



# Introducing a new class of premium ultrasound

Philips EPIQ Elite premium ultrasound for general imaging and shared services

# Expect the exceptional

Philips EPIQ Elite is a new class of premium ultrasound featuring powerful **n**SIGHT Imaging architecture with the latest advancements in image processing and transducer technology.

EPIQ Elite continues to drive the ultimate in general imaging and shared service capability, representing exceptional performance across all clinical segments



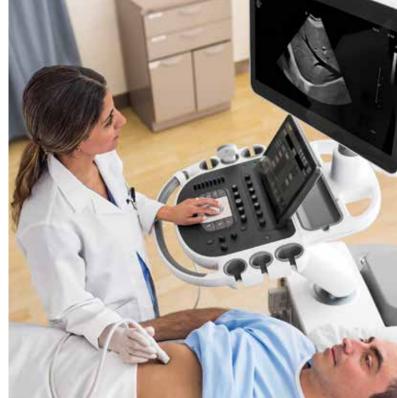
#### Meet your most demanding challenges

With EPIQ Elite, an exceptional level of clinical performance, workflow ease and advanced intelligence come together like never before to meet the challenges of today's most demanding practices.



# Designed for more

Offering ultimate solutions across applications, EPIQ Elite has clinically tailored tools designed to elevate diagnostic confidence to new levels.





# Premium ultrasound must keep advancing

Healthcare organizations are continually being challenged to provide a higher quality of care cost-effectively. Premium ultrasound today demands improved clinical information from each scan, faster and more consistent exams that are easier to perform, and a higher level of confidence, even for technically difficult patients. The goal is quick and accurate diagnosis the first time and in less time

# Our most powerful architecture

**n**SIGHT Imaging far surpasses conventional ultrasound performance to reach new levels of definition and clarity.

Incorporating a custom multi-stage precision beamformer along with massive parallel processing, this proprietary architecture captures an enormous amount of acoustic data from each transmit operation and performs digital beam reconstruction along with mathematically optimized focal processing. This creates extraordinary real-time images with exceptional frame rate, uniformity and penetration.

### Frame rate



#### Conventional

Users must choose between frame rate and image quality.



#### **n**SIGHT Imaging

More than doubles the frame rate without impact to image quality. Creates focused images with fewer transmit operations so you can experience both highly detailed ultrasound images and extraordinary temporal resolution.

### Uniformity



#### Conventiona

Best resolution is limited to transmit focal zone



#### **n**SIGHT Imaging

Corrects focus during beam reconstruction for superb uniformity. Achieves uniformity through coherent beam reconstruction algorithms that apply mathematical focal correction coefficients continually at all depths of the image.

### Penetration



#### Conventional

Penetration limitations and poor sensitivity to weak signals.



#### **n**SIGHT Imaging

Superb penetration across full range of frequencies. Reinforces weak tissue signals with the ultra-wide dynamic range and unique beam reconstruction of the architecture, allowing enhanced penetration at higher frequencies, even on difficult patients.

# Amazing processing power – **5X more data** throughput than software-based beamforming

EPIQ Elite ultrasound is uniquely designed to process acoustic data at stunning rates. *n*SIGHT Imaging touches all aspects of acoustic acquisition and image processing, allowing you to truly experience ultrasound's evolution to a more definitive modality. The EPIQ architecture processes the equivalent of 10 DVDs/sec, while many software-based beamformer architectures struggle to process the equivalent of even 2 DVDs/sec.





# Visualize more accurately

#### Philips HD MAX display

This new immersive 24" display monitor offers the ultimate ultrasound visualization experience, with an ultra-wide color gamut of 10-bit color depth that uses billions of colors for accurate color reproduction.

In addition, it provides high-contrast dynamic range and enhanced black levels for subtle delineation of grayscale values. HD MAX features superb off-angle viewing for visualization of clinical images throughout the scanning room.



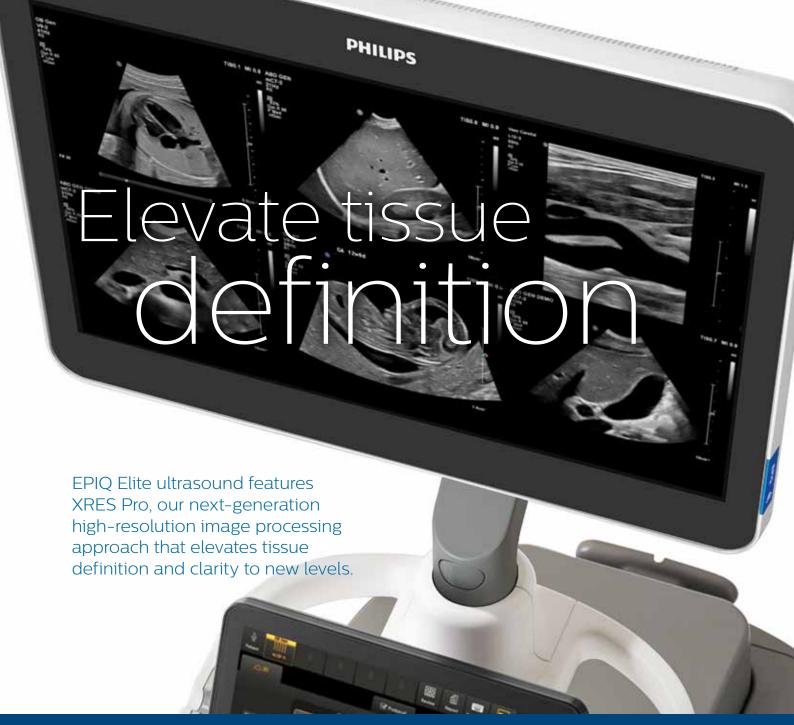




EPIQ Elite processing power Equivalent to processing 10 DVDs/sec

Processing power of other beamformer architectures Equivalent to processing 2 DVDs/sec







XRES Pro offers reduction of artifacts with excellent delineation of structural anatomy.

#### XRES Pro is next-generation image processing

At real-time frame rates, XRES Pro uses multi-parametric precision filters that subdivide image elements, analyze this data and then apply advanced conspicuity. XRES Pro also offers enhanced assessment of plaque morphology. XRES Pro allows you full adjustability to match the level of enhancement to clinical imaging requirements for elevated diagnostic confidence with virtually all patients.

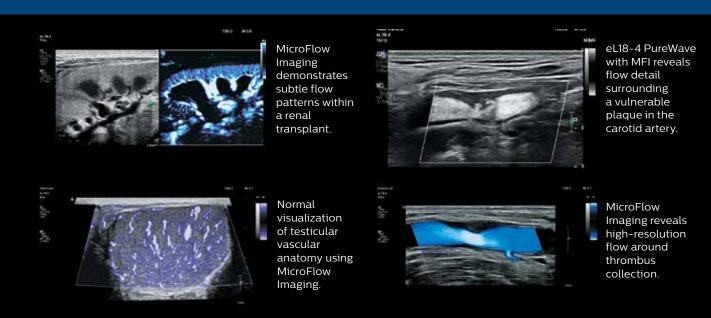
# Detect, visualize and characterize

### MicroFlow Imaging offers remarkable detail in assessing blood flow

MicroFlow Imaging is designed to detect slow and weak blood flow anatomy in tissue. This proprietary approach overcomes many of the barriers associated with conventional methods to detect small vessel blood flow with high resolution and minimal artifacts.

MicroFlow Imaging maintains high frame rate and 2D image quality while applying advanced artifact reduction techniques to reveal small vessel anatomy.





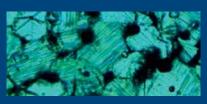
93% of users felt MFI helped detect slow blood flow and enhanced resolution of flow in vascular exams.\*

81% of users felt MFI helped visualize and characterize subtle flow disturbances around stenotic plaque.\*

# Simplify the difficult

# The power of PureWave for exceptional imaging even on technically difficult patients

PureWave crystal technology represents the biggest breakthrough in piezoelectric transducer material in 40 years. The pure, uniform crystals of PureWave have virtually perfect uniformity for greater bandwidth and twice the efficiency of conventional ceramic materials.





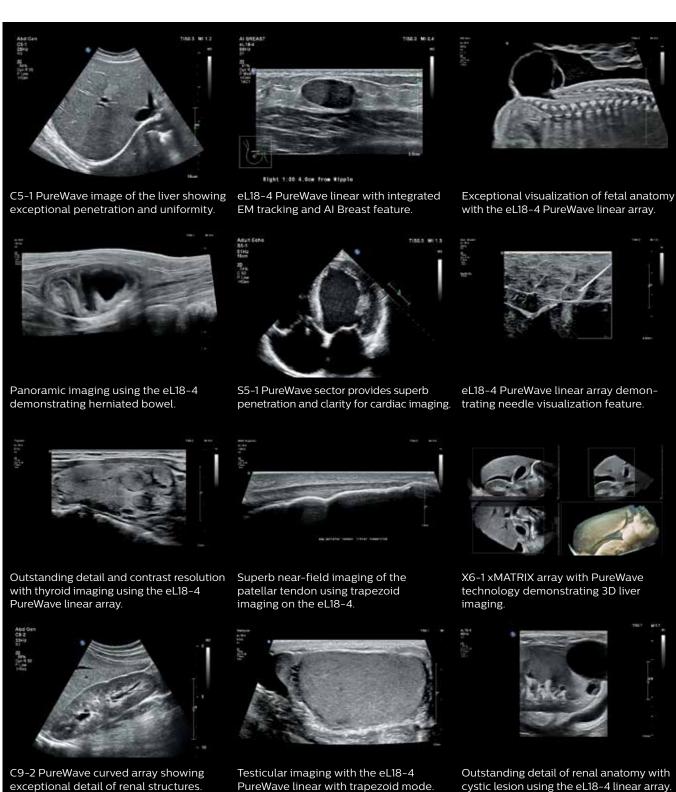
Conventional PZT (x800)

PureWave crystal (x800)

PureWave crystal technology is 85% more efficient than conventional piezoelectric material, resulting in exceptional clinical performance. This technology allows for improved penetration in difficult patients with a single transducer while maintaining excellent detail resolution, superb Doppler sensitivity and exceptional shear wave elastography performance.

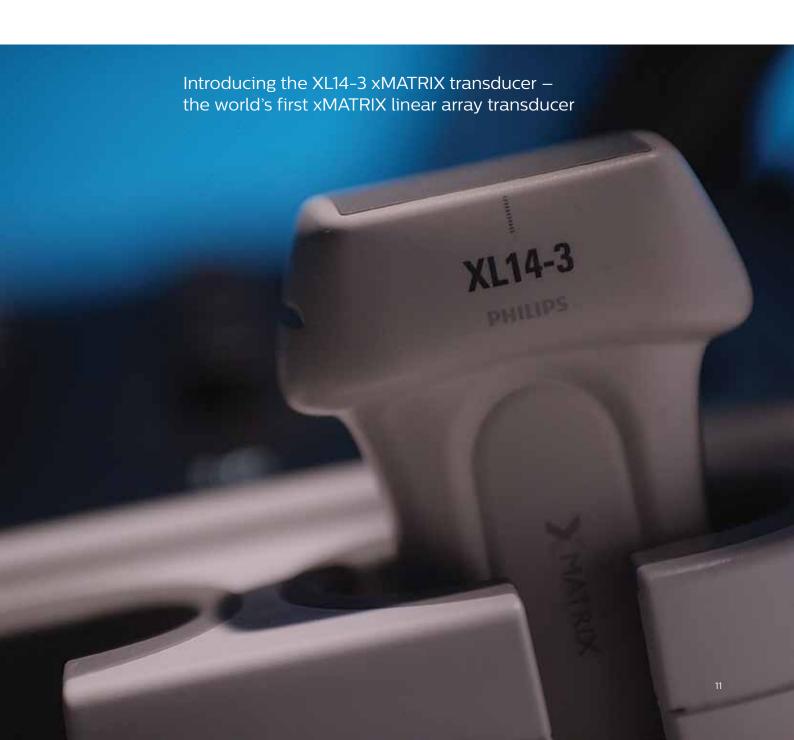


# Excellent detail resolution with PureWave



# Choose the leading edge

EPIQ Elite features a true breakthrough in imaging, the XL14-3 transducer, which offers multi-dimensional focusing for ultra-thin slice imaging to enhance diagnostic confidence when assessing vascular disease.













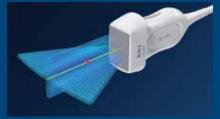
The ultimate ultrasound solution for vascular assessment.

# xMATRIX transducers are innovative, powerful and versatile

No other premium ultrasound solution can run xMATRIX, the comprehensive suite of the world's most innovative ultrasound transducers. Achieve ultra-thin 2D slices. Use Live xPlane imaging to create two full-resolution planes simultaneously, allowing you to capture twice as much clinical information in the same amount of time. Acquire near-isovoxel resolution to reveal images from any plane within the volume.







XL14-3 Live xPlane Doppler imaging.



XL14-3 3D/4D imaging.

#### Live xPlane saves valuable time

Live xPlane Imaging eliminates the need to rotate the transducer to acquire orthogonal views. A simple move of the trackball provides complete anatomical documentation, reducing exam time. The xPlane pulsed Doppler feature enhances sample volume placement, allowing greater reproducibility and consistency when sampling significant stenosis.

#### New insights with 3D/4D

Electronic 3D/4D volume acquisition of vascular anatomy provides new insight into plaque spatial location and composition. Visualize vessel casts using 3D flow data for direct assessment of stenotic or tortuous conditions. Now 3D/4D visualization can provide an ideal communication tool to facilitate clinical decisions and enhance patient consultation.

# Ultra-thin slice imaging

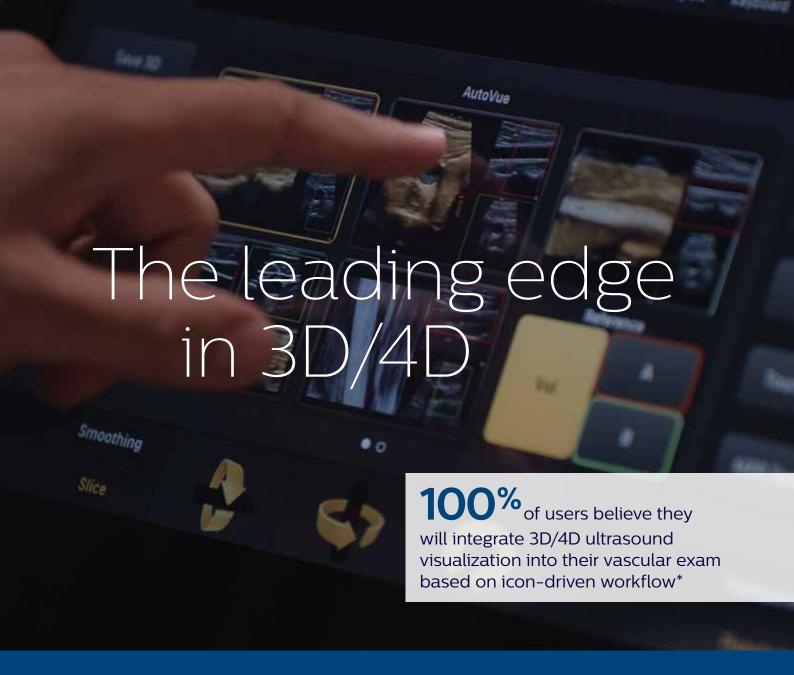
96% of users surveyed preferred to use XL14-3 to assess vulnerable plaque.\*

70% of users believe that using xPlane imaging could reduce carotid exam time by 20%.\*



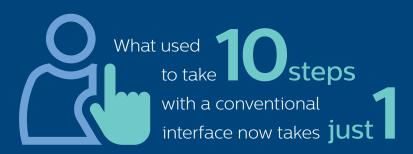
93% of users feel that xPlane Doppler could reduce sample volume placement errors and provide greater reproducibility and consistency.\*

78% of users believe that visualizing vessel cast using 3D/4D flow data will assist in providing direct assessment of stenotic or torturous conditions.\*

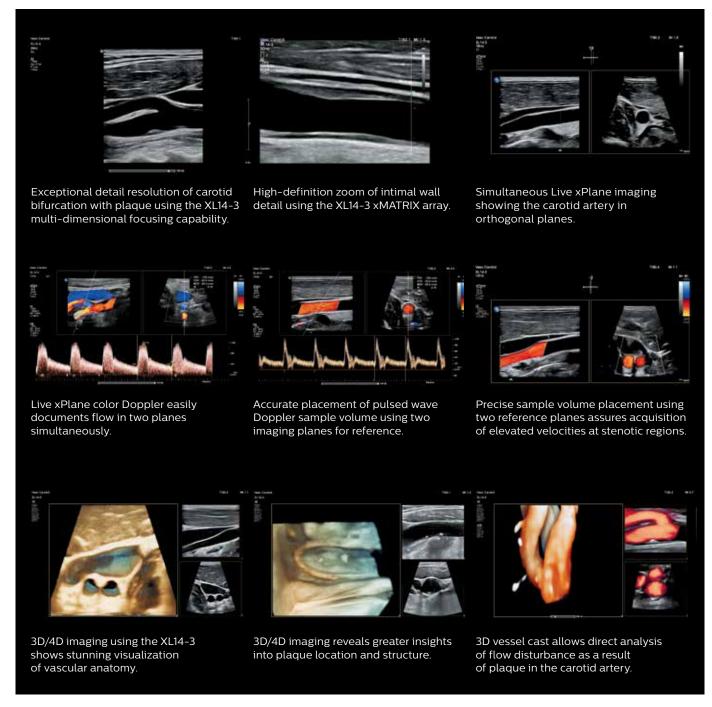


## With the XL14-3, intuitive icon-driven workflow simplifies 3D/4D

The EPIQ Elite proprietary icon-driven 3D/4D workflow simplifies the examination and allows you to experience a new dimension in vascular imaging. Instantly select rendered options with a single touch of an AutoVue icon. The TouchVue interface allows finger manipulation of the volume from the touchscreen. Now 3D/4D vascular information can be easily added to the vascular exam, eliminating the need for complex conventional user interfaces.



# The XL14-3 brings a new dimension



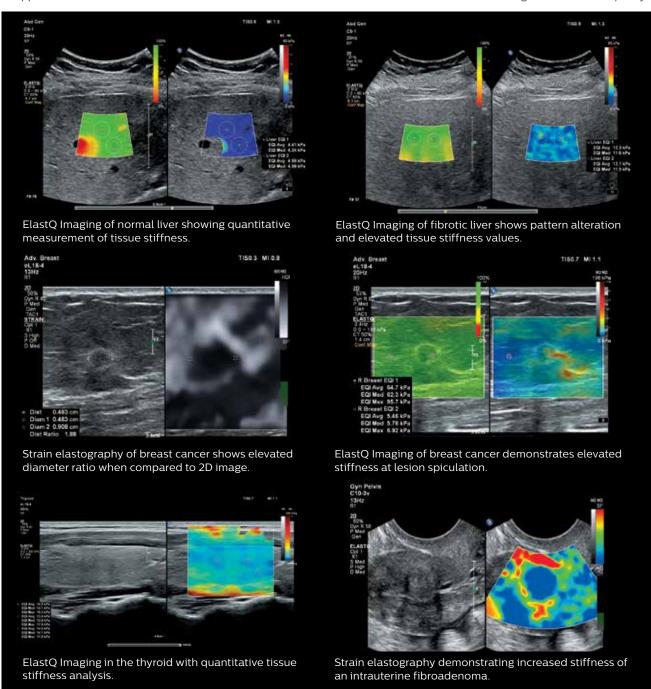
# Reveal more, definitively

# Uniquely designed for elastography, offering more definitive information on tissue stiffness

The EPIQ Elite platform supports both strain and shear wave imaging methods of elastography.

Highly sensitive strain imaging can be used to rapidly assess relative tissue stiffness values across a variety of applications.

ElastQ Imaging methods of shear wave elastography use a unique pulsing scheme to generate and detect the propagation speed of shear waves, providing a quantitative display and measurement of tissue stiffness. ElastQ Imaging also provides a confidence map display to assist you in obtaining measurements from areas with the highest shear wave quality.



# Gain insight with ceus

# Contrast enhanced ultrasound offers elevated insight into liver microcirculation and vesicoureteral reflux

Ultrasound contrast agents can transform the role of ultrasound in liver imaging, allowing you to study enhancement patterns of suspicious liver lesions in real time for faster and more confident diagnoses.

Pediatric contrast enhanced ultrasound (CEUS) for the assessment of vesicoureteral reflux has provided clinicians an alternative non-ionizing approach as compared to traditional techniques. With EPIQ Elite, CEUS is seamlessly integrated into the standard workflow. Additionally, with advanced technologies at your fingertips – such as 3D/4D, MaxVue HD display, fusion imaging, and Q-App quantification – EPIQ Elite delivers exceptional confidence for even the most challenging exams.



CEUS of the liver showing subtle microcirculation in an HCC lesion.



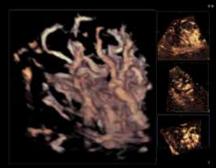
Side-by-side imaging of the liver using CEUS shows superficial FNH lesions.



CEUS of the liver demonstrating diffuse metastatic lesions.



Side-by-side CEUS of liver demonstrating wash-in of HCC lesion.



3D CEUS using the X6-1 xMATRIX array demonstrates elevated visualization of intra-lesion vascular anatomy of an HCC.



Pediatric VCUG using contrastenhanced ultrasound demonstrates Grade 2 reflux abnormality in the kidney.

# Detect as early as possible

#### Advanced fetal imaging with exceptional visualization for early detection



EPIQ Elite features advanced technologies that provide an exceptional level of clinical performance for deeper levels of definition and clarity to enable you to make early, evidence–based decisions during the critical first and second trimester – even in the most technically challenging cases.

Our *n*SIGHT Imaging architecture, paired with breakthrough PureWave transducers, truly elevates fetal imaging to new levels. TrueVue photorealistic 3D imaging with a virtual light source provides amazing visualization of fetal surface anatomy that may even foster maternal-fetal bonding. Advanced tools such as TouchVue, aBiometry assist and aReveal further enhance the workflow experience when performing obstetrical exams.

# New V9-2 PureWave transducer for exceptional fetal imaging

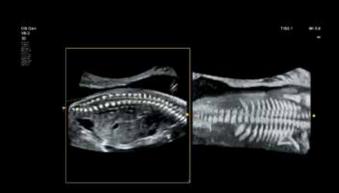
- · First PureWave mechanical volume transducer
- · Lightest in its class
- · Offers exceptional fetal imaging across a wide variety of patient types
- · Advanced 3D/4D imaging support, including TrueVue, MPR touch and FlexVue



Superb visualization of 3D fetal surface anatomy with the V9-2 PureWave curved array and TrueVue rendering.



V9-2 PureWave demonstrating excellent detail of fetal renal anatomy.



FlexVue feature demonstrating curved MPR reconstruction of fetal spine anatomy.



V9-2 image with side-by-side visualization of fetal aorta bifurcation and bilateral renal arteries using MicroFlow Imaging.

# Assess Completely

#### Cardiac imaging with exceptional structural and functional assessment

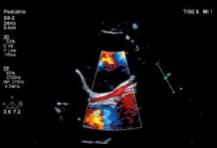
EPIQ Elite supports a full range of cardiac imaging, including adult and pediatric applications. Philips offers the widest range of 2D and 3D transthoracic and transesophageal diagnostic transducers to meet your echo needs across your patient population, from fetal to adult congenital.

Advanced xMATRIX transducers provide a complete 2D and Live 3D assessment of cardiac structures and enables our most advanced quantification tools for echocardiography. Depth of imaging capability combined with streamlined cardiac workflow reduces the steps and time needed for these especially challenging exams.





X8-2t Live 3D TEE showing visualization of multiple Watchman devices closing left atrial appendage.



S9-2 PureWave sector array with highly sensitive color Doppler showing superb detail of pediatric coronary artery.



Live 3D color Doppler image demonstrating regurgitant blood flow with a mitral valve replacement device.



X8-2t transesophageal 2D image showing excellent visualization of normal right-side anatomy.



X5-1 xMATRIX with CW Doppler demonstrating waveform characteristic of tricuspid regurgitation.



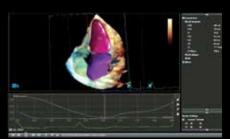
X8-2t Live 3D TEE visualization of Barlow's mitral valve prolapse.

# Put intelligence to work for you

# AIUS leverages machine intelligence for faster, more reproducible analysis

At the heart of the powerful EPIQ Elite architecture is our Philips exclusive Anatomical Intelligence for Ultrasound (AIUS), designed to elevate the ultrasound system from a passive to an actively adaptive device. With advanced organ modeling, image slicing, and proven quantification, exams are easy to perform, more reproducible, and deliver new levels of clinical information.

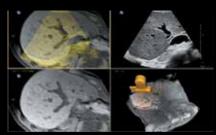
AIUS capabilities range from automating repetitive steps to full computer-driven analysis of raw data with minimal user interaction. AIUS can provide advanced screening documentation and assisted measurements, as well as organ and structure detection for automatic registration and advanced quantification.



AIUS Dynamic HeartModel automated 3D quantification resulted in a time savings of 83% compared to conventional measurement methods.



Anatomical Intelligence for Breast (AI Breast) allows a full diagnostic study while enhancing the workflow for breast screening exams.



AIUS AutoRegistration for image fusion resulted in a time savings of 93% compared to conventional manual registration methods.

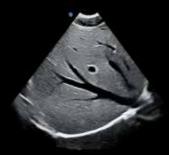
### New mC7-2 transducer

#### for excellent intercostal imaging

- Small contact for excellent intercostal imaging
- Integrated EM tracking Fusion/navigation)
- CEUS capabilities

- · MicroFlow Imaging
- Integrated CIVCO Verza Bx guide support\*
- · Abdominal, IR applications

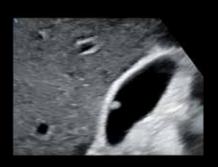




mC7-2 micro convex array demonstrates exceptional tissue detail and penetration in the liver.



MicroFlow Imaging with the mC7-2 reveals excellent delineation of renal blood flow around a cystic lesion.



High-definition zoom with the mC7-2 visualizes subtle pathology of the gall bladder.

# Reach clinical decisions quickly

# Image fusion and navigation with easy-to-use modality fusion and interventional guidance

Make confident decisions even in challenging diagnostic cases with fully integrated fusion capabilities that feature streamlined workflows to allow you to achieve fast and effective fusion of CT/MR/PET with live ultrasound.

By combining imaging modalities directly on the ultrasound system, you now have access to an even more powerful diagnostic tool with advanced visualization, allowing for fast clinical decisions. Expand fusion and navigation capabilities through a range of transducers across applications, including the X6-1 xMATRIX, C5-1, C9-2, eL18-4, L12-5, C10-4ec, S5-1 and the new mC7-2.

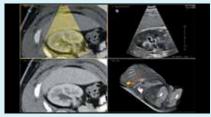
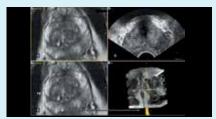
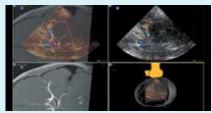


Image fusion of ultrasound and CT allows anatomical correlation for elevated diagnostic confidence and enhanced interventional procedures.



MR and ultrasound fusion imaging of prostate facilitates biopsy planning and procedures.



Transcranial fusion imaging using color Doppler allows correlation of anatomical structures as well as providing real-time flow data.



Fusion imaging with CT and ultrasound CEUS allows excellent visualization of aortic endograft for enhanced detection of leaks.



# Interact intuitively Designed to elevate the user experience EPIQ Elite has completely reinvented the premium ultrasound user experience. From ease of use to workflow to ergonomics to portability, we've revolutionized how you interact with an ultrasound system from every every standpoint



The EPIQ tablet-like interface results in 40% to 80% less reach and 15% fewer steps<sup>1</sup>

SmartExam decreases exam time by 30-50%, keystrokes by as many as 300 per exam<sup>2</sup>

Auto Doppler takes 10 steps to 3 steps and reduces the number of button pushes by an average of 68%<sup>3</sup>

# Never compromise

### The universal platform removes compromises and barriers

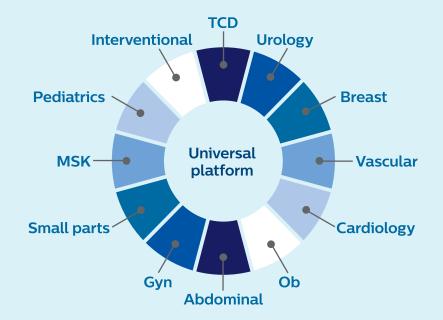
EPIQ Elite ultrasound simply offers outstanding performance with all clinical applications including advanced shared service. Whether you perform abdominal, small parts, pediatric, Ob/Gyn, vascular, interventional or cardiac, the platform offers a no-compromise approach to clinical solutions, enabling you to offer the most advanced services to your patients.











#### **Universal platform**

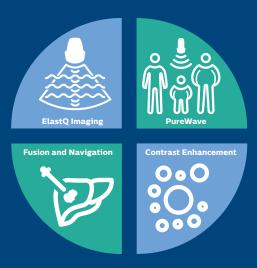
The EPIQ Elite offers outstanding performance with all clinical applications.

# Choose ultimate Solutions

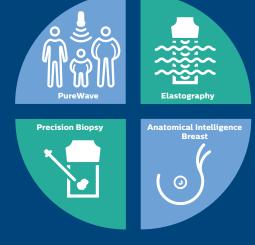
#### Ultimate ultrasound solutions with clinically tailored tools

Clinicians need better solutions that not only improve detection and diagnosis of disease but also increase throughput and productivity while maintaining the highest levels of confidence.

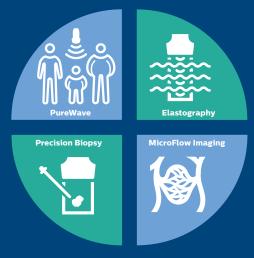
EPIQ Elite ultrasound addresses today's clinical challenges by providing comprehensive solutions across key applications. Harnessing the power of advanced technologies with tailored clinical tools, you now have ultimate ultrasound solutions to help provide patients with the diagnosis and treatment they need.



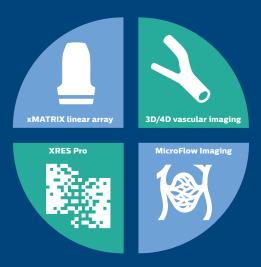
The ultimate ultrasound solution for **liver assessment** 



The ultimate ultrasound solution for **breast assessment** 



The ultimate ultrasound solution for **small parts assessment** 



The ultimate ultrasound solution for **vascular assessment** 

# Protect your patients

#### Powerful system security protects sensitive patient data



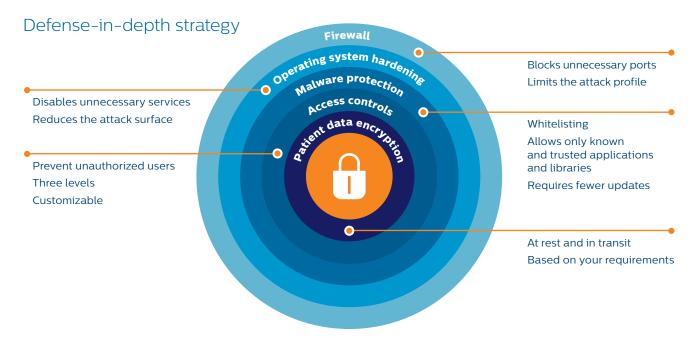
Hospitals and healthcare organizations are spending more to protect their systems and patient data from cyber-attacks. Of healthcare providers, one-third of large data security incidents occur in hospitals.\* That is why healthcare cybersecurity spending will exceed \$65 billion over the next five years\*\*.

Ultrasound devices are highly mobile and can exist in a wired or wireless environment. As a result, Philips has made security a high priority for ultrasound systems. The EPIQ Elite

platform is built on Windows 10 OS and features a powerful defense-in-depth principle with an outstanding set of data security comprising of five core layers.

Defense-in-depth strategy uses a multi-layered defense that is more difficult to penetrate than a single barrier.

This is a basis for best practices in medical device security. Philips recognizes the importance of securing your medical devices and protecting your patient data. Together we can maintain a secure environment by remaining vigilant and identifying the ever-changing cybersecurity threat landscape.



<sup>\*</sup>Gabriel MH, Noblin A, Rutherford A, et al. Data breach locations, types, and associated characteristics among US hospitals. Am J Manag Care. 2018;24(2):78–84.

<sup>\*\*</sup>Black Book Annual Cybersecurity Survey May, 2018.

# A smart investment

Built to withstand the rigors of daily use, EPIQ offers low operating costs and is backed by Philips support and value-added services. The EPIQ system boasts a low total cost of ownership, making it a smart investment.

#### Enhance uptime

- Modular design for enhanced reliability and rapid repair
- Philips remote services\* monitoring, which corrects issues using a standard Internet connection, reducing the need for service calls
- · Access to our award-winning service organization

#### Responsive relationships

The value of a Philips ultrasound system extends far beyond technology. With every EPIQ system, you get access to our award-winning service organization, our competitive financing, and educational programs that help you get the most out of your system.

EPIQ offers a defense-in-depth strategy, implementing 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.



Support request button for immediate access to Philips support.



Philips OmniSphere data intelligence tools help you manage your department, maximize resources, and improve workflow.



#### **Exceptional serviceability**

The system features a superb modular design for rapid repair.

# Count on us, as your patients count on you

The value of a Philips ultrasound system extends far beyond technology. With every EPIQ system, you get access to our award-winning service organization,\* competitive financing, and educational tools that help you get the most out of your system.\*\*

#### Always there, always on

We work as one with your team to keep your EPIQ system running smoothly.

#### Remote service capabilities maximize efficiency

Easy, rapid technical and clinical support through remote desktop enables a virtual visit with a Philips expert.

If you prefer to keep your know-how in-house, the OmniSphere Remote Technical Connect application<sup>†</sup> allows your BioMed team remote access to Philips systems on your network so that you can have remote service capabilities your way.

#### **Proactive monitoring solutions maximize uptime**

Philips proactive monitoring increases system availability by predicting potential system disruptions and proactively acting on them, letting you focus on what is most important – your patients.

#### Immediate support request at your fingertips

The support request button allows you to enter a request directly from the control panel, for a fast and convenient communication mechanism with Philips experts without leaving your patient, minimizing workflow interruption.

### On-cart transducer test provides confidence in your transducer quality

On-cart transducer test provides a non-phantom method to test EPIQ transducers at any time, giving you confidence in your diagnostic information.

# Sharing risk, increasing the return on your investment

Partner with us to maximize utilization and uptime of your EPIQ system.

#### Utilization reports for confident decision-making

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 OmniSphere Utilization Optimizer takes this a step further by providing easy-to-use charts and graphs for all of your applicable<sup>†</sup> networked Philips systems.

### Understanding your needs, designed for you

Our flexible RightFit service agreements, education offerings, and innovative financing solutions can be adapted to meet your needs and strategic priorities.

- Technology Maximizer Program: helps keep your system performing at its peak by continuously providing the latest software from Philips at a fraction of the cost of the same upgrades purchased individually over time.
- **Xtend Coverage**: lets you choose additional service coverage for your ultrasound equipment at the time of purchase to more easily calculate your total cost of ownership.
- Clinical education solutions: comprehensive, clinically relevant courses, programs, and learning paths designed to help you improve operational efficiency and enhance patient care.

#### ISSL technology

- This industry-standard protocol meets global privacy standards and provides a safe and secure connection to the Philips remote services network using your existing Internet access point.
- Business optimization tools such as OmniSphere allow you to use the power of data and connectivity to generate actionable insights and enhance productivity to improve your return on investment.

<sup>\*</sup> Philips is rated number one in overall service performance for ultrasound for 23 consecutive years in the annual IMV ServiceTrak survey in the USA.

<sup>\*\*</sup> Optional. Not all services available in all geographies; contact your Philips representative for more information. May require service contract.

 $<sup>^{\</sup>scriptscriptstyle \dagger}$  Check with your Philips representative for system compatibility.



- 1 2013 engineering study comparing EPIQ with Philips iU22 ultrasound system.
- 2 University of Colorado, protocols study, April 2007.
- 3 Auto Doppler clinical study, December 2011.

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