

**TOSHIBA**  
Leading Innovation >>>



***Aplio 500***

*Platinum Series*

BETTER OUTCOMES  
FROM DETECTION TO TREATMENT

# SUPERIOR IMAGING – CUTTING EDGE TECHNOLOGY



Every patient is unique, many are challenging. Aplio™ 500 delivers outstanding performance for superior clinical precision, diagnostic confidence and departmental productivity. Crystal clear images consistently across a wide variety of clinical specialties and an abundance of expert tools ensure you can always get your diagnostic answer quickly and reliably – from early detection to treatment and follow up.

Aplio's unique core technologies provide an unmatched level of clinical precision, departmental productivity and ease of use, allowing you to get your diagnosis quicker and with higher confidence.



**High Density  
Beamforming**



**High Density  
Rendering**



**Realtime  
Application**



**iStyle+  
Productivity**



Superior imaging performance is one of the key reasons that make Aplio one of today's most popular premium diagnostic ultrasound systems. A full range of clinically proven tools offers uncompromised image quality. A host of advanced imaging and quantification functions ensures that you can make the best informed disease management decisions.



# ENJOY THE PERFECT PICTURE EVERY DAY

At Toshiba we believe that only the best image quality allows a diagnosis to happen quickly and with confidence. Each of our unique imaging technologies provides you with better image quality by reducing noise, strengthening signal and improving visualization. Aplio's revolutionary High Density Beamformer uses the most advanced digital signal processing to control the ultrasonic beams more precisely and flexibly than any other system.



## Precision Imaging and Precision+

With Aplio's new and enhanced Precision Imaging technology you can experience ultrasound imaging as close to reality as never before. From widespread areas to fine details in layers and boundaries Precision Imaging reveals more clinical detail for a faster and safer diagnosis. Precision Imaging delivers outstandingly smooth images with significantly sharpened outline of lesions, enhanced image uniformity and reduced clutter.



## ApliPure™+

ApliPure+ combines the advantages of spatial and frequency compounding to provide you with images of unsurpassed uniformity and detail while preserving clinically significant markers such as shadows behind echo-dense objects. ApliPure+ delivers increased imaging contrast and reduced speckle noise to improve visualization.



## Differential Tissue Harmonics

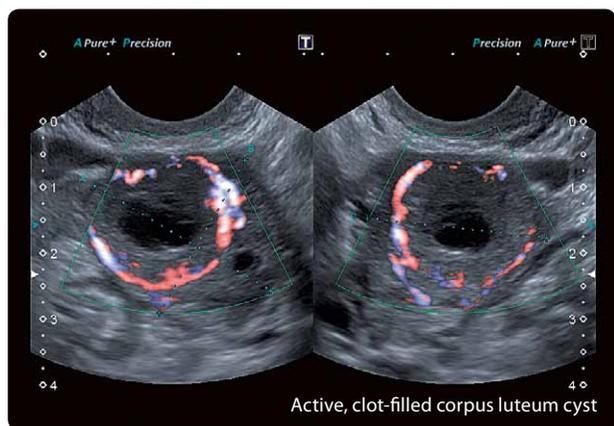
Differential Tissue Harmonic Imaging takes outstanding tissue definition deeper than ever before. By simultaneously transmitting two frequencies in a single pulse Differential Tissue Harmonics provides images of unsurpassed spatial resolution and contrast, alongside with greatly increased penetration.



## OUTSTANDING DIAGNOSTICS STARTS HERE



Designed to increase efficiency, our lightweight transducers feature outstanding clinical versatility, ergonomic shapes and thin, super-flexible cables. Aplio's transducers deliver superb image quality and respond with high flexibility to the widest range of clinical applications.



### Advanced Dynamic Flow™ (ADF)

Advanced Dynamic Flow adds superior spatial resolution to color Doppler imaging to reveal minute vasculature and complex flow patterns with unprecedented accuracy and detail. With ADF you can display flow directionally and accurately at high frame rates, while maintaining the full B-mode image quality.

## SEEING THE UNSEEN

Toshiba's innovative Superb Micro-Vascular Imaging (SMI) technology expands the range of visible blood flow and provides visualization of low velocity microvascular flow never before seen with ultrasound. SMI's level of vascular visualization, combined with high frame rates, advances diagnostic confidence when evaluating lesions, cysts and tumors, improving patient outcomes and experience.



### Monochrome mode

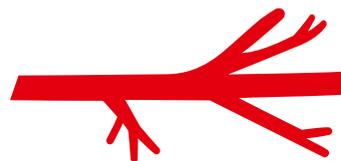
By removing anatomical background information, the monochrome mode reveals the finest vasculature with high sensitivity.



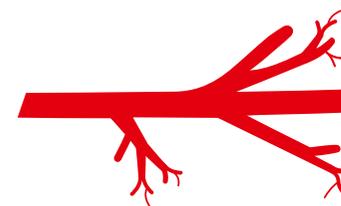
### Color mode

Color-coded SMI demonstrates flow and greyscale information with high temporal and spatial resolution simultaneously.

### Conventional Doppler Imaging



### SMI



### The principle behind SMI

Traditional color Doppler imaging (left) removes clutter from the images by suppressing low velocity components, resulting in a loss of flow in tiny vessels. SMI (left) separates flow from overlaying tissue motion effectively, while preserving even the subtlest low-flow components with unmatched detail and definition.



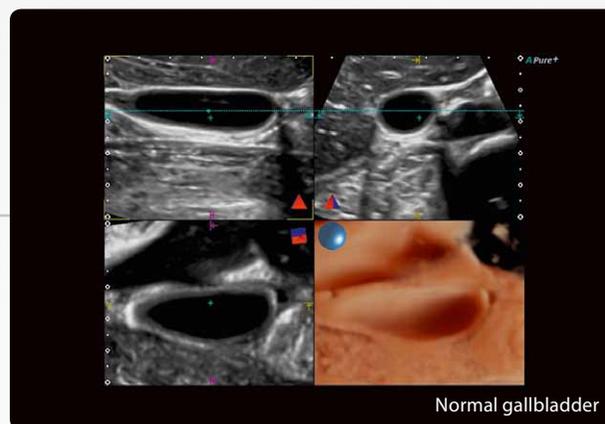
# A NEW DIMENSION OF IMAGING AND INTERVENTION

Aplio's comprehensive 3D/4D volume imaging suite extends your diagnostic capabilities into the next dimension of imaging and intervention by providing accurate renderings and arbitrary volume cuts in realtime or offline. Aplio's new High Density Volume Rendering Engine gives you extraordinary image quality at high volume rates for uncompromised workflow and clinical result.



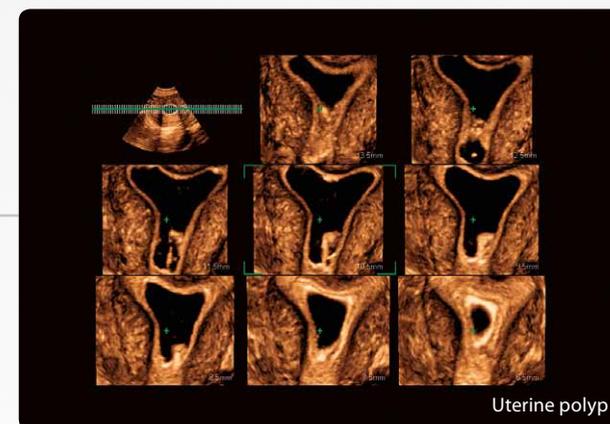
## Luminance

Luminance is an innovative new surface rendering technique that provides a softer, more natural visualization of the human skin resulting in images of almost photographic impression and quality. The function's freely movable light source gives you strong visual feedback on depth and detail. Changing the position of the light can help you identify pathological changes and skin defects better and with greater clarity.



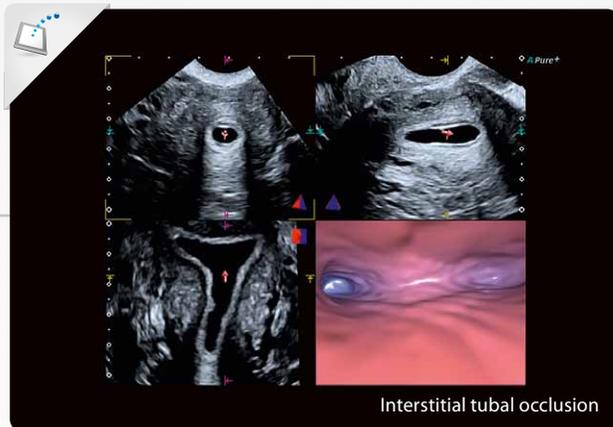
## Multi-Planar Reconstruction (MPR)

Aplio's MPR function allows you to review a specific structure or region of interest simultaneously in three orthogonal planes accompanied by a surface rendering or box volume image. The increased anatomical information contained in the high-resolution cross sections can help you to better understand anatomical relationships or the extent of a given lesion.



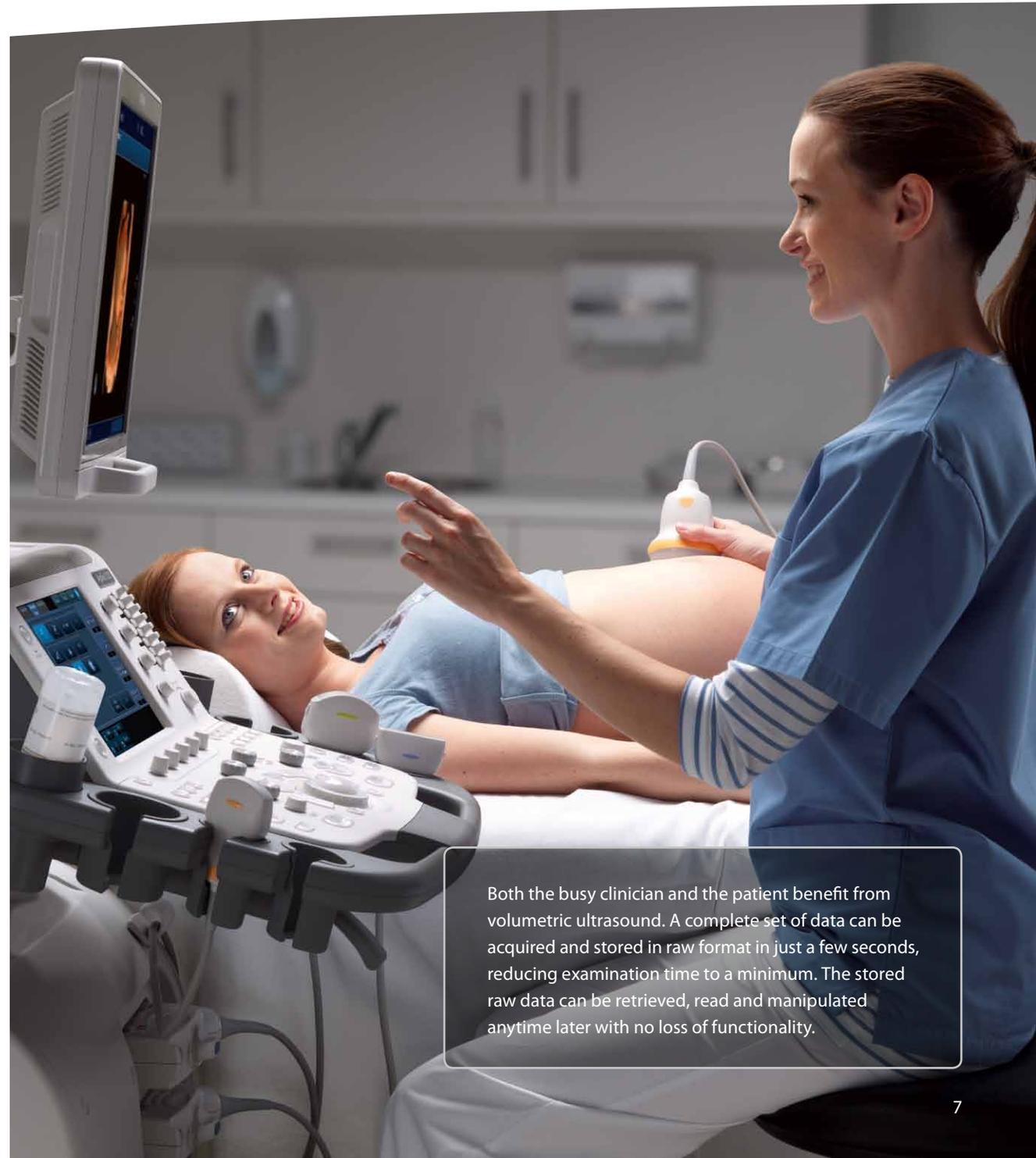
## MultiView

With MultiView you can generate series of cross sections of a given volume in an instant. The resulting display of multiple parallel cut planes provides a very effective tool for the assessment of lesions and their associated structures. MultiView allows you to cut a given volume in any direction to reveal high-resolution off-axis views that can further enhance your diagnostic confidence.



### Fly Thru

Fly Thru is a stunning technology that lets you virtually dive into a volume data set to explore cavities, ducts and vessels from the inside and in 3D. Being comparable to virtual endoscopy, Fly Thru adds cross-sectional ultrasound information to the plain surface data, making it an expert tool for exploring lesions and ingrowing masses, as well as to assist in planning and follow-up of interventions such as placing stents or grafts.

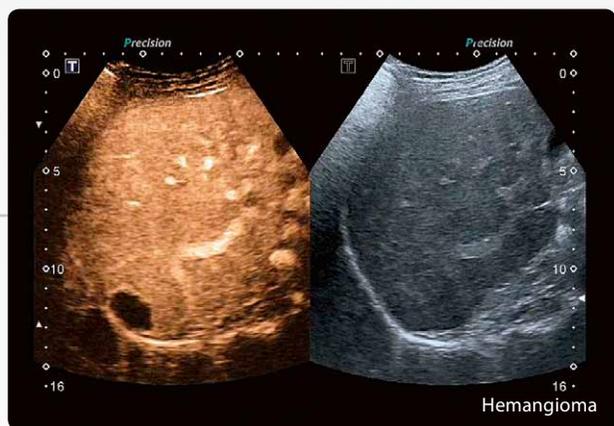


Both the busy clinician and the patient benefit from volumetric ultrasound. A complete set of data can be acquired and stored in raw format in just a few seconds, reducing examination time to a minimum. The stored raw data can be retrieved, read and manipulated anytime later with no loss of functionality.



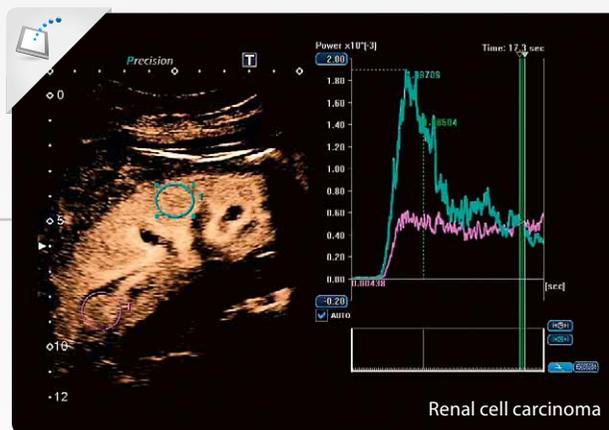
# ADVANCED TOOLS TO HELP YOU BETTER EVALUATE DISEASE

Powered by the industry's most advanced Realtime Application Platform, Aplio 500 provides you with a complete range of exclusive, clinically proven technologies to increase your diagnostic confidence. By giving you valuable additional information in easy to understand visual, parametric and quantitative formats, these advanced technologies can help you avoid supplementary exams to get your diagnostic answer. Thus, you can save expenses and enhance your department's productivity.



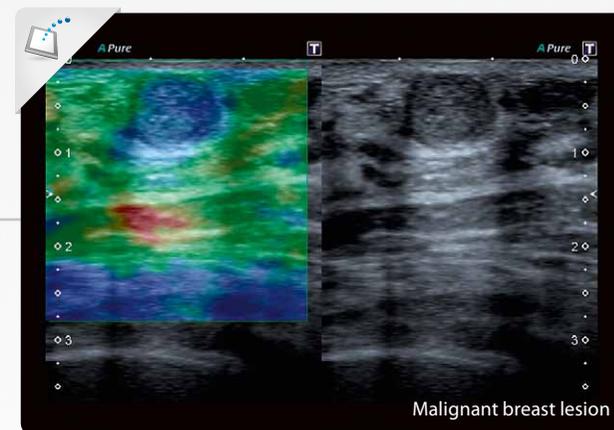
## Contrast-Enhanced Ultrasound (CEUS)

Our comprehensive contrast imaging package allows you to assess perfusion dynamics in a wide range of clinical settings. Depending on the system configuration, up to 24 transducers support contrast-enhanced studies, including an ample variety of specialized probes such as high frequency, intra-operative, intra-cavity and 3D/4D transducers.



## Contrast quantification

Aplio 500's CEUS quantification suite allows you to assess perfusion dynamics with high precision and flexibility to create objective results for clinical research and routine. The software is highly reproducible thanks to its raw data processing and its semi-automatic ROI tracking functionality. The contrast quantification suite is available as option on both the console and the workstation.



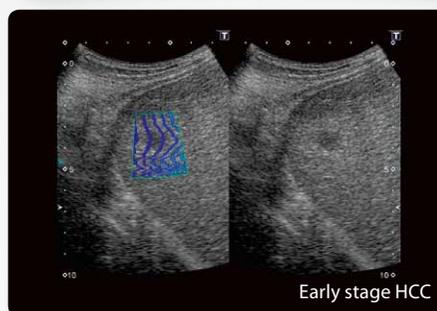
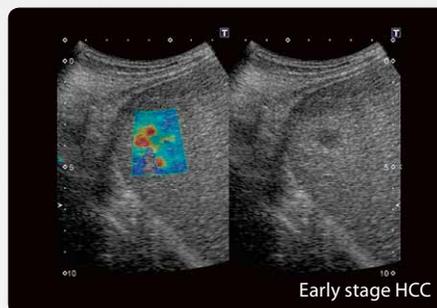
## Realtime elastography

Our comprehensive elastography solution with raw data functionality assists you in localizing and assessing palpable masses with high accuracy, sensitivity and reproducibility in a wide range of clinical settings. Different degrees of tissue elasticity can be quantified or color-coded in parametric images making suspicious tissue changes quantifiable and visible in the ultrasonic image.



## SHEAR WAVE ELASTOGRAPHY

Toshiba's shear wave technology provides a quantitative measure and dynamic visual display of tissue stiffness in a variety of clinical settings ranging from abdominal to small parts examinations. The highly accurate and reproducible tool provides fully integrated measurement and reporting for seamless integration into your clinical workflow.

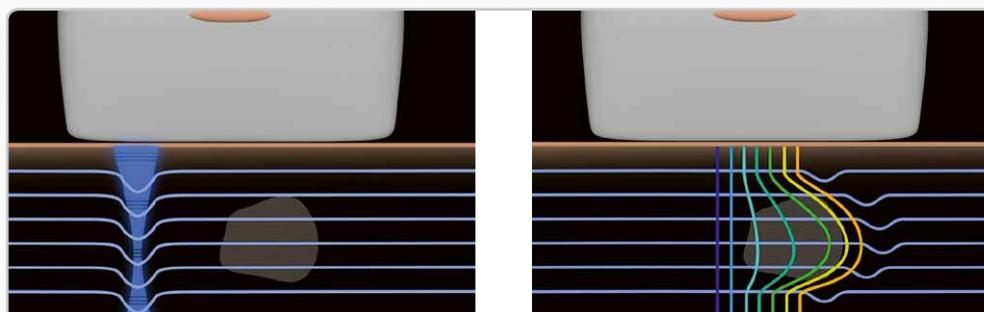


### Smart Maps

Aplio's Smart Maps allow you to visualize and quantify shear wave propagation in a user-defined region of interest in realtime. The user can select both dynamic propagation speed and elasticity displays for visual assessment and quantification.

### Propagation mapping

Aplio's unique propagation map is a powerful and intuitive tool to visually assess the quality of an elastogram. Areas with distorted or absent shear wave propagation are easily recognized by means of a disrupted wave front.

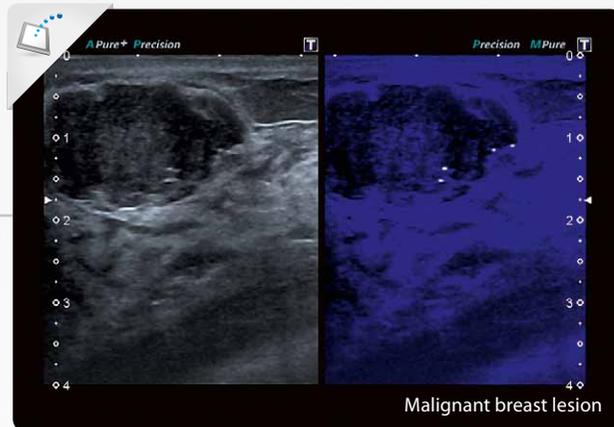


### The principle behind shear wave elastography

Shear waves are generated inside the human body by means of an ultrasonic burst (left). Depending on tissue stiffness, shear waves travel at varying speed, but generally very slowly through the human body. Their propagation can be followed and visualized using conventional ultrasound imaging techniques (right). The propagation speed of the shear waves directly correlates with tissue stiffness.

## Specialty transducers

Aplio 500 provides you with an extensive selection of specialty transducers for the widest range of clinical applications, including many advanced techniques such as elastography or CEUS. All specialty probes feature the same outstanding image quality and versatility as the standard transducers.



### MicroPure™

MicroPure is an innovative clinical tool that can help you identify microcalcifications, a potential marker for malignancy, in the breast and other organs. The technique highlights automatically detected calcifications as white spots in the masked 2D image. MicroPure can provide effective support for precise biopsies under realtime ultrasound control.



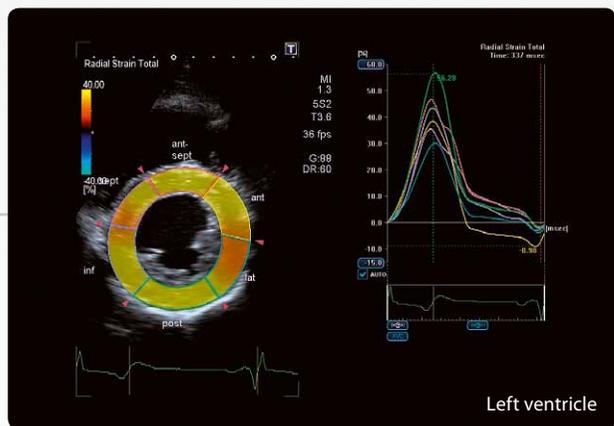
### Automated NT measurement

Aplio's automated NT measurement function is a simple, fast and highly reproducible tool for assessing the width of the fetal nuchal translucency – a potential marker for chromosomal conditions – at the end of the first trimester. The automated measurement function can assist you to ensure measurements are taken correctly and with sufficient imaging magnification.



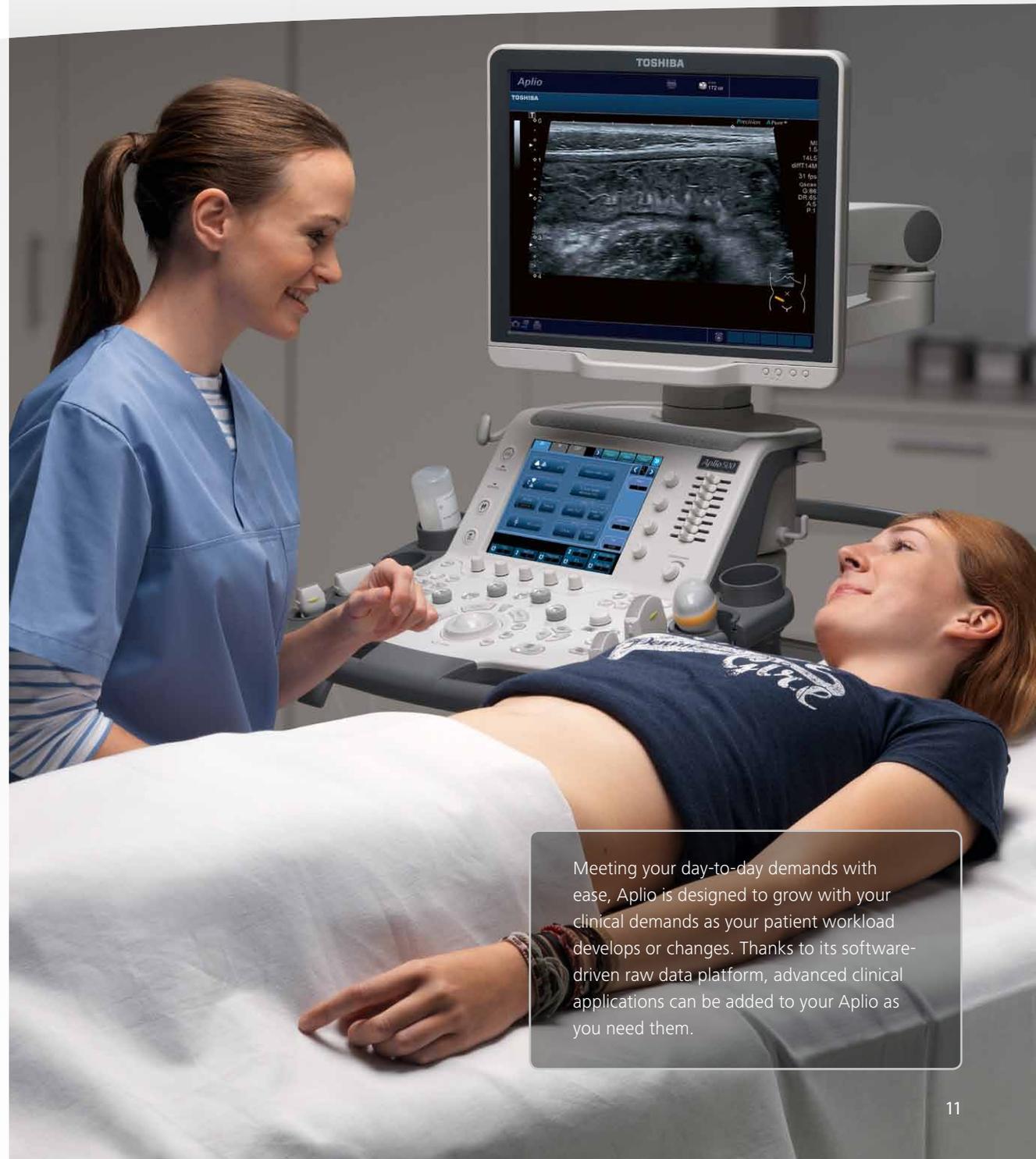
### Auto IMT

The intima-media thickness (IMT) of the carotid artery is an important parameter for assessing a patient's risk of developing cardiovascular disease. Aplio provides you with an easy to use tool to determine the thickness of the intima-media layers of the near and far arterial walls automatically at an optimal angle of incidence and in two complementary planes.



### Wall Motion Tracking

Toshiba's proprietary speckle tracking technology provides immediate visual and quantitative access to regional myocardial wall motion with unrivalled accuracy and resolution. With Aplio you can assess and quantify parameters such as strain, strain rate or displacement during the examination or anytime later, on the console or on the workstation.



Meeting your day-to-day demands with ease, Aplio is designed to grow with your clinical demands as your patient workload develops or changes. Thanks to its software-driven raw data platform, advanced clinical applications can be added to your Aplio as you need them.

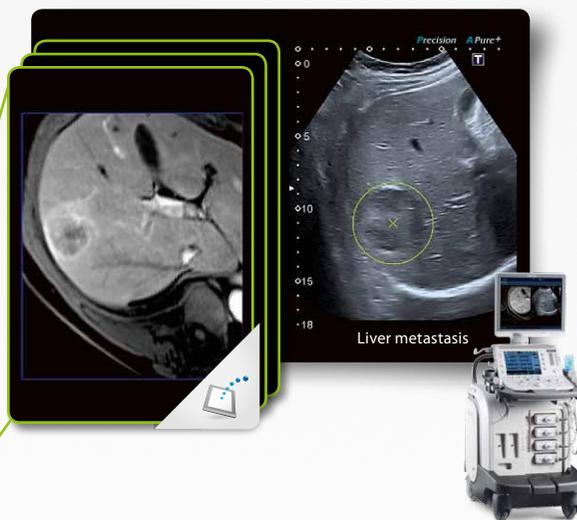


# INTERVENTIONAL IMAGING

Aplio provides you with a wide range of tools and options for advanced imaging and interventions, helping you to deliver better outcomes from early detection to treatment and follow-up. Dedicated transducers and an abundance of imaging and navigation tools help you enhance clinical confidence and accuracy during interventional procedures and their follow-up.

## SMART FUSION

Correlating different imaging modalities in real-time, Smart Fusion allows you to locate difficult lesions faster, to navigate complex anatomy securely, and to improve your confidence while carrying out invasive procedures. For a comprehensive pre- and post-interventional evaluation Smart Fusion allows you to work in any ultrasound imaging mode including color Doppler and contrast-enhanced ultrasound.



Smart Fusion reads 3D DICOM data sets from all major imaging modalities and shows the corresponding images contained in realtime adjacent to the live ultrasound display.

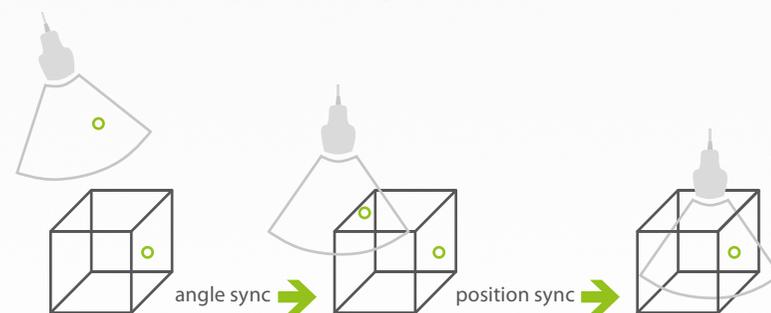
### Position sensor

A magnetic position sensor with sub-millimeter accuracy allows for precise spatial correlation of different imaging modalities in realtime. Attaching the sensor to the transducer shaft allows for undisturbed imaging and intervention.



### Merging modalities to improve confidence

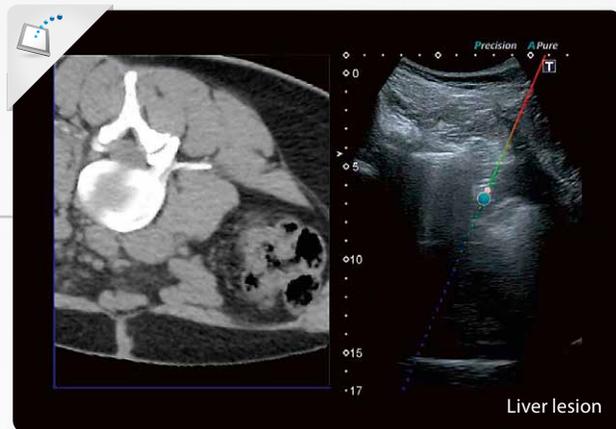
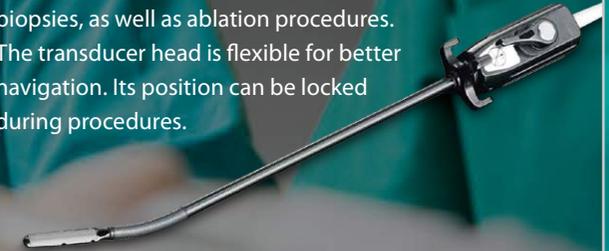
Matching the transducer position with the pre-acquired 3D data set is a simple and quick two-step process. By moving the transducer over the region of interest you can now browse the area simultaneously in both realtime ultrasound and pre-acquired CT, MR or ultrasound data. Intelligent target and marker points facilitate navigation in the region of interest.





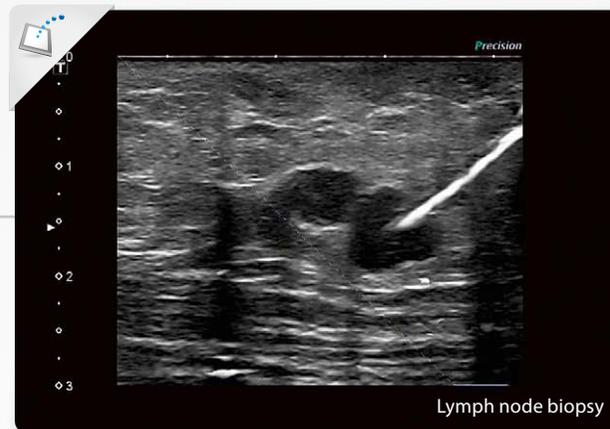
### Laparoscopic imaging

Aplio's laparoscopic transducer extends your clinical capability supporting minimally invasive surgery, biopsies, as well as ablation procedures. The transducer head is flexible for better navigation. Its position can be locked during procedures.



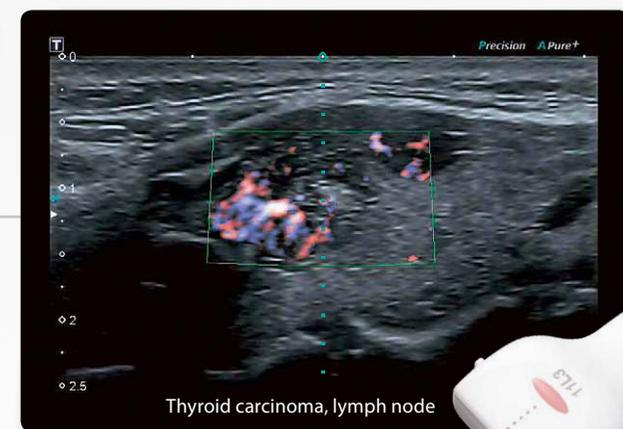
### Smart Navigation

To enhance precision and patient safety during ultrasound-guided treatment procedures, the position and direction of up to three biopsy needles can be tracked electronically with Aplio. Color-coded, virtual biopsy lines corresponding with the needle positions are displayed on the live image to facilitate navigation.



### BEAM

Toshiba's Biopsy Enhancement Auto Mode (BEAM) provides a clearer visualization of biopsy needles in the live ultrasound image. BEAM enhances the visibility of a biopsy needle and works with all common needle sizes. The function provides three enhancement levels and selects the best scan angle fully automatically.



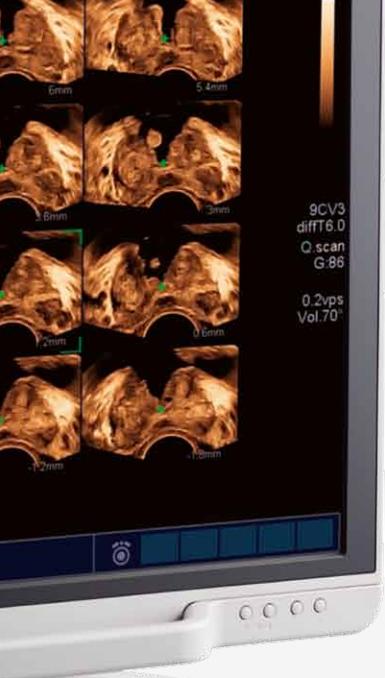
### Center Marker

Aplio's Center Marker is a handy tool for matching the position of a given lesion or region of interest seen in the ultrasound image with the corresponding spot on the skin surface or vice versa. The Center Marker can help facilitate biopsies or procedures involving other imaging modalities.



# PERFORMANCE MEETS INTELLIGENCE

Aplio's unique iStyle™+ productivity suite provides you with a full host of technologies that offer ergonomic relief by reducing keystrokes, improving workflow and raising the consistency of exams. A smaller, lighter form gives you greater maneuverability while the fully configurable console and intelligent workflow support functions enable faster exams and greater productivity.



## Ergonomic user interface

Aplio 500's compact design with floating console and fully articulating monitor arm enables you to create an ergonomic work environment in virtually any clinical setting. The system's premium quality LCD screen with the four-axis arm can move and swivel into perfect position for better viewing and to protect you from neck, shoulder and eye strain.



## 3D multifunctional keys

Aplio's 3D multifunctional keys offer four degrees of freedom for outstanding usability. Their mode-sensitive function is fully programmable and displayed in the adjacent touch screen in an easy to understand manner.



## Fully programmable console

You can customize Aplio's console to suit your clinical needs and personal preferences simply by reassigning functions to the keys of your choice. This results in better reach, fewer keystrokes and a shorter learning curve. The mode-sensitive touch screen, which is now also programmable, enables direct access to complex measurements, labels and advanced functions.



## Quick Start clinical settings

Changing presets during an exam can disrupt your workflow, because system settings need to be optimized from scratch. The fully programmable Quick Start menu allows you to adjust only the relevant parameter set at a single touch of a button. All other settings remain untouched. This way you can easily adjust the system to any specific clinical target while ensuring a smooth, uninterrupted workflow.



## QuickScan image optimization

QuickScan allows you to achieve greater consistency in your exams by ensuring that superb image quality is the benchmark at all times. With a simple push of a button you can automatically optimise image quality in 2D and spectral Doppler modes with acoustic precision while suppressing unnecessary noise and clutter in echo-weak regions.



## Quick Assist protocols

Aplio's protocol assistant provides a reliable method to ensure that the same exam is performed from patient to patient. Once activated the tool automatically launches a clear, easy to read on-screen menu that will guide you through your exam. Aplio's protocol assistant can be customized based on your department's scanning procedures.



From imaging to quantification, from reporting to archiving, Toshiba provides a full-spectrum solution that helps you manage routine and advanced clinical studies more efficiently.

Thanks to the system's embedded raw data functionality you can review, analyze, report and archive your clinical data anytime with no loss of functionality. Aplio is designed to embrace open network standards to facilitate easy integration in the widest variety of network environments.

Additionally, to ensure the system's continuous high performance, we offer a range of support services our customers have consistently rated best in the industry.

## Remote service

We're here – even when we're not there

Our remote service support and diagnostic system InnerVision provides secure access for Toshiba specialists through a VPN network. Using it, our highly trained customer engineers and applications specialists can monitor customer systems remotely and assist our on-site engineers in preventing problems. All without interrupting your essential flow of patient care.

# Innervision

## UltraExtend™ FX

Our external workstation solution gives you full access to your clinical data and diagnostic tool set wherever and whenever needed. With embedded raw data functionality and a host of clinical tools you can review, analyze, report and archive your data quickly and easily.



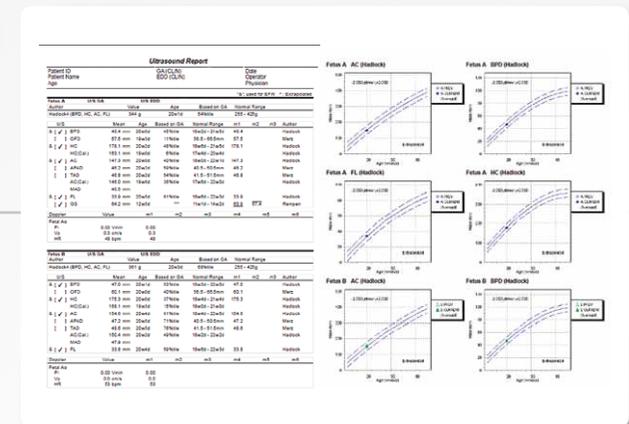
## Managing your study data

Aplo's fully integrated patient and image management system allows you to review and manage your studies conveniently onboard before sending them to PACS for reporting or archiving, including image and raw data as well as structured reports. And if a study is not performed in the exact order, Aplo's shuffle feature allows you to place the images into the correct order before sending them to PACS for reading.



## Exporting your clinical data

Aplo ships standard with a DVD writer and USB connection for study documentation and data export. The unit can be equipped with integrated medical printers or a DVD recorder for onboard study documentation. A digital video interface is available to connect your Aplo to external devices such as additional monitors.



## Reporting options

Aplo provides comprehensive onboard facilities allowing you to semi-automatically generate reports including measurements, charts, clinical images, as well as text. Reports are customizable to meet your department's standards and formats. If you prefer to do your reporting offline, we offer a wide range of workstation and connectivity solutions.

# BRINGING INNOVATION TO LIFE

For over 130 years Toshiba's research and development has improved the health and welfare of people around the world. Today, Toshiba Medical Systems offers a full range of diagnostic imaging products and is a reliable service partner in more than 120 countries around the globe. Our Mission is to deliver the best quality products and services, as well as the industry's best after-sales support through long-term, customer focused partnerships.

## Innovation

Toshiba is a world leader and innovator in high technology. Year on year we file thousands of patents, making innovation a key part of the Toshiba fabric. In accordance with our Made for Life™ commitment, we develop innovations that improve patient care and provide lasting quality for a lifetime of value.

## Quality

At Toshiba quality and reliability is at the heart of everything we do. With technologies and products being developed in more than 30 R&D laboratories and over 300 subsidiary companies across the globe Toshiba engineers are dedicated to develop the best-performing, most reliable and environmentally friendly product solutions for you.

## Design

Our product design is driven by customer feedback and the close consultation with industry visionaries and opinion leaders. Our award-winning Design Center has over 50 years of experience in developing pioneering products and industry-leading solutions to ensure that you can work at the highest standards of diagnostic precision, usability and productivity.

## Partnership

Making sure your systems deliver from day one is an important part of our relationship. Whether you need onsite or offsite training, we can provide options that work best for you. Experienced clinical application specialists will help you and your team to maximize the potential your diagnostic imaging equipment has to offer.

The logo features the word "TOSHIBA" in a small, white, sans-serif font above the word "eco" in a large, white, lowercase sans-serif font, followed by "style" in a smaller, white, lowercase sans-serif font. The text is contained within a green speech bubble shape with a tail pointing towards the bottom right.

## TOSHIBA eco style

Caring for earth and its people is at the heart of everything Toshiba does – and one of the many ways we innovate. Toshiba's passion for safeguarding earth is enshrined in our Environmental Vision 2050, whereby we seek to improve our eco-efficiency by a factor of ten over the next four decades through strict monitoring of energy usage, continuous improvement of manufacturing processes and eco-conscious product development. Far from being a distant goal, the Environmental Vision 2050 sets tangible milestones year by year. These include the reduction in emission of CO<sub>2</sub> and other greenhouse gases, and the complete phasing out of certain hazardous substances from our products.

### Design, manufacturing and shipment

#### **No sustainability without quality**

By manufacturing high quality diagnostic imaging equipment that lasts, we ensure that you can enjoy working with your machine over many years. Our software-driven platforms are easy to upgrade to keep you abreast of new diagnostic tools for a long time. And while we continuously work to improve the performance of our equipment, we drive down consumption of energy and resources at the same time.

### Product use

#### **Energy efficiency is the key**

A major part of the greenhouse gas emissions our medical imaging systems produce accrue while you scan your patients. Therefore we design our products to be outstandingly energy efficient, and even to recycle energy wherever possible. Take for instance our Aquilion ONE™ CT scanner. While braking its gantry, 25% of the energy used to set it into rotation can be recovered and stored for the next scan.

### Refurbishment and recycling

#### **End of use is not the end of life**

Because outstanding quality lasts, your Toshiba medical imaging equipment remains of high value even after you replace it with new equipment. Our Secondlife refurbishment program is an integral part of our corporate philosophy helping to maximize the life span of our equipment by enabling you to sell or buy used equipment of the same high quality as our new machines.



# ***Aplio***

*Platinum Series*

**TOSHIBA MEDICAL SYSTEMS CORPORATION**

**[www.toshibamedicalsystems.com](http://www.toshibamedicalsystems.com)**

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Toshiba Medical Systems Corporation meets internationally recognized standards for Quality Management System ISO 9001, ISO 13485.  
Toshiba Medical Systems Corporation Nasu Operations meets the Environmental Management System standard, ISO 14001.

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