cvi42 ®

INNOVATION TO STREAMLINE
CARDIOVASCULAR IMAGING
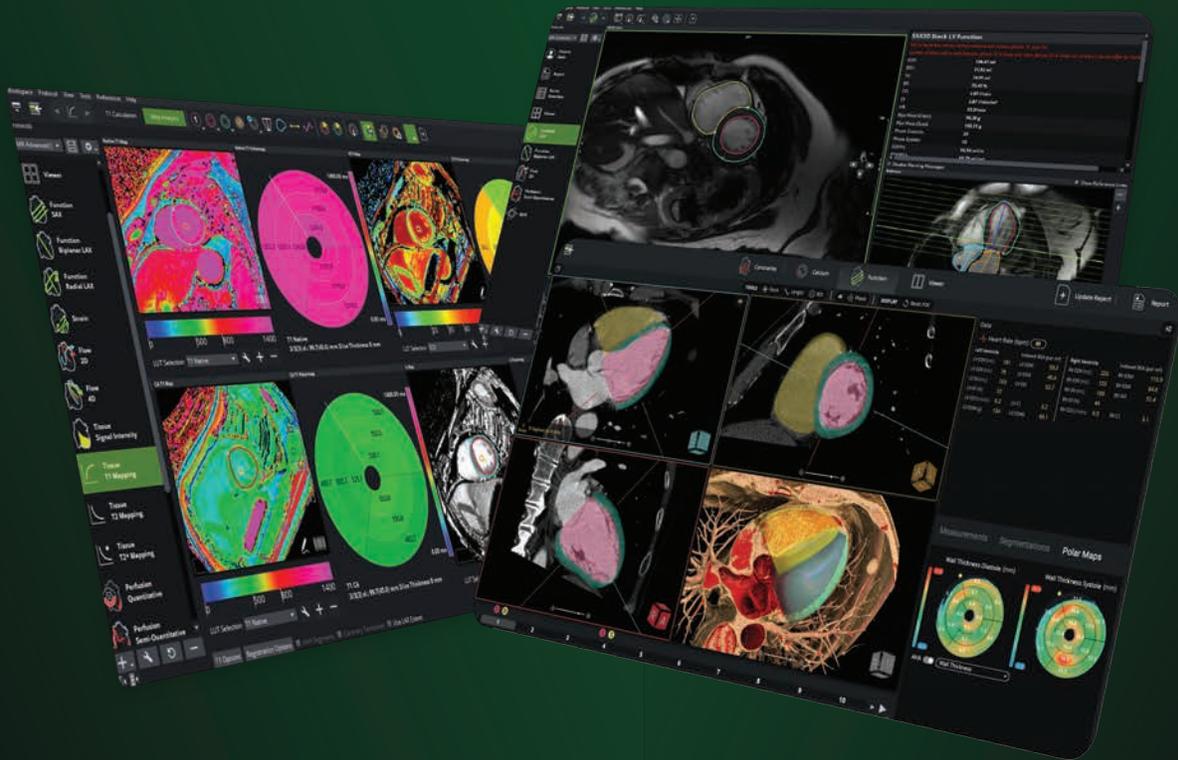
At the **Heart** of
IMAGING
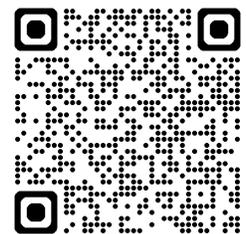
circle
CARDIOVASCULAR
IMAGING

4 Clinical Areas and
Multiple Modules

CVi42®

CVi42® PLATFORM

Magnetic Resonance — MR
- Cardiac MR
- 4D Flow
- Strain
- Quantitative Perfusion

Computed Tomography — CT
- Coronaries
- Plaque
- Ca Scoring
- Function
- Strain
- PCAT
- Aorta
- Carotid
- Peripheral

Interventional Planning — IP
- Aortic Valve
- Mitral Valve
- Left Atrial Appendage
- EVAR - TEVAR - F/BEVAR
- Carotid
- Peripheral
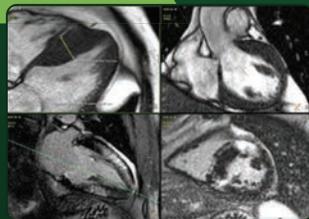
Electrophysiology — EP
- ADAS 3D LV
- ADAS 3D LA

Automated with AI for an Integrated, Best-in-Class Solution

Powerful and fully HIS-enabled to streamline
cardiovascular reading and reporting.

VIEWER
- Multiple image syncronization options
- Full complement of measurement tools
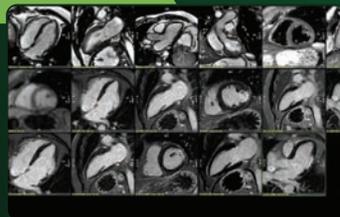- Compare baseline and follow-up scans

PATIENT DATA
- Review and edit study data
- Create and share comments for case review
- Fully embedded in HIS

SERIES OVERVIEW
- Quick overview of complete study
- Filter series based on contours or orientations
- Series composer to combine or rearrange series

REPORT
- Auto-populating report
- Automated reference values
- PowerScribe One integration[†]
- Multiple export formats
- DICOM SR support
- HL7 compatible[†]

[†] Additional license required.

At the **Heart** of
IMAGING

circle
CARDIOVASCULAR
IMAGING
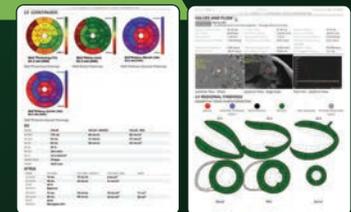
MR | CT Web Viewer

CVi42®

A new web-based, easy-to-use viewing platform for improved collaboration across your health care team.

VIEW IMAGES & PRE-POPULATED REPORT

- Access pre-processed MR SAX function results
- Check 2D Flow, Tissue, and LGE contours from pre-analyzed workspaces
- Apply study tags to organize your cases
- Smart CMR viewing with series classification and automated view settings
- View MR and CT reports, including pre-populated Calcium Scoring results
- Review processed LAA pre-planning results
- Smart layout to review original images and secondary captures created using TruPlan
- Edit and finalize reports on the go
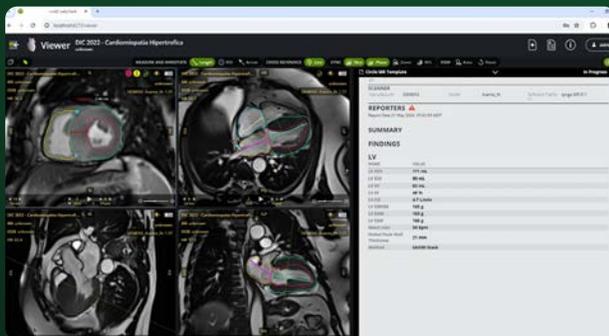
ADD / EDIT MEASUREMENTS

- Modify function SAX contours and update corresponding results directly within the report, all from your web browser
- Add basic measurements (Line, ROI, Arrow) within the Web Viewer interface and transfer measurement data to the report
- Re-assign calcium scoring labels and promptly update results within the report

REVIEW REPORT

- Review finalized report and images from your web browser with colleagues or referring physicians
- Show patients their images in the exam room

At the **Heart** of
IMAGING

circle
CARDIOVASCULAR
IMAGING

Comprehensive, fast, accurate reading and reporting for cardiac MR

Function

Detect wall motion abnormalities, stroke volume, ejection fraction, volumes and masses
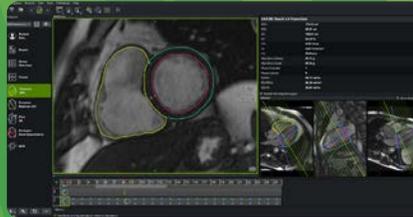
SHORT AXIS

○ Full ventricular with server-side processing

○ Automated AI-based ventricular contour detection

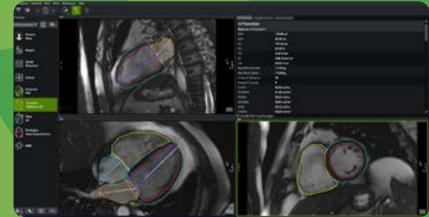○ Polar map display for LV wall thickening and motion

MULTIPLE LONG AXIS

○ Quick and highly reproducible LV assessment

○ Semi-automated contour detection

○ Dynamic assessment of atrioventricular junction
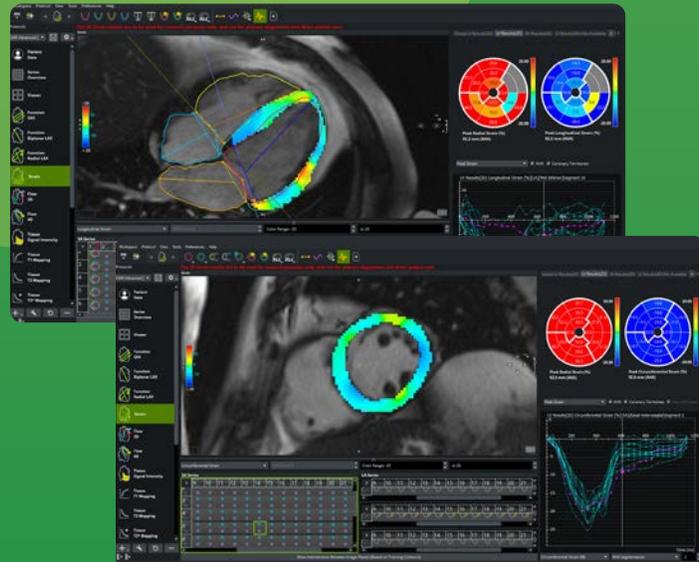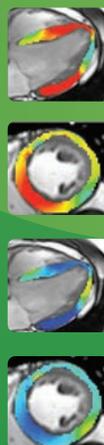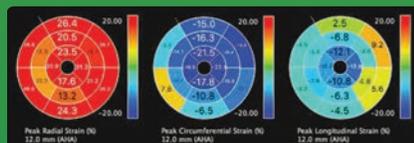
LONG AXIS

○ Fully automated AI-based LV and LA/RA assessment

○ Automated ventricular contour detection

○ Automatically calculated long axis strain values

MYOCARDIAL STRAIN[†]

○ AI-based ventricular contour detection

○ Global and regional radial, circumferential and longitudinal strain

○ Strain rate, displacement, velocity torsion and torsion rate

[†] Additional license required.

Flow

Quantify flow, automatically calculate Qp:Qs and correct for aliasing.

2D FLOW

- Full flow analysis for volumes with server-side processing.
- Automated AI-based aortic and pulmonary contour detection.
- Offset correction and antialiasing.
- Flow comparisons and Qp:Qs.

4D FLOW[†]

Pre-Processing:

- AI-automated workflows to visualize and quantify flow patterns anywhere in a 3D structure.
- Auto-loading and auto-contouring, AI-based segmentation of aorta, pulmonary artery and heart chambers.
- Automatically detected peak-velocity planes in the aorta and pulmonary artery for automated Qp/Qs measurement.
- Faster loading times for large studies.
- Crop large data sets to a ROI
- 4D offset correction and antialiasing.
- Comprehensive 4D viewer for flow dynamics.

Analysis

- Diverse flow visualization
- Automated vessel lumen detection and planar flow measurement
- Automated Qp:Qs calculation
- Pulse Wave Velocity

Segmentation

- PCMRA optimization for small or big sized vessels
- Advanced vessel segmentation, centerline correction, and extraction for multiple structures
- Export volume as STL file

Advanced Research Tools[††]

- Kinetic energy
- Relative pressure
- 3D Wall Shear Stress
- Energy loss
- Ventricular flow assessment including direct, residual, delayed, and retained flow components and associated kinetic energy
- 2D circumferential and axial Wall Shear Stress
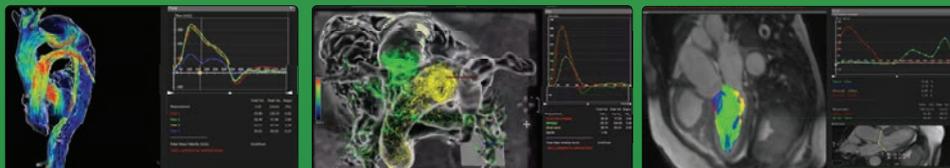
[†] Additional license required.
[††] Not for clinical use.

Tissue

Assessment of myocardial scar, edema, MVO, ECV and iron concentration.

Signal Intensity[†]

○ Analysis of early and late enhancement and T2 weighted images

○ AI-based contour detection

○ Semi-automated regional scar, global scar, edema and MVO analysis

○ Derive and synchronize contours between series

○ Multiple algorithm options for quantifying scar pattern presentations
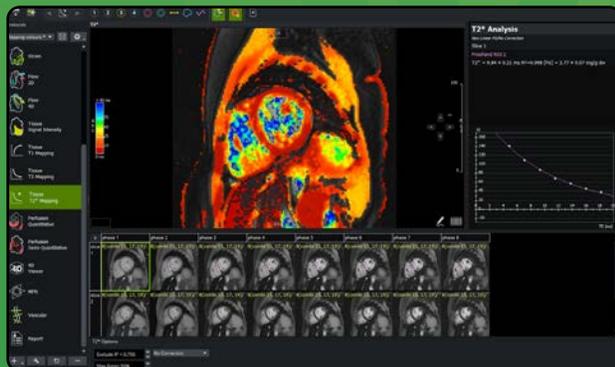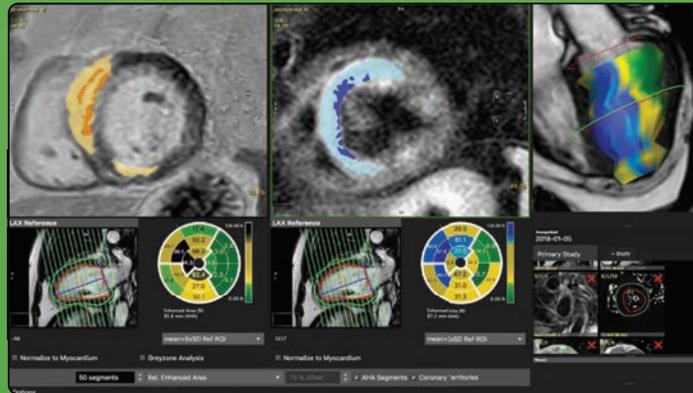
T2* MAPPING

○ Global and regional T2* analysis

○ T2* color overlay

○ Global and regional iron quantification for 1.5T sequences

T1[†]& T2 MAPPING

○ Global and regional T1 & T2 analysis

○ Automated image loading and AI-based contour detection in T1 and T2 maps

○ Motion correction

○ T1, T2 and ECV map generation with customizable color charts
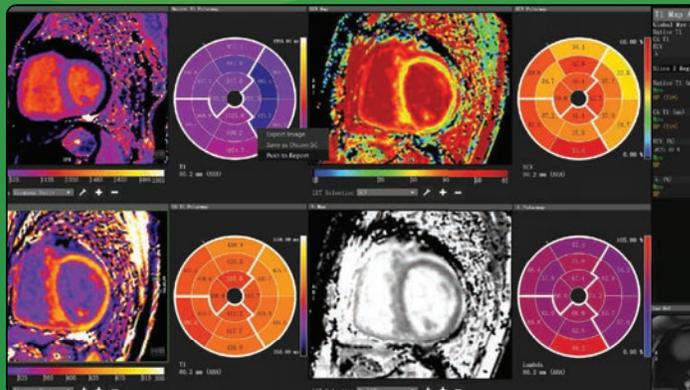
[†] T1 Mapping and Signal Intensity analysis involving images acquired with contrast agents is only available for non-clinical use in USA.
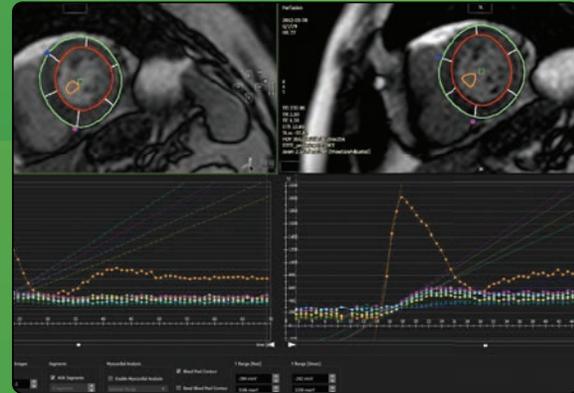
Perfusion†

Detect myocardial blood flow perfusion defects to assess ischemic Heart Disease.


QUALITATIVE ANALYSIS

○ Simple viewing for visual analysis of rest and stress perfusion images next to scar and wall motion series
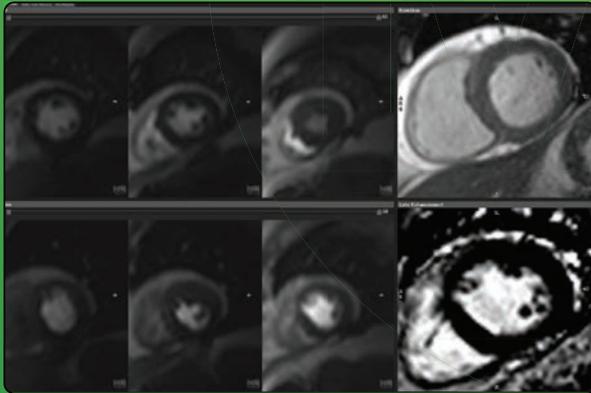
SEMI-QUANTITATIVE PERFUSION

○ Polar map and curve display of perfusion parameter including MPR

QUANTITATIVE PERFUSION ††,†††

○ Vendor neutral

○ 1-click workflow for rest and stress myocardial blood quantification

○ Free breathing acquisition (cvi42 Moco)

○ Pixel maps display of absolute and relative MBF values

○ Multi-sequence support
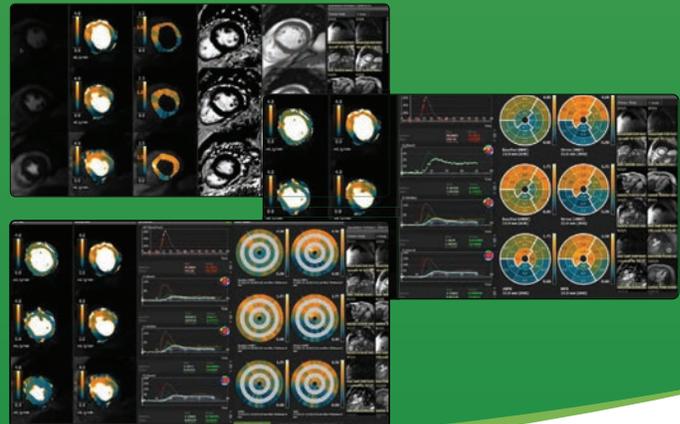
† Perfusion involving images acquired with contrast agents is only available for non-clinical use the USA.
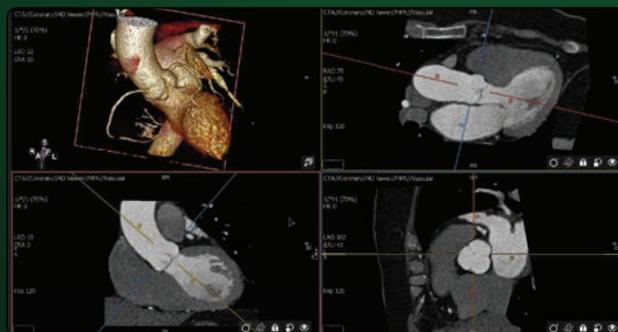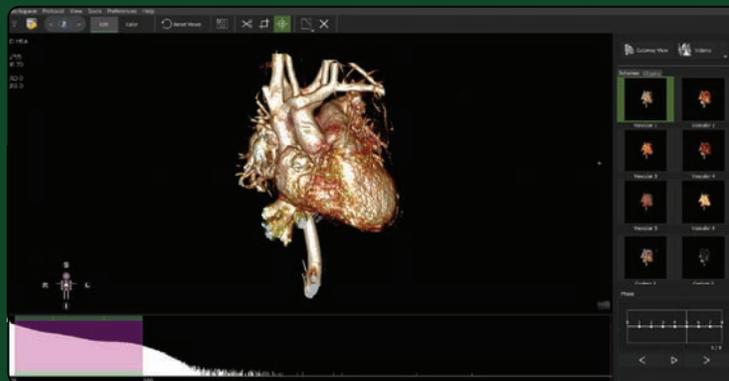†† Additional license required.
††† Not for clinical use.

MR CT Anatomy

CVi42®

Assess complex cardiovascular morphology in 2D/3D with diverse measurement tools.

4D VIEWER

- 3D/4D data display
- DVR, Angio and MIP renderings
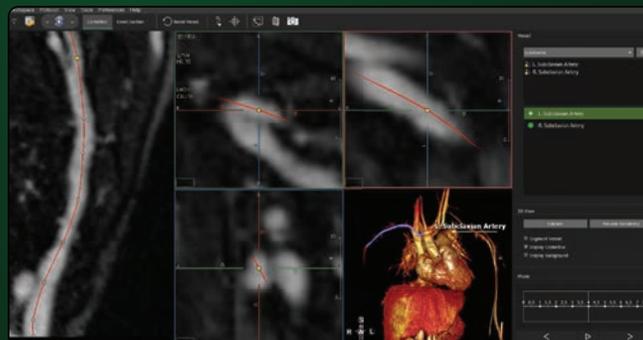- Semi-automated segmentation and calculations

MPR

- Full complement measurement tools
- Predefined, customizable worklists
- 3D/4D volume rendering
- Vessel surfing

VASCULAR

- Vessel lumen and stenosis measurements
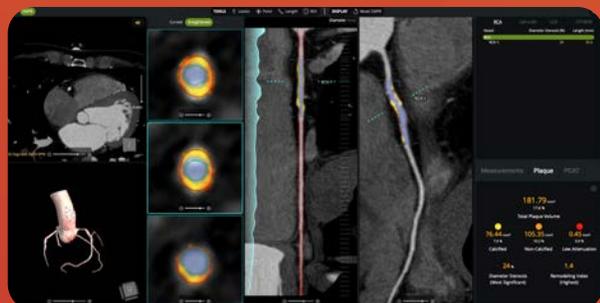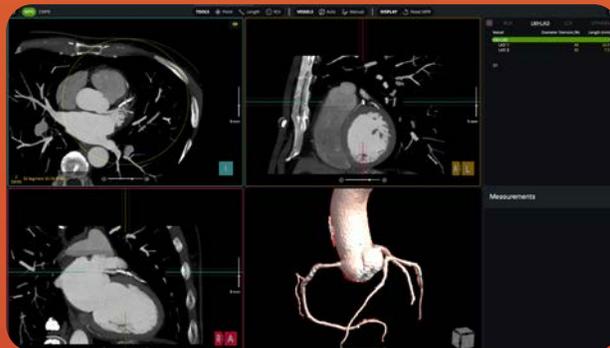- Semi-automated vessel segmentation and centerline extraction
- Volume and MIP renderings

At the **Heart** of
IMAGING

circle CARDIOVASCULAR IMAGING

Read and report cardiac CT using server-side processing for assessment of coronary artery, plaque, calcium scoring, function, and myocardial deformation.

CT CORONARIES

- Zero-click segmentation and labeling of primary and secondary coronary arteries
- Automated detection of suspected coronary lesions
- Automatic 3D heart view generation for editing and quality assessment
- Lesion-level total occlusion marking
- Single- and dual-reference marker for stenosis calculation

CT PLAQUE [†]

- AI-automated coronary lumen and wall segmentation
- Detailed assessment of calcified, non-calcified, and low-attenuation plaques
- Per-lesion and per-vessel plaque analysis
- Remodeling index assessment helps identify high-risk plaques beyond stenosis severity
- Enhanced coronary reporting

CT CALCIUM

- Zero-click calcium scoring segmentation via server-side pre-processing
- Automated quantification and categorization of calcified plaque in major coronary arteries in non-contrast enhanced CT images
- Automatically generate Agatston score for additional cardiac event risk stratification information[††]
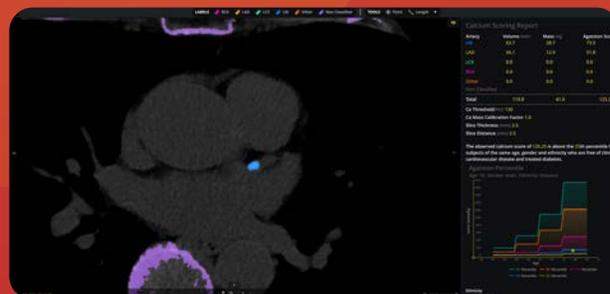
[†] Additional license required.
[††] Stratification is for informational purposes only.

At the **Heart** of
IMAGING

circle CARDIOVASCULAR IMAGING

Read and report cardiac CT using server-side processing for assessment of coronary artery, calcium scoring, function, and myocardial deformation.
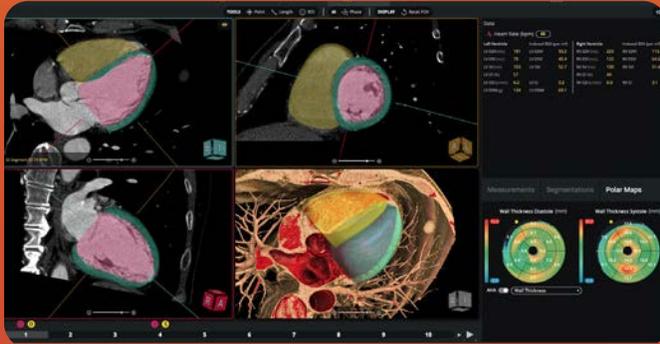

CT FUNCTION

- Server-side pre-processing and 3D-based, AI-driven cardiac function analysis
- User-friendly tools for manual editing, such as AutoFOV viewport alignment
- Endoluminal view and overlay hiding capabilities, enabling a clearer understanding of underlying anatomy
- Polar maps for wall thickness and motion

CT STRAIN [†][††]

- AI–based re-slicing of multi-phase volumetric CT studies to create short-axis and long-axis series for strain assessment.
- AI-based contouring of reformatted series.
- Automated calculation of radial, circumferential and longitudinal peak strain, strain rate, displacement, velocity, torsion and torsion rate.
- Easy to deploy and integrate smoothly into your existing clinical environment.
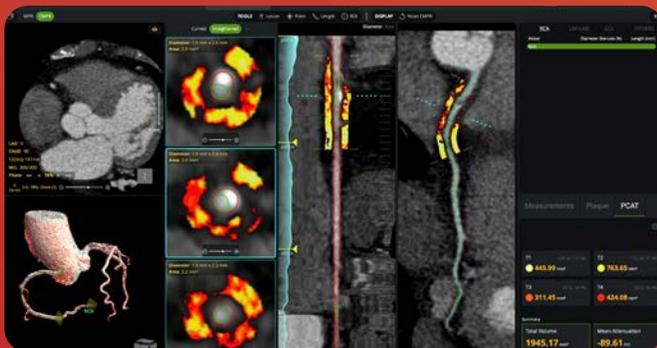
PERICORONARY ADIPOSE TISSUE (PCAT)[†]

- Assess inflammation surrounding the vasculature for evaluation of coronary artery disease
- Adjustable thresholds, extents, and correction factors for flexible analysis
- Calculate total volume, volume per threshold, and mean attenuation

[†] Not for clinical use.
[††] Additional license required.

At the **Heart** of
IMAGING

circle CARDIOVASCULAR IMAGING

Fast and efficient Structural Heart interventional planning.
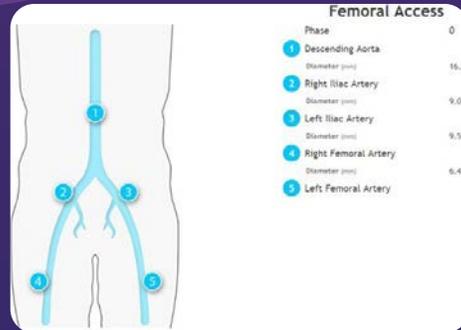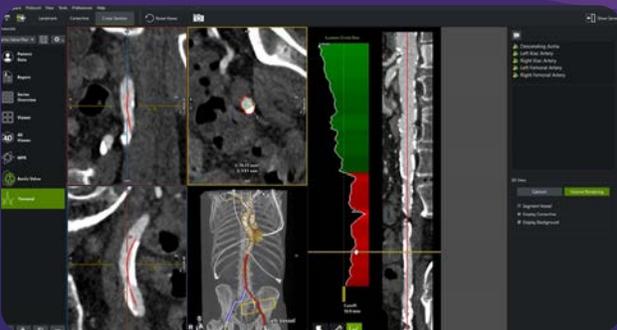Better understanding of anatomy to predict, plan and visualize aortic procedures.

AORTIC VALVE†

- Automated detection of aortic valve annulus cusp points
- Possibility to edit the cusp points manually
- Automated Aortic annulus contour detection, measurement of its area, perimeter, max and min diameters
- Automatic calculation of Ostia heights, ST Junction, Sinus of Valsalva, Aortic Annulus
- Worklist measurements, labeled with the tags provided, will automatically be entered into an infographic in the report module

- Extensive Aortic Valve infographics
- Aorta Fluoro page & automated C-arm perpendicularity position
- Leaflet calcium volume with automatic detection based on calcium threshold, calcium volume report per cusp in aorta and LVOT
- Virtual device visualization with different shapes available, including the possibility of importing vendor specific image files
- Apical access planning
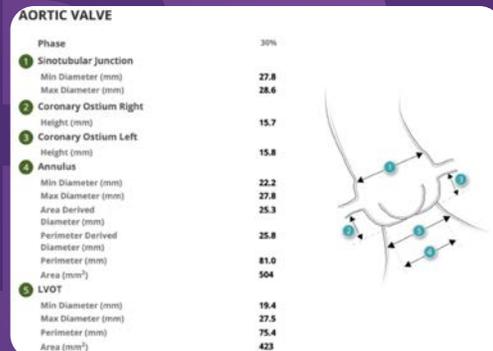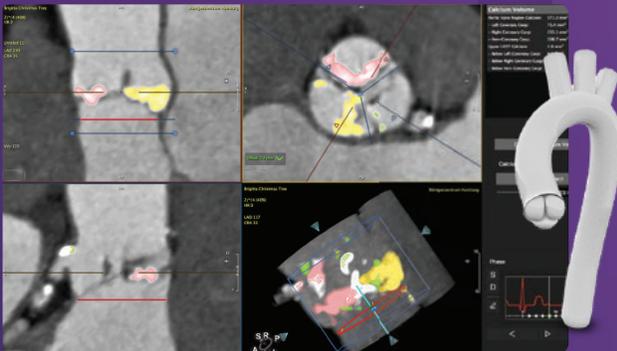
VASCULAR ACCESS

- Semi-automated femoral centerline segmentation and reporting schematic
- Smart control points

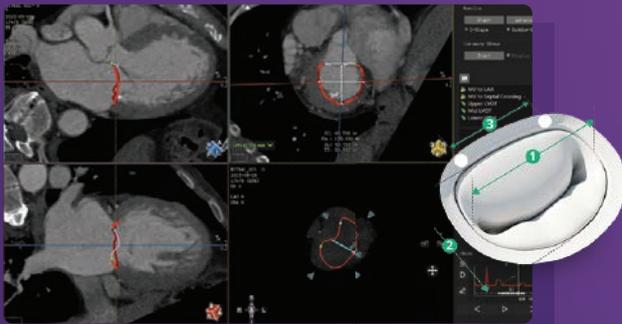- Centerline correction
- Centerline-based cross-sectional views

† Additional license required.

Interventional
Planning

CVi42®

Fast and efficient Structural Heart interventional planning.
Better understanding of anatomy to predict, plan and visualize mitral procedures.
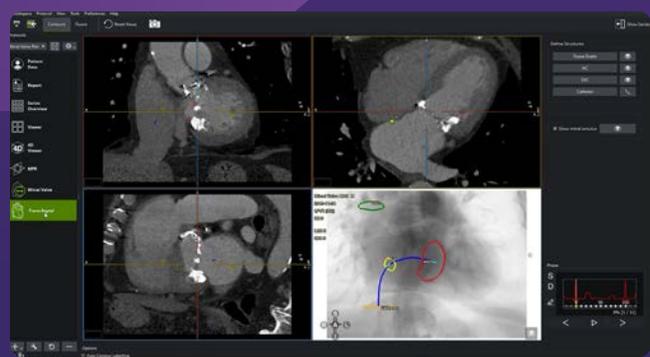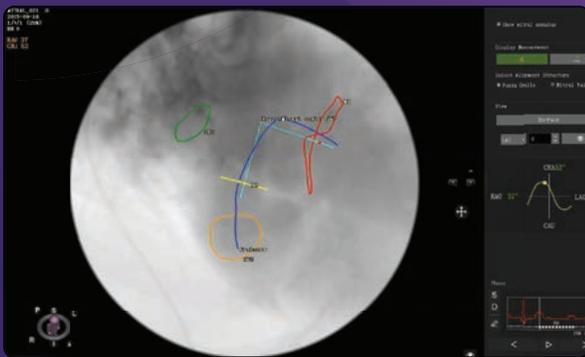
MITRAL VALVE†

○ Automated landmark detection for mitral valve center and LV apex ensures consistent reference points for accurate and reproducible cardiac measurements.

○ Automated mitral annulus contouring enables fast, precise assessment of mitral valve geometry to support functional evaluation and disease detection.

○ Mitral annular calcification assessment

○ Coronary Sinus definition and guide wire simulation

○ Automated detection of calcium based on calcium threshold, calcium volume reported per leaflet

○ Assessment of LVOT and virtual device visualization

○ Fluoroscopy page

○ Extensive mitral infographics

○ Apical access planning

TRANS SEPTAL

○ Trans-septal access planning with distance and angle measurements

○ Ability to define different structures such as fossa ovalis, superior and inferior vena cava

○ Visualize structures in fluoroscopic simulation

○ View access route from IVC to mitral valve



†Additional license required.

At the **Heart** of
IMAGING

circle CARDIOVASCULAR IMAGING

Interventional
Planning

WATCHMAN™ TruPlan™
CT IMAGING SOFTWARE

Comprehensive visualization and planning for interventions in the left atrial appendage†. Fast and intuitive techniques for the pre-procedural planning and post-procedural follow up.

LAA Assessment

- Automated LAA landing zone definition
- Multiphase selection of desired phase
- Size and location of landing zone
- 3D anatomical assessment (segmentation, sculpting)
- Endoluminal view to LAA and LA
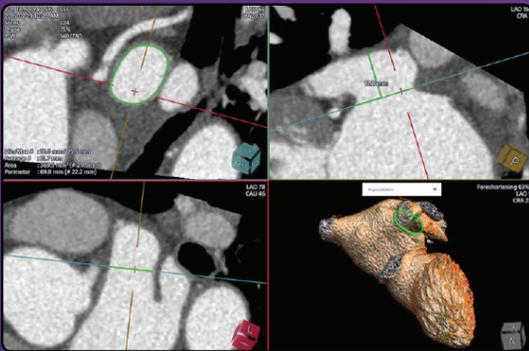
Fluoro

- Simple, intuitive definition of Fossa Ovalis, IVC, SVC and LUPV
- Fluoro simulation of LAA and structures
- Sizing tables for WATCHMAN™ devices
- Interactive overlay of WATCHMAN™ device and access sheaths
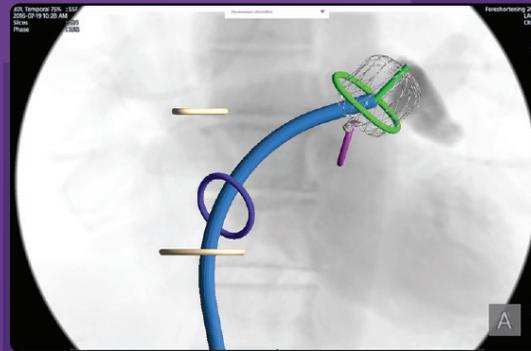
TEE

- Full functional TEE simulation
- Prepopulated TEE 0-45-90-135, bicaval and Ao short axis views
- TEE-views simulation simultaneously with fluoro and 3D
- Probe depth, probe rotation, left-right flex and anterior-posterior flex
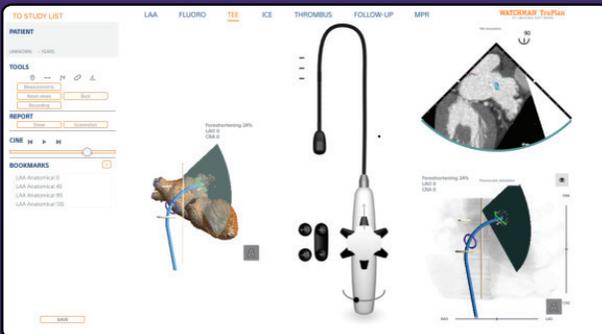
ICE

- Structures and measurements visible on the echo views
- ICE view simulation
- Rotation, moving and flexing of probe



†Additional license required.

At the **Heart** of
IMAGING

circle
CARDIOVASCULAR
IMAGING
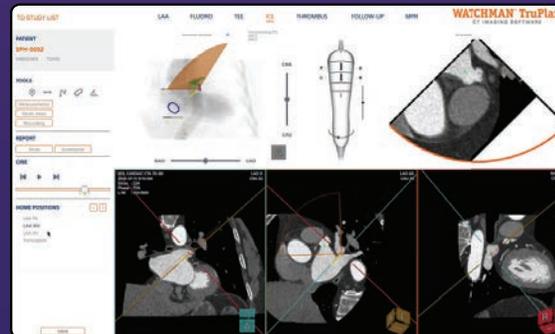
Interventional
Planning

AI-enabled Vascular CT† tools to streamline diagnostic evaluation, interventional planning, and post-procedural follow-up of aortic, carotid, and peripheral disease.

AORTA

- AAA, TAA, and dissection evaluation for EVAR, TEVAR, and F/BEVAR planning
- AI-powered segmentation of lumen, thrombus, calcium, endoleaks, and dissection flaps
- Automated measurements for vessel diameter, length, angle, and tortuosity
- Volumetric analysis of thrombus, calcium, and endoleak for evaluation and follow up
- Virtual graft simulation and auto-recommendations based on manufacturer's IFUs
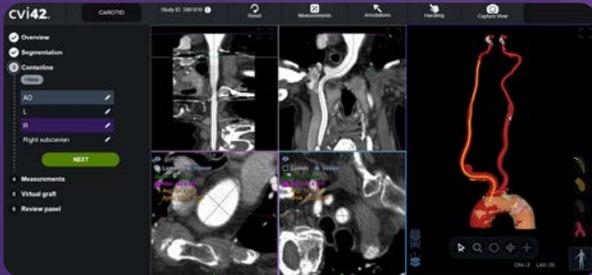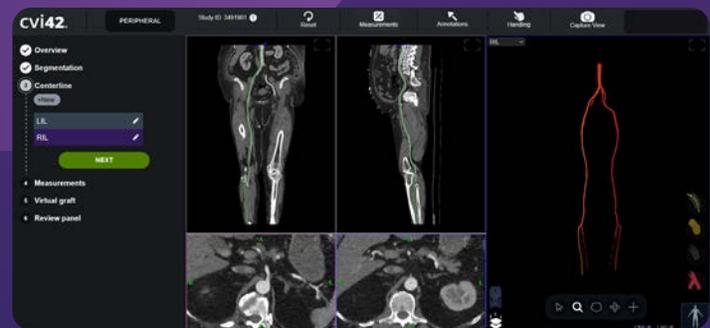

CAROTID

- AI-powered segmentation of lumen, calcium, and plaque with stenosis visualization
- Bilateral coverage (CCA, ICA, ECA) with side-by-side comparison
- Serial study tracking for disease progression and post-treatment follow up

PERIPHERAL

- AI-powered segmentation from iliac bifurcation to distal runoff
- Automated centerline extraction with cross-sectional analysis
- Bilateral comparison for left and righ extremeties
- Calcium quantification to assess interventional suitability
- Comprehensive measurements for diameter, length, and tortuosity

At the **Heart** of
IMAGING

circle
CARDIOVASCULAR
IMAGING

Automated non-invasive pre-procedural planning for the EP Lab
Utilize MR/CT imaging to quantify LV/LA fibrosis and LV wall thickness.

ADAS 3D LV[†,††]

○ Visualize the fibrosis (LGE-MRI) in 3D colored images

○ Quantify Core scar and Border Zone (BZ) volumes

○ Navigate 9 layers from endo to epicardium

○ Quantify LV wall thickness (CT)

○ Display corridor location and best approach to reach them (endocardium, epicardium, or combined)

○ Obtain AI-based initial segmentation of the left chamber anatomy

○ Assess surrounding anatomical structures, including coronary arteries, right chambers, and phrenic nerve

○ Analyze intra-myocardial and epicardial fat, among other structures

○ Compute isodistances maps to neighboring structures for safer procedures

ADAS 3D LA[†,††]

○ Visualize the distribution and quantify the amount of enhanced fibrosis

○ Compute LA wall thickness maps

○ Visualize and navigate around the LA in 3D

○ Display adjacent structures including the esophagus, aorta, etc.

○ Compute isodistances map between the LA and any neighboring structures

○ Analyze intra-myocardial and epicardial fat, among other structures
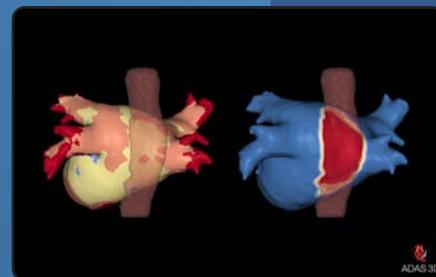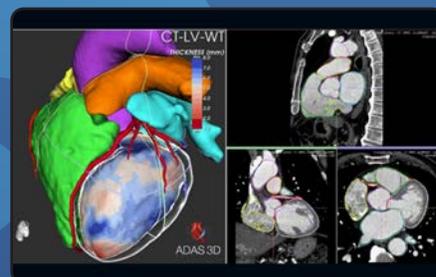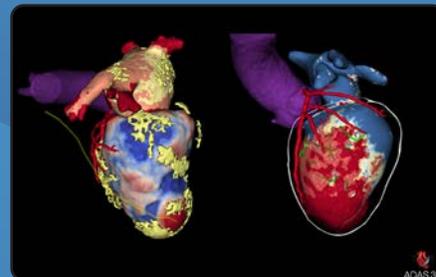
Pre-Procedure Planning
before any electroanatomical mapping

Peri-Procedure Use
with EAM systems

Local Image Processing

Acquire
DE MRI and/or CT images and import into ADAS 3D

Analyze
ADAS 3D images to plan to procedure

Identify
Areas that may be challenging to find only using EAM

[†] New license required.
[††] ADAS 3D is licensed and manufactured by Adas3D Medical and distributed by Circle CVI.

Continuous innovation for efficient, accurate and optimized workflows
based on user experience

www.circlecvi.com   **in** Circle Cardiovascular Imaging   **X** @circlecvi

circle CARDIOVASCULAR IMAGING