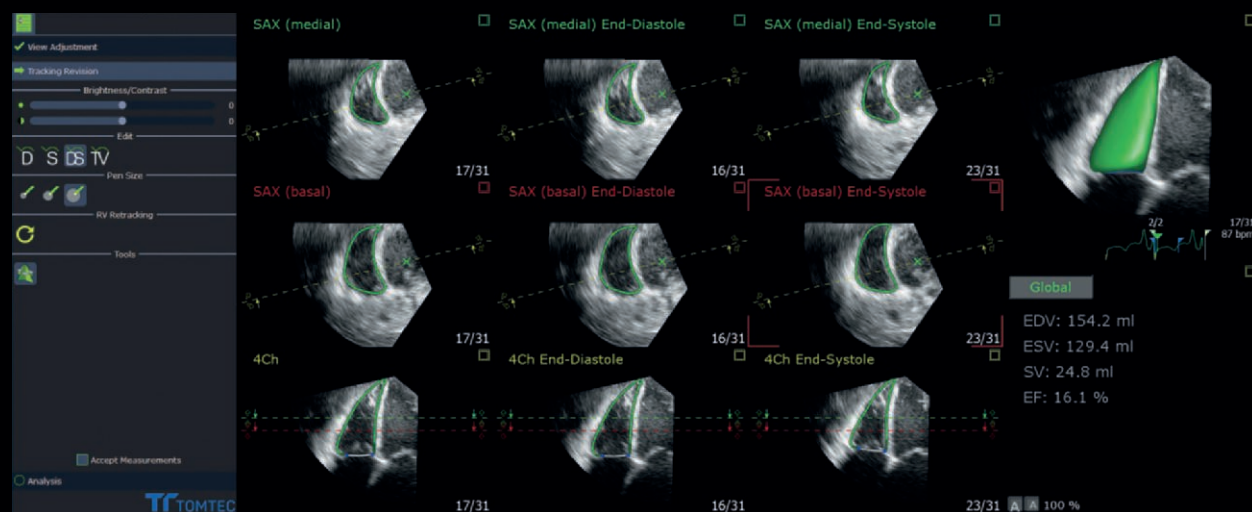
## CVx ultrasound systems

Acquire multiple parameters such as RV and LV volumes and EF, along with GLS of the RV, LA and LV to rule out other causes, with no impact to exam time.

Simplify and speed up the exam with images and Doppler acquired from virtually any view with Live xPlane imaging and Live xPlane Doppler, as well as through AI and anatomical intelligence, and advanced automation for fully automated functional assessment of the LV and RV.



**AutoStrain RV**



**3D Auto RV**

# Advances in vascular disease

## Challenge

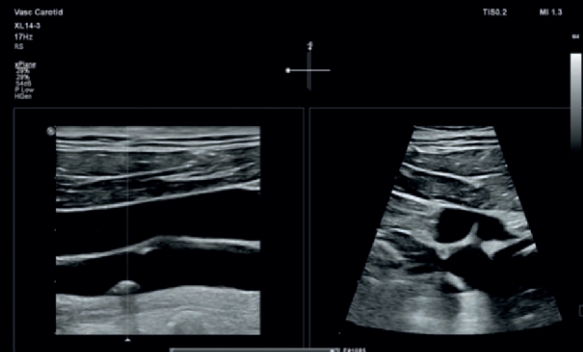
While ultrasound is an exceptional modality to assess vascular health, technology to better address vascular imaging had not significantly changed in the last two decades. Cardiovascular clinicians need to assess, monitor and treat vascular disease in line with assessing cardiac function, especially coronary artery disease. For everyday vascular imaging, image quality and ergonomics are important to reduce operator fatigue.

## CVx ultrasound systems

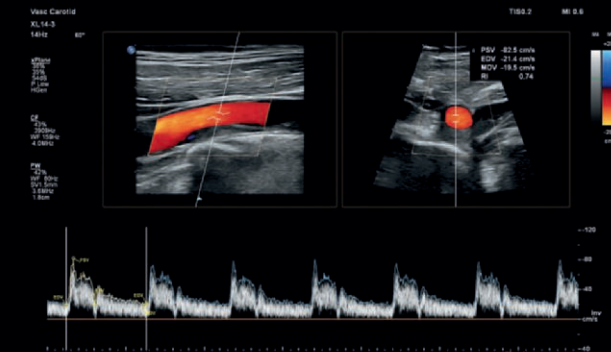
View and acquire both longitudinal and transverse planes simultaneously with Live xPlane imaging on the XL14-3 transducer, the first real-time 3D vascular transducer.

Live xPlane Doppler allows for precise placement of the Doppler sample volume using both longitudinal and transverse reference images.

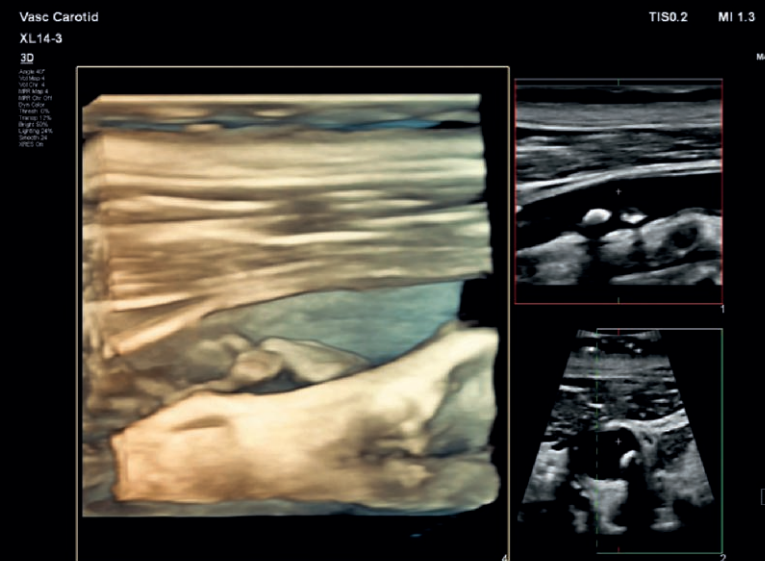
Live 3D/4D visualization of vascular anatomy can provide more data than 2D, especially when assessing plaque.



**XL14-3 transducer 2D with Live xPlane imaging**



**XL14-3 transducer with Live xPlane Doppler**



**XL14-3 transducer Live 3D of carotid vessels**



# Maximize efficiencies and security

## Challenge

Now more than ever, efficiency and limiting hands-on time with an infectious patient need to be supported by off-cart analysis and quantification with the same workflow as on the ultrasound system. Data security is more important than ever, especially with regard to protecting patient data. Managing a fleet of ultrasound systems depends on accurate data and analysis.

## CVx ultrasound systems

Philips data intelligence tools can help you make informed decisions to improve workflow, deliver quality patient care, and decrease the total cost of ownership. The on-board utilization tool provides individual transducer usage data and the ability to sort by exam type.

The systems operate on Windows 10 and are supported by the Philips defense-in-depth strategy, which implements a suite of security features designed to help clinical IT professionals and healthcare facilities provide additional patient data privacy and virus protection, as well as protection from unauthorized access via the ultrasound systems on hospital networks.

## Collaboration Live

Philips Collaboration Live provides ultrasound system users with remote access to talk, text, screen share or live video stream with diagnostic confidence. Communication with colleagues or with Philips Technical and clinical support personnel can enable you to extend your team without expanding it. Remote client users have the flexibility to communicate from wherever they are, using iOS, Android or Chrome web browser.







1. The Auto Measure feature can reduce quantification time by 51%. Philips VMQ 9.0 Claims Evidence Report, document 270472 A.
2. According to Clarivate (formerly DRG) market research. <https://clarivate.com/products/research-reports/report/m360hc0012-medtech-structuralheart-closure-devices-market-insights/?lid=d> and <https://clarivate.com/products/research-reports/report/m360hv0071-medtech-heart-valve-devices-market-insightsunited/?lid=d>
3. Taken from The Blue Lips Foundation (an organization that supports patients with this disease type), [www.bluelipsfoundation.org](http://www.bluelipsfoundation.org).
4. The Blue Lips Foundation, [www.bluelipsfoundation.org](http://www.bluelipsfoundation.org).

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