



Cedars-Sinai Medical Center
Department of Medicine
Artificial Intelligence in Medicine Program



Cedars-Sinai Medical Center Cardiac Suite

Version 2013.2.0.20140

Release Notes

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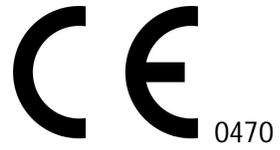
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Introduction

This document is a general overview of the Cedars-Sinai Medical Center (CSMC) Cardiac Suite software, which includes product requirements, usage notes, user-visible changes and installation/uninstallation instructions.

CSMC Cardiac Suite numbers releases YYYY.ZZ.0.CCCCC, e.g. 2013.1.0.11427. YYYY refers to the code branch (typically the release year but not always), ZZ is the minor build number (an incremental number for each official release) and CCCCC is the change level. Each bugfix in these release notes is marked by its change level number. The listed build includes 1) all changes of all previous releases and 2) all changes of the current release up to the change level number.

CSMC Cardiac Suite is built on a foundation of quantitative algorithms developed at Cedars-Sinai Medical Center; it provides robust image displays including 3D surfaces, 2D polar maps, short axis and transverse images.

CSMC Cardiac Suite provides a user-friendly and intuitive environment within which the operator—technologist or physician—can efficiently process and review all cardiac SPECT and PET studies.

CSMC Cardiac Suite Product Description

CSMC Cardiac Suite is a suite of applications for the processing and review of Cardiac SPECT and PET datasets. CSMC Cardiac Suite is composed of the following applications: Quantitative Gated and Perfusion SPECT (QGS+QPS), Quantitative Blood Pool SPECT (QBS), CSImport (for study selection and management), QARG (for reporting purposes), AutoRecon and Motion Correction (MOCO) for reconstruction and a Remote Viewer component, combined with central (cloud) storage. Note that these release notes are meant to accompany the desktop software (CSMC Cardiac Suite v2013), the central storage and remote viewer components will have separate release notes.

Installation and Integration

Please refer to the [User Manual](#) for detailed installation instructions.

For integration options, including command line parameters, application control, licensing options, and acceptable data requirements please refer to the [Vendor Integration Guide](#).

Product Requirements

The following minimum software and hardware requirements should be satisfied before installing CSMC Cardiac Suite.

Function	Specification
Operating System	<p>Windows 8 (32 & 64 bit): 8, 8 Pro, 8 Enterprise</p> <p>Windows 7 (32 & 64 bit): Home Premium, Professional, enterprise and Ultimate.</p> <p>Windows Server 2008 (including R2) (32 & 64 bit): Standard Edition and Enterprise Edition.</p> <p>Windows Server 2008 (32 & 64 bit): Standard Edition and Enterprise Edition.</p> <p>Windows Server 2012 (including R2) (32 & 64 bit): Foundation, Essentials and Standard</p> <p>Windows Vista (32 & 64 bit): Home Premium, Business, Enterprise and Ultimate.</p> <p>Windows Server 2003: Standard Edition and Enterprise Edition.</p> <p>Windows XP: Home, Professional, Professional 64-bit.</p> <p>Mac OS X: 10.6 (Snow Leopard) and 10.7 (Lion).</p>
	<p>Remote Viewer:</p> <p>iPad: iPad 2, iPad 3rd Generation, iPad 4th generation, iPad mini</p>
RAM (Random Access Memory)	1 GB (2 GB for Fusion/CT)
Available Disk Space	150MB for installation, additional space required for image data storage.
Screen Resolution	1024x768 with 16-bit color. Wide-screen displays that meet the minimum requirements are supported.
Network Port	Ethernet network adapter (only required for workstation networking scenarios)
Miscellaneous	<p>Mouse (or other pointer devices such as trackpad, trackball, etc)</p> <p>Keyboard</p>

CSMC Cardiac Suite V.2013 (Current Version) Known Issues

Known Issues: All Platforms

Ticket	Description	Workaround
120391	Saving in PPT mode doesn't work with Dynamic PET and Auto Registration	This is a known limitation; SPECT/CTA files are very large and (by design) not included as a function of powerpoint.
130102	AQ: PET slice collation errors	Display error only. Only applies to very rare datasets
131515	If some DICOM dates are missing, CSI will still apply the DICOM "no date" (7000-01-01), which results in date differences of ~4992 years.	None.
168137	ARG: If you create a custom field and then disable it, it continues to show up in the QARG UI.	Rename field to "Do Not Use". Alternately, these can be manually removed from the database by a CSMC support rep.
239838	It appears that when editing date/time for series in CSI 2013, it does not get propagated into QXS or ARG. We should make a decision on how to handle this - either all apps should reflect the updated date/time or we should make the date/time field uneditable in CSI. Thanks.	Manually edit date/time in ARG. Note that ARG uses the dates contained in the DICOM file. This issue is only applicable if the date/time fields were manually modified from within CSIImport
240505	CSI - the DICOM store scp configuration dialog, the dialog should prompt that an incorrect value has been entered when an incorrect port value lower than the acceptable range is entered.	None. Application behaves properly if a valid port is used
261963	AutoRecon's about box displays '00000' for version number	To view the version number, browse to the executable (arecon.exe), right click, select properties, details tab and observe the File Version
290538	QGS+QPS, QBS: 3D Views render some background text in foreground	Ignore error, or turn off OpenGL graphics view. Defaults -> Graphics -> OpenGL

332488	Intermittent crashes observed when clicking 'test' when configuring DICOM store SCP in CSI	None
361540	MoCo: startup options do not work for X-Axis, Y-Axis and Mask	None
376518	ARG: if you have a SQL server database (i.e., ARG server setup), within the DICOM configuration dialog you can select which database you want the studies to be stored in. However, this seems to be broken. When I set the DICOM Networking dialog to save the studies to the ARG database, they still go to the local sqlite database.	Do not configure two ARG databases for server configurations, only configure a server DB.
418838	CSI- Managing Data backup not currently present built in within CSI.	Manual database backup must be performed.
457199	ARG PDF reports not handling non-Latin characters	ARG does not support other languages. Only potential risk is an English customer entering non-latin characters for the patient name. Note that the application handles the non-latin characters, but the final report will show some error characters (eg. blank box) in place of the non-ascii characters.
530259	AutoRecon print dialog contains tabs which are not applicable; Film, Direct Film & Report	none - tabs have no effect
551689	AutoRecon: Automatch String matching does not seem to work	None
603410	ARG: E-mailing encrypted reports with p7b certificate does not work	Use a .cer format certificate instead
616644	When trying to connect to a newer version of a database, you are prompted that the database is OLDER.	None. The application is doing the correct thing, by preventing upgrading/downgrading, but the error message is reversed
694028	QPS+QGS - Certain tabs under Defaults like -	None. English words are displayed if non-

	Data and Processing under the Defaults menu do not seem to have translated in the localised language.	localized phrase is not available.
708642	In CSIImport, when moving a virtual folder, you cannot move to a top-level folder; it must be moved as a subfolder	You can create new top-level folders, then re-tag the data in that folder
760946	Anonymize mode does not anonymize patient info within the reporting panel	Turn reporting off if anonymized mode is required Note: ARG might have previous studies, reports or whatnot that are not anonymized, so it wouldn't be sufficient to just obfuscate the main pannel, and it would be misleading. For people to do talks using arg, they should anonymize the data and run ARG on that.
766684	CSI Wizard doesn't work with screen resolutions below 800 pixels.	Attach an external monitor with larger resolution in order to run the initial wizard from within CSI/ARG.
794497	QGS+QPS: Default startup page setting does not work for Raw	None
801116	CSI Cloud configuration does not sync with QXS	None. CSI cloud connectivity is not supported in 2013.0
862025	QBS - Crashes intermittently when trying to open a new QBS data after performing an uninstall of the pyramid.	None
875044	When importing defaults, if the selected limits is not available then the user is not prompted	None
886179	ARG: When you use a walking protocol with Adenosine or Regadenoson, the 12-lead ECG monitoring happens while the patient is walking and upright. Currently the the study description on the ECG page of the report incorrectly says "...ECG was recorded in the supine position with continuous ECG monitoring...". It should say upright position	Manually edit the sentence text and change protocol description.

	if a pharm/walk protocol is being used.	
908746	QBS- Saving results to the aimcloud option displays an error [8] when performed using the test user logins.	If you're testing cloud upload in Windows XP, make sure you update the Root Certificates. Otherwise QXS may have trouble making SSL connections to the cloud server (particularly devcloud.csaim.com). You may run Windows Update and update everything, or just update the Root Certificates by using the following link: http://www.microsoft.com/en-us/download/details.aspx?id=35945
914803	CSI - New sites do not display until restarting CSI	None; restart CSI
job001162	Some reconstructed data shows up as 'flipped' on the Z axis. This occurs (on only some datasets) if the type of the data is incorrectly labelled - Short Axis vs Transverse	Datasets need to be manually edited to correctly identify the dataset type.
job001453	QPS+QGS does not correctly display data with dynamic range < 1 (e.g. CT attenuation maps)	None.
job001473	Running qarg and logging out can cause a crash	None

Known Issues: Windows Only

Ticket	Description	Workaround
129990	After upgrading from Suite2012 or earlier, ideally if DICOM Store Service (imhotep) used to be running, it should continue to do so after the database has been initialized. This means starting up the new DICOM Store Service (khdaemon) after database initialization.	Manually start the DICOM Service

Known Issues: MAC Only

Ticket	Description	Workaround
209554	Vertical Scroll bars absent in many windows until maximised	None
289012	QARG - (Global Preferences) Under Segment Mode the work Segment is cutoff in the drop down list.	None. Only cosmetic issue
462322	QARG - (Database Export) Perfusion Scan Findings button is overlapping the checkbox	None. Only cosmetic issue
862318	CSI/QXS - Language settings do not default to the default OS language on mac	None. Users may manually set the default language in the defaults

Known Issues Closed in 2013.2

Ticket	Description	Closed As
119583	Site address isn't available as a field in Site Manager	Fixed in CL 19909
138461	CSI- About box for CSI and QXS in a localized language has a lot of missing icons and some additional texts, plz see screenshots.	Fixed in CL 19919
143963	AutoRecon is not i18n compilant. Translations not supported in AutoRecon	Fixed in CL 19794
240618	QARG - report editor menu option is available (should be disabled on MAC)	Fixed
276319	Secondary windows opened with the multiple window options do not remember their previous position.	Closed as wish list feature
497314	When saving new files from standalone MoCo/Arecon, CSI creates new patient, instead of adding to current patient	Closed as duplicate:
526949	QPS+QGS loads all result files, when multiple are passed. Expected behavior is to only load the latest.	Closed as not reproducible
549175	Screen captures saved by AutoRecon (via 'Print' button) are not getting imported by CSImport	Fixed in CL 19798
687487	QARG - (Font Size) Increasing Font size then clicking on a new window will make some of the fonts smaller	Closed as not reproducible
701763	After a tag was deleted in pyramid's user folder tree, tagging new data with the same tag doesn't seem to work.	Fixed in CL 19945

CSMC Cardiac Suite Released Features-V. 2013

2013.2 (20140)

Major new functionality or change incorporated in V.2013.1		
Build	Application(s) affected	Feature description
20045	ARG	<u>E-mail enhancements</u> Adds support for sending encrypted e-mail through ARG

Minor new functionality or change incorporated in V.2013.2		
Build	Application affected	Feature Description
20120	CSI	<u>Added progress bar to purge operation</u> Added basic progress dialog to purge operation
20118	CSI	<u>Allow reassignment of site</u> Allow patient's belonging to a site to be reassigned to a different site (will display a hefty warning)
20116	CSI	<u>Added Export button to main toolbar</u> Adds button to main toolbar; previously it was only accessible from the file/export menu.
20100	ARG	<u>Renames ECG leads on ARG</u> ARG no longer hard-codes V5 and AVF as the first and second lead. Users may now manually select a different lead title
20077	ARG	<u>Adds ability to 'Lock' referring physician entries</u> Referring physician information (name, contact info), can now be optionally locked for editing. Administrators may lock/unlock.
20029	ARG	<u>Camera and Testtype manager should allow re-enabling</u> Generic Test Type Manager and Camera Manager now allow re enabling of disabled test types
19977	QGS+QPS, QBS, CSI, AutoRecon	<u>Added Korean Language</u> Korean translation added
19954	QGS+QPS, QBS	<u>Warn when invalid data detected</u> added warning message when loading results from another application (QBS vs. QGS/QPS)
19945	CSI	<u>Add ability to delete data tags</u> allow user to delete / undelete tags
19942	CSI	<u>Improved series description importing from GE Ventri/Xeleris</u> When you import studies in CSI, use the more useful the descriptions. e.g. Rest_SA instead of CARDIAC SPECT

19935	QGS+QPS, QBS	<u>Preserve DICOM acquisition date/time for results and secondary captures</u> When secondary files (results, screen captures, etc.. are created by QXS, they should retain the date/time of the study that they were created from. Previously they were generated with the current time/date of the workstation.
19919	CSI	<u>Added Language selection to CSI</u> In preferences, users may select the language within CSI; previously language changes needed to be made within QGS+QPS; also adds missing icons in about box
19909	QARG	<u>Add Site Address/Phone number</u> Collect and report the site's address and phone number (ICANL requirement)
19897	CSI	<u>User folder enhancements</u> Allow the user to move/copy a user folder to the root level; allow staff phys/admin to rename/move/delete a public folder except for "Public"
19893	CSI	<u>Additional Preferences</u> added preferences for study auto-selection, show attachment button, low disk space warning
19883	CSI	<u>Save current state</u> patient/study/series views now save and load their sort column and order
19862	QARG	<u>Additional ECG/History values available in admin report</u> Added Blood Pressure, Heart Rate, Exercise Protocol (Bruce, etc.), Reason for stress termination, discomfort location to admin reports
19794	AutoRecon	<u>Translation Support</u> Add i18n translation support for AutoRecon/MoCo (same languages as QGS+QPS)
19769	QGS+QPS	<u>New manual dataset manipulation options in dataset editor</u> Added option to manually change Transverse and Short Axis. Also added option to flip on Z axis

Bug fixes in V.2013.2		
Build	Application affected	Feature Description
20135	QGS+QPS (QPET)	<u>Fix issue with license dialog popping up in PET only mode</u> If QPET was licensed, but not QGS+QPS users would receive a license error
20128	QGS+QPS	<u>Disable Group Processing</u> Move group processing algorithm to next major release

20123	QGS+QPS	<u>Enable Recon page based on license</u> If a license exists for AutoRecon, enable the Recon page in QGS+QPS
20106	CSI	<u>Fixes issue copying from a local database to a server database</u> In some cases users were not able to copy data from a local database to a server database
20104	ARG	<u>Fixes error reporting CCS details</u> Checking "do not report" for CCS details would still report if aorta diameter was set.
20089	ARG	<u>Error Confirmation Dialog enabling 'OK' once errors were clicked</u> Error and Warning confirmation dialog would not enable 'Ok' after acknowledging errors in some cases
20056	QGS+QPS	<u>Fixes crash on Phase Page</u> Fixes crash when resetting data on phase page
19978	CSI	<u>Fixes CSI DICOM data editing for non-Unicode characters</u> CSI 2013 must be able to handle non-Unicode Chinese/Japanese/Korean character sets used in DICOM files
19949	CSI	<u>Fix multi-representation DICOM person name editing</u> CSI 2013 provides a dialog for editing the full, multi-representation DICOM person name. However, it seems to misplace the representations. What's in the 3rd (phonetic) form ends up as the 2nd (ideographic) form in the database, and vice versa.
19929	ARG	<u>Fixes issue when invalid numbers are entered</u> If a floating point number was manually entered for an integer value (e.g. EF), then it would get saved as 0. Now it will correctly round.
19924	ARG	<u>Handle 4 hour scores correctly</u> There is code which picks which scores to use for "stress", and which to use for "rest" in determining reversibility of defects. It SHOULD be using the sequence Stress Rest 4H Late, and using the left most that is present for "stress" and right most as rest (i.e. if we have all, use stress and late, if we have str,rst,4h then use stress and 4h. 4h was not part of the list however, so it was not being considered in the result.
19916	CSI	<u>Fixed duplicate user folder</u> When reparenting a private folder, duplicate folders were incorrectly being created
19837	QGS+QPS	<u>Add name to window title</u> Adds study (patient) name to window title when application minimized
19798	AutoRecon	<u>Fix Printing</u> Fix print functionality when launched through CSIimport
19792	QGS+QPS	<u>Remove 'Save-to-Cloud' Development feature</u> Removing debugging feature to save cloud file to local disk

19767	QARG	<u>Crash when logging out</u> Fixes crash in QARG when logging out (instead of exiting).
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Vendor Specific Changes in V.2013.2 (only available in vendor's version)		
Build	Vendor	Feature Description
20131	Spectrum Dynamics	If processing PET as SPECT, print "D-SPECT" in infobox
20120	ThinkSys	Enable Save button

2013.1 (19762)

Major new functionality or change incorporated in V.2013.1		
Build	Application(s) affected	Feature description
19708	INSTALLER	<u>"Push to cloud" DICOM proxy</u> * Runs a DICOM service, which will push CSMC (QPS, QGS and/or AutoQUANT) result files to cloud * Result files may come from any DICOM source * Separate installer
19693	CSIMPORT	<u>CSImport Cloud Support</u> * Allows pushing of studies (processed or unprocessed) to cloud server * Allows retrieval of studies from cloud (query/retrieve)

Minor new functionality or change incorporated in V.2013.1		
Build	Application affected	Feature Description
19716	CSIMPORT, QGS+QPS	<u>Display of cloud quotas/usage</u> Show study count/quota in cloud upload dialogs
19672	QGS+QPS, QBS	<u>Result file labels</u> If data is from results file, show results file series ID in infobox Results field
19671	QGS+QPS	<u>Result file merging</u> Load QGS and QPS results files simultaneously if no combined mode results file present
19648	QGS+QPS	<u>Better selection of primary dataset for serial studies</u> For primary dataset selection, give precedence to most recent study
19613	AutoRecon	<u>Add Print / Secondary captures</u> Implement Print button
19609	QGS+QPS	<u>Enable Lung:Heart ratio</u> Display lung:heart ratio instead of lung:heart counts
19589	ARG	<u>Report elapsed resting time</u> Report elapsed time between rest injection and rest imaging (like we can for stress gated) - requires editing the default template
19578	ARG	<u>Ammonia isotope added</u>
19564	ALL	<u>Minor version number added to display</u> Add minor version number to windows meta data for build (e.g. 2013.1)

19548	ARG	<u>Additional ECG entry/reporting options</u> ECG page - clinical response discomfort should allow "pre-stress" and ecg detail should mention discomfort timing
19534	QGS+QPS	<u>Add Tetrofosmin databases</u> 8 total - Rest/Stress, Male/Female, AC/non-AC
19528	QGS+QPS	<u>Updated PET Rubidium Limits</u> New PET Rubidium PFQ limits.
19489	ARG	<u>Auto-Login</u> Auto-login to ARG when launched from pyramid
19470	ARG	<u>User Manager Enhancements</u> User Manager now allows viewing disabled users, re-enable users and check names on edit
19423	CSIMPORT	<u>Integrated Help for Exporting</u> Added help dialog to file export dialog

Bug fixes in V.2013.1		
Build	Application affected	Feature Description
19732	ARG	<u>Immediate sending of e-mails after signed report</u> Resolves issue with pending e-mails assigned to "on-hold" status instead of "queued"
19701	QGS+QPS w/ ARG	<u>Crash on "New"</u> Fixes crash when "new" button is pressed from ARG panel in QGS+QPS
19700	AutoRecon	<u>Correctly identify supported data</u> Disable reconstruction for unsupported data (e.g. spectrum dynamics)
19678	QGS+QPS	<u>Multiple matches with Rubidium databases</u> Fix for Rubidium PET database multiple match errors when upgrading from previous versions to 2013.
19615	AutoRecon	<u>Fix 'Copy Page' button</u> Fix coping when run with two studies (appropriate settings should be copied over)
19610	ARG	<u>Require accession number when sites enable it</u> Accession number should be completely mandatory for sites that require accession number.
19604	ARG	<u>Password creation during Welcome Wizard</u> Fixes issue where the page that allows creating the first signing physician would not allow setting password
19600	QGS+QPS	<u>Permit loading of some smartzoom data</u> Allow loading of relevant smartzoom data

19595	ARG	<u>Previewing on report editor</u> Report editor - now allows previewing reports on current study
19583	QGS+QPS w/ ARG	<u>Revert unsaved data</u> When running QGS+QPS with ARG changing pages after changing patient info without saving reverts any ARG changes.
19580	ARG	<u>Fix error with several canned sentences</u> Sentences which contained the '%' character were being corrupted when running with SQLite
19563	QGS+QPS	<u>Allow combined mode</u> Allow all vendors to run in combined (QGS+QPS) mode
19536	QGS+QPS, QBS	<u>Fixed error saving JPEGs (from Print button)</u> Resolve error message: "Error saving print capture file, the print capture file could not be saved."
19514	AutoRecon	<u>Correctly handle 360 degree cardiac data</u> Fix bug in iterative reconstruction where the range of referenced projections spans the end of the projection array (i.e. some cardiac > 180)
19513	AutoRecon	<u>Fix crash when loading with no data</u> Fix out of bounds condition if no input data
19474	ARG	<u>Fix for exercise duration consistency check</u> Error message for exercise duration and stress isotope timing was not considering seconds.
19469	ARG	<u>Fix display name when minimized</u> When application is minimized the icon title is patient ID
19381	QGS+QPS, QBS	<u>Fix memory leak</u> Fixes minor memory leak during image rendering
19367	QGS+QPS	<u>Fix issue with ThalliumThallium limits</u> ThalliumThallium limits were incorrectly referring to CVIT databases instead of the factory databases

Vendor Specific Changes in V.2013.1 (only available in vendor's version)		
Build	Vendor	Feature Description
19717	Siemens	Resolves charm NMG_00080694 : Results not being pushed to Syngo.via during auto process
19566	Digirad	Install: Add CSImport and Concurrent Server to Digirad build
19486	Siemens	Updated Siemens NmClient Libraries
19370	GE	Add new GE530c normals databases and limits

2103.0

The Cedars-Sinai Cardiac Suite v2013 is a major update to the 2012 version. Version 2013 brings a new central (cloud) storage option, and a remote (iPad) viewer. CSImport and ARG underwent the most dramatic changes with the merging of databases. This allows both CSImport and ARG to offer a single computer simple configuration, and a shared multi-system option (CSMC Server).

Changes Affecting multiple applications 2013.0 (19362)

Major new functionality or change incorporated in V.2013	
Application affected	Feature Description
QGS+QPS, QBS	<u>Multi-window / monitor support</u> New "Window" button opens additional application window of current patient Ability to open 'N' number of windows for application
QGS+QPS, ARG	<u>Simplified SSS calculation</u> Summed Scoring calculations options; now either 'classic' or 'simplified' - simplified calculations are the sum of all segments - classic mode incorporates the scoring rules from previous versions
QGS+QPS, QBS	<u>Simplified defaults editor</u> New "Transcribe" button in defaults editor copies current application state to defaults
QGS+QPS, QBS, CSImport	<u>New Languages:</u> The following new languages are now supported: Adds to (English, French, Italian, German, Spanish, Chinese, Japanese) DANISH DUTCH NORWEGIAN SWEDISH RUSSIAN FINNISH PORTUGUESE CZECH HUNGARIAN POLISH TURKISH KOREAN

Minor new functionality or change incorporated in V.2013	
Application affected	Feature Description

OGS+QPS, OBS	<u>Improved detection when running in non-supported/validated modes</u> Improved detection when application is running in remote sessions
OGS+QPS, OBS, AutoRecon, MoCo, CSImport	<u>DICOM Reading: support for all date types</u> Support for full ISO date handling

CSImport 2013.0 (19362)

CSImport underwent a major redesign. This included rewriting the backend to support a SQL database.

Major new functionality or change incorporated in V.2013 for CSImport
Feature Description
<u>Redesigned interface</u> * All images inside singular global databases * Central search * "Tag" datasets to create virtual folders (e.g. 'CaseStudies')
<u>Database backend</u> * Much faster queries for patients/studies * Automatic matching of previous studies * Support for SQLite (standalone), or SQL Server (server) configurations
<u>Multi-User / Login</u> * Login to CSImport, unified user list with ARG * Updated user and site manager

Minor new functionality or change incorporated in V.2013 for CSImport
Feature Description
<u>Stability improvements to DICOM Store</u>
<u>Enhanced dataset editing capabilities</u> Ability to edit dynamic SPECT/PET frame duration
<u>Flexible application launching</u> Ability to launch 3rdParty applications
<u>Reconcile Studies</u> Powerful reconciliation tool to merge
<u>Undelete files</u> "Trash can" approach to file management; undelete available
<u>User Activity Logs</u> Detailed logging of user's activity (opened studies, login info, etc.)

ARG/QARG 2013.0 (19362)

Major new functionality or change incorporated in V.2013 for ARG
Feature Description
<u>New Reports Available:</u> <ul style="list-style-type: none">* Blood Pool reporting (fully integrated with QBS)* New CT report* New Pyrophosphate report* "Generic" report, add a PDF from another system
<u>Administrative Reports</u> Summary reports for usage, type of tests and reading physicians
<u>Multi-Window Interface</u> Major change to interface; now the patient selection is the "main window". Multiple studies may be opened and multiple reports may be viewed at the same time.
<u>Custom Fields</u> Ability to add user defined fields, as numeric, text or enumeration (list) Define the section, and they will automatically appear in report
<u>Custom Attachments</u> Append PDFs generated from other systems to ARG report (dictation page).
<u>Workstation Mode</u> Full support for SQLite database (SQL Server still supported in 'Server' configuration)
<u>Appropriate Use Criteria (AUC)</u> Select the appropriate use, using ACC's recommended flowchart

Minor new functionality or change incorporated in V.2013 for ARG
Feature Description
<u>History of PTCA</u> PTCA now includes Left Main (LM) as one of the choices.
<u>Caffeine History</u> Caffeine History is now collectable for all studies (and required for stress studies). It is in the "History" section under "Under influence", and you must set the value to 'do not know', '0-4 hours', etc. and optionally enter a description of the caffeine (i.e. "cup of decaf" or "grande starbucks regular"). NEITHER of these values appears in the report.
<u>New error messages</u> <ul style="list-style-type: none">- For nuclear studies, protocol, modality and stress-type (for non rest-only studies) must be set (i.e. not "---").- PET studies must now include a PET isotope (i.e. rubidium, FDG, F18) or it is an error.- SPECT studies must NOT include a pet isotope (i.e. may NOT include rubidium, FDG, F18) or it is an error.

<p><u>Coronary Calcium Scoring added to SPECT/PET report</u> Automatic Inclusion of CT attenuation correction dose for Myocardial Perfusion studies, and CCS dose in report</p>
<p><u>ECG Reporting redesign / simplified</u> The ability to report leads/territories is now much more flexible than the previous method, but the overall flow should be very familiar to those that have been using it previously.</p>
<p><u>Accession Number</u> New field accession number, customizable by site. Site editor has "Require Accession Number" checkbox – which will tell ARG that if there is no accession # for a study from that site, it is an error.</p>
<p><u>Simultaneous Editing</u> Much better protection for multiple users editing the same study. If signing a study and another user has made changes to it, a dialog will be displayed showing their changes vs. your changes.</p>
<p><u>Treadmill Protocol Manager</u> The treadmill protocols are also now user modifiable (can add/disable/change) via the Admin Treadmill Protocol Manager</p>
<p><u>Unified Error Messages</u> The error list during "save" is now consistent with the error list in extended (it used to ignore history/ECG errors).</p>
<p><u>Increased exercise duration time</u> Exercise duration now can be entered up to 24:55 instead of 18:55</p>
<p><u>Clearer ARG Dialogs</u> When running in QGS+QPS, ARG's "Extended" panel now includes patient demographic information at the top to avoid any confusion when multiple studies are open</p>
<p><u>Hemodynamic details</u> Enter heart rate/ blood pressure for each minute of ECG Treadmill protocols now pre-populate speed/grade/METS</p>
<p><u>Re-Enable previously disabled referring physicians</u> Enhancement: Referring physician editor now allows re-enabling disabled referring physicians, and has an improved display of disabled physicians.</p>
<p><u>Distribution Status Monitor</u> QARG main study selection display now has a Distribution Status monitor at the bottom. It will indicate how many reports are in the queue to send out, how many are incomplete and need attention, and a bright red message if the distribution server appears to be hung.</p>
<p><u>Smarter sequence identification</u> ARG - Perfusion sequence should take times into account</p>
<p><u>Multi-Database QARG</u> Ability to store multiple (ARG Server) databases, and select during login</p>

<p>Bug fixes incorporated in V.2013 for ARG</p>
<p>Feature Description</p>

<p><u>Standard Circumflex abbreviation</u> Corrected the circumflex abbreviation to be "LCX" instead of "CIRX"</p>
<p><u>ECG Error Message correction</u> ECG error message incorrect - "...ecg response must be nonischemic" when there is st elevation.</p>
<p><u>Correctly handle non-entered visual scores</u> * Myocardial Perfusion Report – studies with "-" for all scores will now correctly show a "blank" for total defect size rather than "0%". * "Compare Page" – previous studies without valid scores will now show defect sizes of "-" rather than "-1%".</p>
<p><u>Instant refresh for errors and warnings</u> "Referring Physician" combo box now refreshes errors and warnings, so you no longer need to hit "save" after setting referring physician to get rid of the error message.</p>
<p><u>Fix save error for titles when editing referring physicians</u> Referring physician Editor – The default title of "M.D." now is saved when the dialog is closed (previously it would not be saved unless you deleted/manually reentered it).</p>
<p><u>Protect signed reports from extra screen shots</u> When running in QGS+QPS Print screen button would allow adding extra screen caps after a study was signed.</p>
<p><u>Fix for dates when QARG is left running overnight</u> QARG Study Selection: Date Range selection is now dynamic – this means if you select "today" and leave the program running overnight, it will correctly show today's studies when refreshed instead of the previous days.</p>
<p><u>Fix error in ECG report cover letter</u> ECG Report: Cover letter Stress ECG results incorrectly referred to ST elevation as positive ST depression (i.e. +3mm ST depression) – now the clause should read "+3 mm ST elevation" or "-3 mm ST depression".</p>
<p><u>Fix small font problem for diagonal territory in dictation</u> Report Generation Dictation – calculation of minimum box size did not take bullets into account, so would create a box too small and would force a small font to be used (The issue that caused "Diagonal" to appear in small text in the dictation)</p>
<p><u>Grammar fixes in some cases for automatic comparison to previous study</u> Dictation Comparison sentence: fixed typo that caused "are are" and "are is" sentences like "previously nonreversible defects... are are now reversible"</p>
<p><u>Reload ARG data when saving</u> When running in QGS+QPS, ARG User interface was not being reloaded after a save, so if conflicts were resolved, the UI would not reflect the change (thought the generated reports etc were correct).</p>
<p><u>Display username for logged events</u> Study Log viewer did not show user names for the logged events</p>
<p><u>Spelling fix for application</u> Fix spelling error of 'hypotension'</p>

Fix when setting a password during Welcome Wizard

Fix issue setting passwords from welcome wizard

Fix consistency-check (error) regarding reverse redistribution

Quant page - Functional improvement at stress would highlight reverse redistribution checkbox.

QGS+QPS 2013.0 (19362)

Major new functionality or change incorporated in V.2013 for QGS+QPS
Feature Description
<u>Combined Mode</u> Combined QGS+QPS application mode enabled for all vendors
<u>Transient Ischemic Dilation (TID)</u> TID now available for all vendors
<u>Group Processing</u> A new group processing algorithm has been added which allows for simultaneously solving left ventricular geometry for all of the available datasets. It allows the algorithms, in regions where structure cannot be definitively determined for one or more of the datasets, to make decisions that exploit all the available information and that do not introduce arbitrary inter-study inconsistencies.
<u>Embedded AutoRecon/Moco</u> If licensed, "RAW" page allows full reconstruction / motion correction (same as used in AutoRecon)
<u>Fast dataset Selector</u> A button next to the dataset selector allows for instant selection of common combinations of dataset pairs (stress:rest, supine:prone, etc.). Button dynamically adjusts based on input data

Minor new functionality or change incorporated in V.2013 for QGS+QPS
Feature Description
<u>Lung:Heart Counts</u> Lung heart counts available to all vendors
<u>Study merging</u> New 'Fold' button allowing merging of all loaded datasets (across studies) into one study, for side by side comparison
<u>View "groups" for polarmaps</u> Enable polar map Grid = Groups
<u>Faster loading</u> Performance improvement to loading files via DICOMDIR (multithreaded file load)
<u>Smarter Legend Display for Secondary Captures</u> For secondary captures: display isotope in legend if radpharm is not available
<u>Added data type support</u> Added support for gated planar datasets (only viewable on RAW page)
<u>Overrides for secondary captures</u> Added operator and institution overrides for the dataset legend. Allows overriding of the DICOM fields
<u>Less resource intensive</u> Reduce CPU consumption when application is minimized

Bug fixes incorporated in V.2013 for QGS+QPS
Feature Description
<u>Fix display for thickening extent polar map</u> PFQ Thickening extent polar map was incorrectly a copy of the motion extent polar map
<u>Fix issue reading heart rate for gated PET</u> QPET now correctly reads gated PET heart rate
<u>Ammonia databases were available when not running in PET mode</u> Ammonia databases now only available when running in PET mode
<u>Date of Birth was shown in more page, when anonymized</u> Make sure anonymized DOB is shown as appropriate (excluding ARG)
<u>Added proper support for frame duration for dynamic PET</u>

QBS 2013.0 (19362)

Major new functionality or change incorporated in V.2013 for QBS
Feature Description
<u>Reporting available</u> Fully integrated ARG reporting available

Minor new functionality or change incorporated in V.2013 for QBS
Feature Description
<u>New default algorithm</u> Changed default algorithm to count-based calculations (surface based calculations still available from defaults)

Bug fixes incorporated in V.2013 for QBS
Feature Description
No bug fixes for QBS 2013.0

AutoRecon / MoCo 2013.0 (19362)

Major new functionality or change incorporated in V.2013 for AutoRecon / MoCo
Feature Description
<u>Defaults Available</u> User settings (defaults) screen now available

Minor new functionality or change incorporated in V.2013 for AutoRecon / MoCo
Feature Description

Improved auto-selection

Better auto-selection of datasets during application load

Bug fixes incorporated in V.2013 for AutoRecon / MoCo

Feature Description

Use input datasets as template when saving corrected file

MoCo only: when saving motion corrected data, use the input DICOM file as a template if available

Bugfix

Installer 2013.0 (19362)

Major new functionality or change incorporated in V.2013 for Installer
Feature Description
<u>SQL Server moved out of standard installation</u> - SQL Server still supported, but separate installation is required - Updated SQL Server installer to v2008 R2 sp2 (installer works on both 32bit and 64bit systems)
<u>Installation logging</u> Added logging to installer: <WCONF>/log
Minor new functionality or change incorporated in V.2013 for Installer
Feature Description
<u>Improved conflicting processes screen</u> - Modified script to allow user to kill processes themselves from within the installer to continue. - Show full paths of running processes, preventing installation
<u>Delete all settings option for uninstall</u> Uninstaller now has a checkbox for user to optionally Delete Settings and Data.
<u>Automatic install of arecon.exe</u> Moco/Autorecon option is now hidden, and installed automatically if Imaging Apps is selected.
<u>Documentation Moved</u> Documentation moved to Program Files\CSMC Cardiac Suite\doc\ instead of the shared directory Application Data\CSMC Cardiac Suite\doc
<u>Custom Documentation</u> Use custom vendor manuals for vendor builds (instead of 'factory' manuals)
<u>Intelligent prompting for reboot</u> Only prompt for reboot when necessary
<u>Updated dependency checker</u> (SQL Server Install Only) Installer .NET checker now works for .NET 3.5, 4.0, and 4.5.
<u>New Dependency</u> (SQL Server Install Only) Added PowerShell 1.0 as a dependency.
Bug fixes incorporated in V.2013 for Installer
Feature Description
<u>Command prompt display during install</u> Remove command line window from popping up during installation

Concurrent Server 2013.0 (19362)

Major new functionality or change incorporated in V.2013 for Concurrent Server
Feature Description
No major features added to Concurrent Server for v2013

Minor new functionality or change incorporated in V.2013 for Concurrent Server
Feature Description
No minor features added to Concurrent Server for v2013

Bug fixes incorporated in V.2013 for Concurrent Server
Feature Description
<u>Stability improvements</u> Reduce "license lost from server" error messages, and potential crash

CSMC Cardiac Suite Released Features-V. 2012

CSMC Cardiac Suite v2013 also includes the following v.2012 changes

2012.6 (18756)

Major new functionality or change incorporated in V.2012.6		
Build	Application(s) affected	Feature description
No major functionality introduced in 2012.6		

Minor new functionality or change incorporated in V.2012.6		
Build	Application affected	Feature Description
18200	QGS, AUTOQUANT	<u>Alert user if no MTQ databases present</u> If MTQ (Motion/Thickening Quant) databases are not found, then display an alert dialog
18203	QGS, AUTOQUANT	<u>Phase polarmaps display</u> Allow viewing of other values than regional means on the phase polarmap
18226	QPS, QGS, AUTOQUANT	<u>Default to 17-segments</u> If a companion license is present, default to 17-segments
18237	QPS, QGS, AUTOQUANT	<u>Modality and Flip 'Z' in dataset editor</u> Added transverse (TRA) and short axis (SAX) modality toggle in dataset editor. Also adds the ability to flip the dataset's 'Z' dimension; this is for use if the dataset does not contain proper data type and vector information.
18421	QPET	<u>Improved contouring for dynamic PET</u> Uses improved algorithm for automatic contouring of dynamic pet datasets
18503	CSI	<u>Edit dynamic PET/SPECT frame duration</u> Adds frame duration field to dataset editor in CSI (ViewHeader)
18589	QPS, QGS, AUTOQUANT	<u>Dataset legend display in secondary captures</u> If radiopharmaceutical is unavailable, display isotope instead in the legend
18598	CSI	<u>Added MakeVolumes to CSIimport</u> Adds 'Make Volume' option to CSIimport. MakeVolume is used to convert non-volume files (e.g. dynamic pet) into a single composite volume, to improve loading performance. This option must be manually enabled within CSI
18715	INSTALLER	<u>Added Logging to installer during upgrades</u>

Bug fixes in V.2012.6		
Build	Application affected	Feature Description
18004	CSI	<u>OS X - CSI upgrade</u> Properly preserve all user settings and CSI database when upgrading
18142	QPS, AUTOQUANT	<u>Stress Thallium database meta data</u> Male and Female Stress Thallium database headers incorrectly had "Any" for Attenuation Correction (AttCor). This has been changed to "OFF" for these two databases (FemaleStressTL and MaleStressTL)
18159	Concurrent Server	<u>Reinstallation of concurrent server</u> Fix issue where lighttpd-inc.conf_2 would be written instead of lighttpd-inc.conf, causing concurrent server not to run
18161	CSI	<u>Customized font family</u> Resolves display issue when changing the font family; previously the new font did not appear in the box where you selected the new font
18202	CSI	<u>Auto-select lone database</u> Resolves auto-select issue when only one CSI database is present
18267	MoCo	<u>Exporting results with 'Unknown' code scheme</u> Add support for multiple code schemes for the PatientGantryRelationshipCodeSequence (0054,0414) DICOM element.
18278	QPS, QGS, QBS, AUTOQUANT	<u>Preserve accession number in snapshots</u> Resolves issue where the accession number is somehow removed entirely when the composite results file is saved. Therefore anything you do using the results file (such as taking screen captures) will not contain the Accession number information. This creates problems with RIS/PACS systems that use accession number as one of the primary identifiers.
18313	QPS, AUTOQUANT	<u>OS X - Crash when clicking Compare</u> Fixes crash (only on OS X) when the user is on Change Page and clicks Compare
18337	MoCo	<u>Preserve all DICOM fields when saving MoCo results</u> Use input dataset as starting template when creating a MoCo results file. This will preserve private elements
18435	QPET	<u>Kinetic graphs frame duration</u> Modify graphs to account for frame duration as well as start time
18584	Concurrent Server	<u>Stability improvements</u> Stability improvements to reduce potential 'license removed from server' messages

18655	MoCo	<u>Crash on Save</u> Fixes crash in Windows when saving data
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Vendor Specific Changes in V.2012.6 (only available in vendor's version)		
Build	Vendor	Feature Description
18176	Spectrum	Resolve issue checking for and ARG license when ARG panel is inactive
18604	Philips - Xcelera	Resolve installation issue with ARG database on Xcelera
18610	Philips - Xcelera	Adds new Xcelera licenses
18626	Thinksys	Enables Save button, and cluster aware floating license server

2012.5 (18001)

Major new functionality or change incorporated in V.2012.5		
Build	Application(s) affected	Feature description
No major functionality introduced in 2012.5		

Minor new functionality or change incorporated in V.2012.5		
Build	Application affected	Feature Description
17954	CSI	<u>Select database at launch if there's only one</u> Automatically select the CSI database if only one exists; previously required an explicit selection

Bug fixes in V.2012.5		
Build	Application affected	Feature Description
17762	QPS, QGS AUTOQUANT	<u>Snapshots not loading in PET only mode</u> Allow QXS to load datasets for unlicensed modalities unless volumetric or projection
17818	QBS	<u>Crash on Phase Page</u> Fixes crash after processing and switching to Phase page
17828	QPS, QGS	<u>Identification of QPS/QGS Results files</u> Allow QPS to correctly identify dynamic datasets as perfusion
17843	CSI	<u>Crash on DICOM push of results file</u> Fixes crash when pushing a DICOM results file within CSI
17859	CSI	<u>PET only mode - apps in CSIImport</u> Application icons automatically created for PET only mode
17860	QBS	<u>ES/ED zoom discrepancy</u> Fixes issue with manual page zooms ES display differently from ED when using datasets other than 64x64 matrix size
17864	QPS, QGS AUTOQUANT	<u>Defaults editor segment mode display</u> Fixes display bug with the Grid setting under page options; did not display 'segments' properly, instead it displays 'none'.
17873	QPS, QGS AUTOQUANT	<u>Print/movie dialogs legend table is missing column headers</u> Ensures column headers are displayed in the print/movie dialog
17944	QPS, QGS, QBS AUTOQUANT	<u>Positron data identification</u> Correctly read in process id field from positron data

17953	CSI	<u>OS X - browsing of /Volumes local folder</u> Allows browsing of /Volumes folder when importing. Previously only displayed /root
17956	CSI	<u>OS X - Ability to remove sample data</u> Allow deletion of sample patients from CSI
17965	QPS+QGS	<u>Application icon</u> Fixes application icon when running in 'QPS+QGS' mode
17969	CSI	<u>Editing of series description</u> Resolves issue when manually editing series description in DICOM datasets containing tag ImageID
17982	CSI	<u>OS X - corrupt CSI database on re-install</u> Fixes potential issue with the CSI database when reinstalling
17992	QGS, AUTOQUANT	<u>Remove paired processing for MTQ</u> Removed paired processing rules for QGS segmental scores (motion/thickening)
17995	QPS, AUTOQUANT	<u>Prone+ - algorithm adjustments</u> Disable the male specific rules for Prone+ if patient is actually sitting

<u>Vendor Specific Changes in V.2012.5 (only available in vendor's version)</u>		
Build	Vendor	Feature Description
17816	Siemens	Bugfix: resolve data identification issues when loading Syngo.via
17985	Philips	No longer use old Phase page, and other Suite2009 behaviors
17999	ALL	Use vendor supplied IFU, if available

2012.4 (17760)

Major new functionality or change incorporated in V.2012.4		
Build	Application(s) affected	Feature description
No major functionality introduced in 2012.4		

Minor new functionality or change incorporated in V.2012.4		
Build	Application affected	Feature Description
17537	QPS	<u>MFSC Support</u> Allow QPS to load MFSC images (provided MFSC license is present)
17542	QPS, QGS AUTOQUANT	<u>Remove warning when missing snapshots or CT files</u> Remove warning message when loading a result file and CT files and/or snapshots were not embedded
17731	QPS, AUTOQUANT	<u>Ammonia Databases</u> Added Ammonia (NH3) databases to standard installation

Bug fixes in V.2012.4		
Build	Application affected	Feature Description
17646	QPS, QGS, AUTOQUANT	<u>Dosage information in result file</u> Adds dosage information to result file
17716	QPET	<u>PET Only Mode</u> Removes licensing dialog when running in PET only mode
17734	QBS	<u>Crash in partially processed QBS Results</u> Fixes crash when switch from Phase page to Results page, when RV was not able to be processed.
17748	Fusion/CT	<u>Crash on Window/Level Presets</u> Fixes potential crash when opening window/level presets
17750	QPS, QGS, QBS, AUTOQUANT	<u>Cropping of Large Fonts in Infobox</u> Fixes potential issue with text cropping on infobox (left side panel) when running with an increased font size
17756	QPS, QGS, QBS, AUTOQUANT	<u>Keyboard locking</u> Fixes potential issue which locks keyboard input to all windows applications during Application processing

Vendor Specific Changes in V.2012.4 (only available in vendor's version)		
Build	Vendor	Feature Description
17752	Philips	Include updated Astonish Databases

2012.3 (17506)

Major new functionality or change incorporated in V.2012.3		
Build	Application(s) affected	Feature description
17488	Concurrent Server	<u>Statistics Tracking</u> Add statistics tracking to concurrent license server; includes maximum licenses used, average time each client occupies license

Minor new functionality or change incorporated in V.2012.3		
Build	Application affected	Feature Description
17499	QPS, QGS, QBS, AUTOQUANT	<u>Auto-Save</u> When receiving a save and close request from vendor integration, always silently save.
17383	QPS, QGS, QBS, AUTOQUANT	<u>Result File Filtering</u> Filter out result files for types that are known to be incompatible
17250	QPS, AUTOQUANT	<u>Dynamic PET algorithm improvements</u> For DICOM gated PET, consider number of phases when computing inter-frame time, RR interval, heart rate.
17241	QBS	<u>Performance for result file reading</u> Performance improvements to result file reader
17236?	QPS, QGS, AUTOQUANT	<u>PET Only Mode</u> Added PET Only mode to all configurations
17215	QGS, AUTOQUANT	<u>Standard MTQ databases</u> Use explicit Motion Thickening databases, rather than the ones for PFO; removes chance of database mismatches causing scores not to generate
17120	ALL	<u>Improve available memory</u> Allow applications to use up to 4GB memory when running on 64-bit platforms (previously 2GB)

Bug fixes in V.2012.3		
Build	Application affected	Feature Description
17505	QPS, AUTOQUANT	<u>TPD with multiple stress datasets</u> Fixes issue concerning TPD calculation, when multiple stress datasets are loaded
17501	Concurrent Server	<u>MoCo and AutoRecon communication with Concurrent Server</u> Fixes problem with MoCo and AutoRecon communicating with concurrent server

17456	QPS, QGS, QBS, AUTOQUANT	<u>MFSC on Snapshot Page</u> Make movie captures instantly available on snapshot page
17244	ARG, QARG	<u>ECG ST Segment Elevation on cover letter</u> Fixes issue where stress ECG ST elevation was reported as positive depression (e.g. +3mm ST depression)
17154	ARG, QARG	<u>Print screen on signed report</u> Remove ability for users to add a print screen to a signed report (by clicking PrntScr button). Note that the print screen would have not affected the signed report until the report was unsigned.
17119	QPS, AUTOQUANT	<u>Dynamic PET data identification</u> Improve isotope identification for dynamic PET datasets.

Vendor Specific Changes in V.2012.3 (only available in vendor's version)		
Build	Vendor	Feature Description
17506	Siemens	Added support for syngo.via integration
17493	Philips	Include Astonish and Vantage limits files
17405	Segami	Updates to licensing calls to match Segami's specs
17373	Segami	Include MSDE (SQL Server) for Segami

2012.2 (17114)

Major new functionality or change incorporated in V.2012.2		
Build	Application(s) affected	Feature Description
No major functionality introduced in 2012.2		

Minor new functionality or change incorporated in V.2012.2		
Build	Application affected	Feature Description
17095	CSI, INSTALLER	<u>Initialization of CSI applications</u> Automatically initialize the quantitative applications available from CSI based on the features installed and licenses available.
17055	ALL	<u>Updated translation files</u> Updated translation files (French, Italian, German, Spanish, Chinese and Japanese) to include additions and fix reported errors.
17038	CSI	<u>DICOM Push</u> Enabled installation of DICOM Push feature by default
16972	ARG	<u>Performance Improvements</u> Performance improvements for large ARG databases
16942	QPS, QGS, AUTOQUANT	<u>CT Snapshots</u> Enable embedding of CT snapshots, even if CT embedding is disabled

Bug fixes in V.2012.2		
Build	Application affected	Feature description
17059	QARG	<u>Dialog Layouts</u> Minor layout adjustments to login, global preferences and export dialogs
16989	QPS, AUTOQUANT	<u>Motion / Thickening Identical Polarmaps</u> Fixes issue where MTQ bases motion and thickening blackout maps are identical
16935	Concurrent Server	<u>Icon display</u> Fixed alignment issue with logo display when viewing in IE (internet explorer)

Vendor Specific Changes in V.2012.3 (only available in vendor's version)		
Build	Vendor	Feature Description
17077	Thinksys	Added Thinksys configuration

2012.1 (16829)

Major new functionality or change incorporated in V.2012.1		
Build	Application(s) affected	Feature description
16464	QPS, AUTOQUANT	<u>Computer generated scores</u> Whenever a Stress/Rest dataset pair exists, the following rule shall apply to computer generated, pixel based, values (i.e., Defect, Extent, TPD, etc): Rest scores with values that are higher on rest than on stress shall be assigned the stress score values. Previously this rule was only being applied to segment based summed scores.
16287 ¹	QGS	<u>Saving Motion Frozen datasets</u> Whenever the motion frozen technique is used to create a new motion frozen dataset, there will be an extra tab "Frozen" available within the Save Results dialog that allows users to save motion frozen datasets back to the database. The MF dataset can then be loaded into QPS for evaluation.

¹Only applies to Cedars-Sinai direct version

Minor new functionality or change incorporated in V.2012.1		
Build	Application affected	Feature description
16471	Installer	<u>Arecon & floating license server</u> AutoRecon and Concurrent license server shall be available in the GUI-component selections, for Cedars-Sinai direct version installation.
16394	QGS, AUTOQUANT	<u>MTQ Processing</u> Enable new motion / thickening algorithm even if PFQ is not enabled
16274	QPS, QGS, CSI	<u>Upright imaging</u> The application now supports upright ("sitting") patient orientation.
16268	QGS, AUTOQUANT	<u>Save Motion Frozen</u> Added option in save dialog to save motion frozen results to database
16222	ARG	<u>Conflict handling</u> When a user hits "sign", If there are <i>any</i> changes made to the study in another instance (by a different user such as a technologist or an assistant at their workstation), the user should be warned by being presented with a conflict dialog.
16157	Concurrent Server	<u>Upload key from Server</u> Added ability to upload a license file directly from the license server
16144	AutoRecon	<u>Prompt to Save if dirty</u> Added prompt to Save/Exit/Cancel if results are processes and dirty

16040	AutoRecon	<u>Iterative Reconstruction Refinements</u>
16038	QGS, AUTOQUANT	<u>Smoother Severity Polarmaps</u> When running with the new motion/thickening algorithm severity polarmaps will be smoothed for display purposes
15998	QGS, QPS, AUTOQUANT, QBS	<u>Snapshots instantly available</u> When saving a snapshot in application, it will be instantly available on the snapshot page for viewing; previously snapshots were only exported and not instantly available
15981	QGS, QPS, AUTOQUANT, QBS	<u>Result Files</u> Results files saved in compatibility format will have the version identifier added to the series description (e.g. "(v3)")

Bug fixes in V.2012.1		
Build	Application affected	Feature description
16666	QPS, QGS, QBS, AUTOQUANT	<u>UTF-8 Results file</u> Fixes issue saving non-latin patient names to result files
16638	Concurrent Server	<u>License Removed from Server</u> Fixed error with concurrent server, where licenses were getting periodically dropped from the server.
16514	QBS	<u>Intermittent Crash on Counts Page</u> Fixes intermittent crash on counts page
16310	QPS, AUTOQUANT	<u>Sync of visual scores between multiple datasets</u> Correctly handle case where multiple images reference the same set of visual scores
16294	QPS, AUTOQUANT	<u>Summed Difference Score</u> Displayed SDS is now more consistent with displayed SSS & SRS. Whenever more than 2 summed short axis datasets are loaded (either 3 or 4), the SDS (and SD%) is calculated using the same datasets that were used for calculating SSS and SRS.
16292	QBS	<u>Dataset Editor Display</u> Hide the dataset editor warnings in QBS (N/A for QBS)
16142	AutoRecon	<u>About Box</u> Moved About Box button from colorscale control to main button area
16231	CSI	<u>Intermittent Crash in CSI after launching QXS</u> Fixes intermittent crash in CSI after launching QPS, QGS or QBS
16208	QPS, AUTOQUANT	<u>SRS Calculation error</u> Fixes SRS calculation error, which occurred when not running ARG; previously SRS = SSS

16129	QBS	<u>QBS Masking Bug</u> Fixed issue related to QBS manual masking
16127	ALL	<u>Intermittent Open GL Crash</u> Fixes intermittent crash related to Open GL windows
16101	QPS, QGS, QBS, AUTOQUANT	<u>Low resolutions support</u> Fix for defaults dialog and infobox when running in low resolutions (e.g. 1024 x 768)
16095	QARG	<u>Crash in comparison sentence editor</u> Fix intermittent crash in comparison sentence editor
16074	QARG	<u>Crash when creating new referring physician</u> Fixes crash when selecting 'new...' from referring physician dropdown
16012	QGS/QPS, AUTOQUANT (with QPET)	<u>PET slices collation error</u> Bug fix for PET slices collation error. Previously, when single frame DICOM data was loaded via a DICOMDIR, intermittently, contiguous volumes were collated incorrectly (missing slices, slice fragments).

Vendor Specific Changes in V.2012.1 (only available in vendor's version)		
Build	Vendor	Feature Description
15986	Mirada	Force color scale / window level to lie within application window
16727	Philips	Support for Portal Environment

2012.0 (15910)

Major new functionality or change incorporated in V.2012.0		
Build	Application(s) affected	Feature description
15830 ¹	QGS, QPS, AUTOQUANT	<p><u>Results File</u></p> <p>Results files may now be loaded into the respective application regardless of the mode (QGS/QPS/AQ) of generating application. Only applicable results will appear based on the application being launched (i.e., Only perfusion results will be loaded when launching QPS using AutoQUANT or QGS results files)</p>
15581	ARG/QARG	<p><u>Auto Dictation update</u></p> <p>Auto dictation is generated for myocardial perfusion studies based on their polar map scores (ex: "* LAD: a small reversible defect in the anterior wall."). This is now done when SSS > 2. Previously this sentence would only get generated when SSS > 3.</p>
15393	CSI	<p><u>AimConfig</u></p> <p>New, wizard-like, feature that assists users with establishing DICOM connectivity between CSI and other supported workstations.</p>
15277	QGS/QPS, AUTOQUANT	<p><u>Quality Score</u></p> <p>Novel method developed to evaluate the segmentation of the left ventricle in SPECT images for the gated and non-gated stress/rest scans with and without attenuation correction.</p>
15165	QPS, AUTOQUANT (with Fusion/CT)	<p><u>Automatic Registration</u></p> <p>Using novel techniques, this feature allows for automatic software co-registration of coronary CTA and MPS images obtained on separate scanners, allowing CTA-guided contour and vascular territory adjustment on MPS for improved quantitative MPS analysis.</p>
15161	QGS, AUTOQUANT	<p><u>Motion/Thickening scores</u></p> <p>Algorithm for calculating Motion and Thickening scores has been improved and updated.</p>
13572	QPS, AUTOQUANT (with QPET)	<p><u>Kinetic</u></p> <p>New feature for processing and reviewing dynamic cardiac PET data sets. Feature includes specific algorithm for 82RB and 13N-NH3 tracers for calculating absolute blood flow and coronary flow reserve (CFR). Spill-over fraction and RPP correction are also included on the Kinetic page.</p>
12011	QGS, AUTOQUANT, QBS	<p><u>Phase</u></p> <p>Thickening Phase information is now directly derived from count variations which is different from previous method that used the epi- and endocardial surfaces.</p>

12011	QGS, AUTOQUANT, QBS	<u>Phase</u> Echo like measurements, TTPV, TTMD and TTMT, are hampered by the comparatively low temporal resolution of SPECT imaging. These have been removed in version 2012 to simplify the software and focus it more on clinically relevant measures.
11427	CSI, QPS, AUTOQUANT, QGS, QBS	<u>Localization</u> Cedars-Sinai Cardiac Suite now supports 7 languages (Simplified Chinese, English, French, German, Italian, Japanese and Spanish).

¹Only applies to Cedars-Sinai direct version

Minor new functionality or change incorporated in V.2012.0		
Build	Application affected	Feature description
15909	ARG	<u>Arg database credentials</u> Default ARG database credentials are changed to 'arguser' for username and 'CSMCnm42!!' for password.
15904	QGS, QPS, AUTOQUANT, QBS, QARG, CSI	<u>About Box</u> The about box which is accessible from all applications has been updated to comply with EU standards. It now contains CE mark logo, manufacturer logo, European Representative info, etc.
15878	ARG/QARG	<u>ICANL elements</u> -New ICANL required element "Route of administration" for all radiopharmaceuticals and stress agents has been added to the report templates. (i.e., "0.4 mg regadenoson" will now be reported as "0.4 mg IV Regadenoson"). -To comply with ICANL standard, reports will state "electronically signed" when applicable.
15876	ARG/QARG	<u>ARG reports – "electronically signed"</u> Whenever a report is signed electronically, an "electronically signed" label with the date/time of the signing will be placed in the footer section of the report.
15874	ARG/QARG	<u>Regadenoson test types</u> 11 different Regadenoson test types (i.e., Regadeno Rb, Regadeno Mibi, Regaden Thallium, etc) have been added to default 'study type' list.
15851	CSI, QPS, AUTOQUANT, QGS, QBS, QARG	<u>User Manuals</u> Individual quick start guides have been combined into a single user manual for the entire suite of applications. More detailed reference manuals are available for individual applications.
15842	CSI	<u>User Manuals and Reference Guides</u> User manuals and reference guides now available from CSI menu

15819	QPS, QGS, AUTOQUANT	<u>XML Results</u> Allow XML results output without ARG, provided an ARG license is present
15805	ALL	<u>CE Marking</u> Modified About box to include required labeling for CE Mark.
15766	Silent Installation (vendors only)	<u>Custom instance name</u> The silent installer (using silent.ini file) now allows the ability to change the instance name for the ARG SQL Server database.
15607	ARG/QARG	<u>Regadenoson</u> Warning message routines for pharm stress doses have been updated to accommodate Lexiscan (Regadenoson).
15293	ALL Applications	<u>Research Only Mode</u> Added research only mode to all applications. Title bar, images and all secondary captures state 'Research Only'.
15269	QGS, AUTOQUANT	<u>Motion Frozen</u> The Motion Frozen technique is now supported with gated datasets with any number of frames greater than 1.
15367	QGS, QPS, AUTOQUANT	<u>Heart Rate - Unknown</u> Added 'unknown' option when manually editing heart rate
15227	QGS, QPS, AUTOQUANT	<u>Heart Rate (BPM) Editing</u> Added ability to manually override (edit) heart rate, used for diastolic function, phase and dynamic calculations. Persists in result files
15126	QPS, AUTOQUANT, QGS, QBS, CSI	<u>Non-Latin characters</u> The software is now able to decode and display patient name containing non-Latin character sets allowed by DICOM. This is subject to the availability of fonts required for the character sets from the operating system. Additionally, for Chinese, Japanese and Korean, if multiple forms (up to 3, separated by "=" in the DICOM person name field) of the name are present in the DICOM person name value, the application shall display all of the names that are present.
15107	QPS, QGS, QBS	<u>Add '-indir' integration option</u> Added ability to specify inputs to qxs.exe using -indir <foldername>. Where <i>foldername</i> contains a path containing supported image files (e.g. DICOM).
15080	ARG Server	<u>Strong SA Password Change</u> Change default SQL Server password to be compliant with updated best practices for strong security - required for Windows Server 2008.

Bug fixes in V.2012.0		
Build	Application affected	Feature description
15826	QGS, AUTOQUANT	<u>Phase histograms</u> Fixes drawing issue with phase histograms
15810	ARG, INSTALL	<u>Incorrect segmental mode on install</u> Installation now defaults to 17 segment mode (if companion available)
15790	ARG/QARG	<u>EDVi units</u> ARG reports were reporting EDVi units as "ml/ml2" instead of "ml/m2".
15684	ARG/QARG	<u>Regadenoson units</u> ARG reports incorrectly used to report regadenoson units as "mg/kg" instead of "mg".
15670	ARG/QARG	<u>ARG Likelihood Sentence</u> If likelihood filled out and the patient's history contains a myocardial infarction; then: * if a pharmacological study then list "jeopardized myocardium" * if an exercise study then list " exercise induced ischemia" Otherwise list "angiographically significant coronary artery disease".
15653	ARG/QARG	<u>Report viewer</u> The view reports function for signed study used to intermittently show a grey window until the user clicked the window, which would display the report. This is now fixed.
15509	ARG/QARG	<u>Report dates</u> If QARG loads a study with valid dates, then loads another with any unset dates (i.e. a new study), the program cannot reset the control to empty, so the date fields would default to the values from the previously loaded study. This impacts the "acquisition times" in the perfusion quant section. A new type of date/time control which can deal with empty dates is created to address this.
15452	ARG/QARG	<u>Auto dictation</u> Wall motion abnormalities reporting logic has been changed. In the "Myocardial Function" section, there is a sentence like "Resting and exercise post stress gated SPECT revealed no wall motion abnormalities" which should be shown only if there are both stress and rest gated scores, and both are all 0s. In previous version, the sentence used to be shown if rest scores were all 0s regardless of stress scores.
15294	ALL	<u>Help button - Reference Guides</u> Clicking the 'Help' button within each application will now open the application's reference guide

15292	QARG	<u>Splash Page and icons</u> Fixed issue preventing splash page from displaying during startup and main application icon displaying in title bar
15272	QPS, AUTOQUANT (with QPET)	<u>UI indication when RPP correction applied</u> Added Legend display when RPP correction applied to dynamic flow
15269	QGS, AUTOQUANT	<u>Motion Frozen - unusual gating intervals</u> Permit motion frozen algorithm to run on datasets with unusual gating intervals (e.g. 12 frames). Previously only 8 and 16 frames were supported

CSMC Cardiac Suite Released Features-V. 2009

Major new functionality or change incorporated in V. 2009	
Application affected	Feature description
QGS	<u>Phase</u> New Phase page added. Previously, Phase information was displayed using a separate dialog/toggle from the Results page.
QGS	<u>Phase</u> Multiple datasets may be processed and displayed on the Phase page.
QGS	<u>Phase</u> New 'Combine' button added to the Phase page, which displays a single, shaded polar map for phase angle and amplitude.
QGS, QPS, AUTOQUANT	<u>Screen captures</u> When running with ARG, look for PrintScreen key in addition to Ctrl+Shift+P for ARG Screen Captures.
QGS, QPS, AUTOQUANT, QBS	<u>Printer</u> Print dialog now lists all available printers
QGS, QPS, AUTOQUANT, QBS	<u>Dataset selector</u> Colors and symbols were added to the dataset selector dropdown menu to make it easier to differentiate between datasets.
ARG/QARG	<u>Editing</u> Users can now override stress and rest isotopes added to test type using 'Edit' or 'Edit Study Information' options.
ARG/QARG	<u>ICANL logo</u> Accreditation logo(s) was added for ICANL, which can be enabled through site manager.
ARG/QARG	<u>Page numbers</u> ARG reports now contain page number.
ARG/QARG	<u>Data exports</u> Additional fields were added for data export: signing physicians, study date and test type.