

CVi42[®]

v.5.16.2 (3381)

Release Notes

What's New in Version 5.16

Flow|2D

- New Aorta and new Pulmonary Artery (PA) contour tools: these contours can be drawn manually or automatically with the respective Ai tools
- If the preference Auto-loading and auto-contouring is enabled, cvi42 will auto-load and auto-contour an appropriate Aorta Phase Contrast (PC) series into the first tab (Flow Series 1 or Systemic Flow) and will auto-load and auto-contour an appropriate PA PC series into the second tab (Flow Series 2 or Pulmonary Flow). Upon loading the Aorta series, cvi42 will also auto-load a 3CV cine series into the Floating Viewer and will display a cross-reference line, showing the location of the auto-loaded Aorta series. The user shall review the automated results and correct them if necessary.
- Improved default and general static tissue mask detection. If a user loads a workspace from a previous version, the static tissue mask needs to be reviewed and re-applied.
- If cvi42 detects a GE PC series with inline offset correction, it will disable the cvi42 offset correction options, to avoid that users apply a correction on the already corrected data.

Flow|4D Flow

- Improved default and general static tissue mask detection. If a user loads a workspace from a previous version, the static tissue mask needs to be reviewed and re-applied.

Tissue|T2 Mapping

- If the preference *Auto-loading and auto-contouring* is enabled, cvi42 will auto-load an appropriate T2 raw series in the T2 Measurements tab, a quality control map into the R2/Error Map frame and it will also auto-load and auto-contour the respective inline T2 Map in the T2 Map tab. Upon loading the T2 Map, cvi42 will also auto-load a LAX series in the LAX Reference frame. The user shall review the automated results and correct them if necessary.

Tissue|T1 Mapping

- Ai-based detection of LV endocardial, epicardial contours and insertion points on the post-contrast (post-CA) maps
- If the preference *Auto-loading and auto-contouring* is enabled, cvi42 will auto-load and auto-contour the inline native and post-CA T1 maps in the T1 Map tab and it will also auto-load the respective native and post-CA T1 raw series and quality control maps in the T1 Calculations tab. If the inline T1 map is not found, the raw series will not be autoloading. cvi42 will also auto-load a LAX series in the LAX Reference frame. The user shall review the automated results and correct them if necessary.

Perfusion

- Support of new GE perfusion sequences, including dual-bolus perfusion sequences (released as part of GE MR30 software)
- Improved auto detection of Proton Density (PD) images. PD images number is displayed on the AIF graph and can be corrected by clicking on the gear tool on the top of the rest and stress viewports

Performance Improvements

- Wait time while the series list refreshes after a receiving a DICOM image, secondary capture, or workspace has been reduced significantly
- Login will be faster when cvi42|Report synchronization is required
- Time to process studies in the cvi42|CoreCT client and Server-Side Processing is improved significantly.
- Time to start cvi42|CoreCT from cvi42 has been reduced

Report

- The automatic bullet points have been removed from the findings sections
- Support of basic text formatting in the findings and summary sections (bold, italic, underline)
- Support of copy and paste text from Windows MS-Word and WordPad documents to the findings and summary sections (including basic formatting)
- Reduced spacing in the report to reduce the overall page count
- Advanced Report users are now cvi42 users and will have to create/edit cvi42 users with specific permissions

Resolved Issues

The following list contains resolved usability related issues, in addition to all other internal issues resolved during the product development process.

Number	Summary
CV-21115	CLONE - [Saving Workspace] Some of the series are not populated while Saving a dicom workspace

Known Issues

Number	Summary
CV-21266	4D Flow ventricle - valve tracking issue - GE 3.0T, DISCOVERY MR750w <i>Workaround: None</i>
CV-20883	cvi42 CORE CT - Calcium module: Autoloading on certain series might not be accurate <i>Workaround: Manually drag in Calcium scoring series</i>
CV-20871	cvi42 CORE CT: General Preferences missing "Done" option unless full screen in Mac <i>Workaround: Maximize the window to see buttons at the bottom of the screen.</i>
CV-20868	RLM folder may have permission issues upon upgrading from versions previous to 5.14 <i>Workaround: Reduce the restrictions on the C:\ProgramData\Reprise to allow full access to non-admin accounts.</i>
CV-20819	LDAP Usernames are not case-sensitive allowing multiple users to be created under Server Admin for the same LDAP credential <i>Workaround: None</i>
CV-20752	Modules with reference viewers: Reference line may carry over to Viewer module <i>Workaround: Change phase or slice in any other viewer in the Viewer module to remove the reference lines.</i>
CV-19932	cvi42 Report: Displaying results when data is pushed from Function BiPlanar module may be slightly delayed with multi monitors <i>Workaround: None</i>
CV-19672	cvi42 Report: When no advanced license is installed, webserver shows "No License" instead of "CVI License"

	<i>Workaround: None</i>
CV-18746	cvi42 Report: After migration, the old default header images are no longer present <i>Workaround: User can add the header back into the report after migration is finished.</i>
CV-14462	cvi42 Strain: Exporting STL file doesn't work in Mac OS <i>Workaround: No workaround.</i>
CV-11598	Flow 2D module: Auto Segmentation Flow sometimes results in poor contours <i>Workaround: Deselect and select the contour again, then press "Segment Flow Contour" to adjust the contour to the correct anatomy</i>
CV-10851	Module Femoral: Study specific femoral rendering issue <i>Workaround: Upgrade hardware/drive to meet the minimum system specification</i>
CV-9854	cvi42 Report: Text appears in front instead of behind buttons <i>Workaround: scroll past the header, the cvi42 Report header text is gone</i>
CV-9429	cvi42 Report: Too many images causes extreme lag <i>Workaround: Delete report and send again</i>
CV-6966	cvi42 Report: Importing Findings/Summary Text in Structured Findings also imports Summary Text <i>Workaround: Delete the unnecessary Summary Text from the Structured Findings section in the Admin pages</i>
CV-4852	Function SAX module: Semi-automatic RV contour detection in the current phase does not work if one of the slices of that phase already has one or more RV contour(s) <i>Workaround: Use Ai detection or delete existing RV contour(s) in the selected phase</i>
CV-4739	User with no Delete Study Data and Export Study Data permission shows error on ADAS 3D exit <i>Workaround: User must be assigned these permissions in order to work on ADAS 3D</i>
CV-3778	Loading old studies are slower the first time after a system upgrade <i>Workaround: None</i>
CV-3479	Flow 2D module: ROI label below the images frames in the Comparison tab do not update if the user loads a new series with same contour type and no label. On-screen report and graph update the contour label and respective values as expected <i>Workaround: Give a label to the ROI contour of the new series</i>
CV-3076	Function SAX module: Copying and pasting SAX reference points from one image to another is forwarding them to all the images. <i>Workaround: No workaround. Place a new reference point instead of pasting it</i>
CV-2536	cvi42 Quantitative Perfusion: Refresh lag on Rest and Stress viewers in module when multiple users are reading the same study simultaneously <i>Workaround: Avoid multiple users opening the same study in Quantitative Perfusion module at the same time</i>

CV-1467	Flow 2D: Contour detection with threshold mode is erroneously enabled when flow colour overlay is active <i>Workaround: Turn off flow colour overlay when defining the vessel contour to better see vessel borders</i>
CV-146	Function SAX: Reference lines in the reference viewer are not displayed after switching the viewer from other modules with multiple screens <i>Workaround: Displaying the cine on SAX or LAX will bring the reference lines back.</i>

External Libraries – Copyright and Licensing Requirements

This is a list of free and open-source software used in our products, including any modifications made by Circle Cardiovascular Imaging Inc., throughout the course of our development. To access the most up-to-date information on the open-source software we use, visit:

<https://www.circlecvi.com/open-source-software/>

AngularJS v1.8.2

Project Website
License

AngularJS Project
MIT license

Angular UI v0.14.3

Project Website
License

AngularUI Project
MIT license

Apache HTTP Server 2.4.54

Project Website
License
Download

HTTP Server Project
Apache License
Source Code and Binaries

Boost v1.66.0

Project Website
License
Download
Modifications

Boost Org
Boost Software License
Boost v1.66.0 CPP Source Code (.zip)

Canvg v1.5.0

Project Website
License

Canvg Project
MIT license

CPPNumLib v0.9

Project Website
License

Download
LGPL 3

DCMTK v3.6.7

Project Website
License

Download

DICOM Toolkit (DCMTK) Project
DCMTK License
DCMJP2K Commercial License
DCMTK v3.6.7 Source Code (.zip)

Eigen v3.3.7

Project Website
License
Download

Eigen Project
Mozilla Public License v2.0
Eigen v3.3.7 Source Code (.zip)

go-openapi/errors v0.20.1

Project Website
License

GitHub go-openapi/errors
Apache 2.0 License

FancyBox v1.3.4

Project Website
License

fancybox Project
Dual licensed under the MIT and GPL licenses

GLEW v1.9.0

Project Website
Licenses

The OpenGL Extension Wrangler (GLEW) Project
The OpenGL Extension Wrangler Library License
Mesa 3-D Graphics Library License
The Khronos Group Inc. License
GLEW v1.9.0 Source Code

Download

GLM v0.9.9.5

Project Website
Licenses
Download

OpenGL Mathematics (GLM) Project
The Happy Bunny and MIT Licenses
GLM v0.9.9.4 Source Code

GLM v0.8.4.4

Project Website
Licenses
Download

OpenGL Mathematics (GLM) Project
The Happy Bunny and MIT Licenses
GLM v0.8.4.4 Source Code

golang.org/x/net v0.0.0-20210928044308-7d9f5e0b762b

Project Website
License

Project Page
BSD 3 Clause

Go v1.18.2

Project Website
License

The Go Programming Language
Released under the 3-clause BSD license

github.com/google/go-cmp v0.5.6

Project Website
License

GitHub google/go-cmp
BSD-3-Clause License

github.com/jessevdk/go-flags v1.5.0

Project Website
License

GitHub jessevdk/go-flags
BSD-3-Clause License

github.com/jinzhu/gorm v1.9.16

Project Website
License

GitHub jinzhu/gorm
MIT license

GPL GhostScript v9.54.0

Project Website
License

GhostScript Project
GNU Public License v3

hoverIntent r6

Project Website
License
Download

hoverIntent r6 Project
MIT and GPL licenses
hoverIntent Source Code

HTML5 Shiv v3.6.2pre

Project Website
License
Download

HTML5 Shiv Project
Dual licensed under the MIT or GPL Version 2 licenses
HTML5 Shiv Source Code

ICU 56.1

Project Website
License
Download

Unicode Consortium
ICU License
Source Code and Binaries

ImageMagick v7.1.0-4

Project Website

ImageMagick Project

License	Apache License
Imdb 0.9.19 Project Website License Download	Symas LMDB OpenLDAP public License Source Code
jQuery v3.6.0 Project Website License	jQuery Project MIT License
jQuery bglframe v2.1.1 Project Website License	jQuery bgiFrame Project Dual licensed under the MIT and GPL licenses
jQuery chronoStrength Project Website License	jQuery chronoStrength Project Distributed under a Create Commons by-sa license
jQuery Cookie plugin Project Website License	jQuery Cookie plugin Project Dual licensed under the MIT and GPL licenses
jQuery JSON Plugin v2.3 Project Website License	jQuery JSON plugin Project MIT license
jQuery Migrate Plugin v3.3.2 Project Website License	jQuery Migrate Project License
jQuery ScrollTo Plugin v1.4.2 Project Website License	jQuery ScrollTo plugin Project Dual licensed under MIT and GPL licenses
jQuery ScrollToFixed Project Website License Copyright	ScrollToFixed Project MIT license Copyright and permission notice
jQuery UI v1.10.3 Project Website License	jQuery UI Project MIT License
jQuery Validation Plugin v1.11.1 Project Website License	jQuery Validation plugin Project MIT License
jscolor 1.4.2 Project Website License	jscolor Project Licensed under the GNU Lesser General Public License (LGPL)
JSPDF v1.5.3 Project Website License	Parall MIT license
jwt-go v3.2.0 Project Website License	GitHub dgrijalva/jwt-go Apache 2.0 License
kardianos/service v1.2.0 Project Website License	GitHub kardianos/service Zlib License

leonelquinteros/gotext v1.4.0

Project Website
License

GitHub leonelquinteros/gotext
MIT license

Imfit 3.2

Project Website
License
Download

Imfit Project
BEER WARE License
Source Code

go-openapi/loads v0.20.2

Project Website
License

GitHub go-openapi/loads
Apache 2.0 License

Logrus runtime formatter v0.0.0-20190729070250

Project Website
License

Github BanzaiCloud
MIT license

lumberjack.v2 v2.0.0

Project Website
License

GitHub natefinch/lumberjack
MIT license

Lz4 1.9.2

Project Website
License
Download

LZ4
Library files under BSD 2-Clause, Rest GPLv2
Source Code

msgpackc 2.1.5

Project Website
License
Download

MessagePack
Boost Software License, Version 1.0
Source Code

github.com/gorilla/mux v1.8.0

Project Website
License

GitHub gorilla/mux
BSD-3-Clause License

NLopt v2.6.2

Project Website
License

NLopt Project
LGPL and MIT license

odbc v0.0.0-20210605012845

Project Website
License

Github ODBC
BSD 3-Clause License

OpenCV v3.4.6

Project Website
License
Download

Open Source Computer Vision (OpenCV) Project
OpenCV (3-Clause BSD) License
OpenCV v3.4.6 Source Code

OpenLDAP v2.5.7

Project Website
License
Download

OpenLDAP Project
The OpenLDAP Public License
OpenLDAP 2.5.7 Source Code (.tgz)

OpenSSL v1.1.1l

Project Website
License
Download

OpenSSL Project
OpenSSL License
OpenSSL Source Code

PHP 7.4.32

Project Website
License
Download

PHP Project
PHP License
Source Code and Binaries

Protobuf v3.12.4

Project Website
License

Protocol Buffers Project
License

QJsonWebToken bf4de8

Project Website
License

QJsonWebToken Project
License

Qt v5.15.7

Project Website
License
Download

Qt Project
Qt Commercial Enterprise License
Source Code and Binaries

Qt Cryptographic Architecture (QCA) v2.1.0

Project Website
License
Modifications

QCA Project
GNU Lesser General Public License v2.1
Disable MD2 if not available in OpenSSL (patch)
Fix Lookup in Templates (patch)
Fix Outdated Link to Qt Documentation (patch)

pflag v1.0.5

Project Website
License

GitHub spf13/pflag
BSD-3-Clause License

qtiocompressor v2.3.3

Project Website
License

qtiocompressor Project
LGPL

QtService v2.8

Project Website
License
Download

Qt Project
BSD License
QtService v2.8 CPP Source Code (.zip)

QtSingleapplication v2.8

Project Website
License
Download

Qt Project
BSD License
QtSingleapplication v2.8 CPP Source Code (.zip)

ResumableJS v1.0.0

Project Website
License

ResumableJS Project
MIT license

RLM v15.0BL1/v14.2BL5 (ADAS only)

Project Website
License

Reprise License Manager
Proprietary

runtime v0.19.31

Project Website
License

GitHub go-openapi/runtime
Apache 2.0 License

go.uuid v1.2.0

Project Website
License

GitHub satori/go-uuid
MIT license

Select2 v4.0.3

Project Website
License

Select2 Project
MIT license

Sirupsen/logrus v1.8.1

Project Website
License

GitHub sirupsen/logrus
MIT license

Sortable v1.4.2

Project Website License	Sortable Project MIT license
spec v0.20.3 Project Website License	GitHub go-openapi/spec Apache 2.0 License
Sprintf v1.0.3 Project Website License	sprintf-js Project Released under the 3-clause BSD license
SQLite v3.38.1 Project Website License	SQLite Public Domain
StackWalker 1.2.0 Project Website License Download	StackWalker Project BSD License Source Code MIT license
github.com/go-openapi/strfmt v0.20.2 Project Website License	GitHub go-openapi/strfmt Apache 2.0 License
Superfish v1.4.8 Project Website License	Superfish Project Dual licensed under the MIT and GPL licenses
github.com/go-openapi/swag v0.19.15 Project Website License	GitHub go-openapi/swag Apache 2.0 License
Tensorflow 1.13.1 Project Website License	Tensorflow Project Apache 2.0 License
github.com/go-openapi/validate v0.20.2 Project Website License	GitHub go-openapi/validate Apache 2.0 License
github.com/gorilla/websocket v1.4.2 Project Website License	GitHub gorilla/websocket BSD-2-Clause License
XZ Utils 5.2.5 Project Website License	XZ Utils Project License
zap v1.19.1 Project Website License	GitHub uber-go/zap MIT license
zlib v1.2.5 Project Website License Download	zlib project zlib License Source Code
zstd 1.4.3 Project Website License Download	zstd BSD License OpenLDAP 2.4.35 Source Code (.tgz)

Support

For further information on installing/exchanging the dynamic libraries please contact Circle Cardiovascular Imaging support.

Phone: +1 (403) 338-1870

E-mail: support@circlecvi.com

Circle Cardiovascular Imaging Inc.

1100, 800 5th Avenue SW

Calgary, AB, Canada T2P 3T6

Phone: +1 (587) 747 4692

Website: circlecvi.com