Medis
MEDICAL IMAGING

Imaging Solutions
in a Heartbeat

Medis® Suite CT

Une solution complète, validée et rapide temps pour le post-traitement cardiaque

NOS FONCTIONNALITÉS CLÉS

- Analyse de la fonction myocardique
- Analyse de la déformation par le strain pour LV, RV et Atria
- Reformatage des données 3D en données 2D
- Paramètres innovants tels que le déplacement vers l'intérieur
- Rapide et facile à apprendre et à utiliser

NOS PRINCIPALES CARACTÉRISTIQUES POUR LA RECHERCHE

- Analyse CTA avec extraction automatique de l'arbre coronaire
- Avec segmentation automatique des contours et de la lumière des vaisseaux
- Rapport d'analyse de plaque par groupe

QUOI DE NEUF ?

- Détection automatique de l'orientation des images long axe dans l'analyse des déformations
- Ajout du Rubber banding et d'autres outils d'édition des contours pour en simplifier les changements dans l'analyses des déformations
- Les résultats régionaux peuvent être exportés directement dans un fichier XML ou JSON. Cela s'applique au mouvement de la paroi et à toutes les valeurs de déformation régionales. Ces valeurs peuvent ainsi être automatiquement intégrées dans votre système de rapport

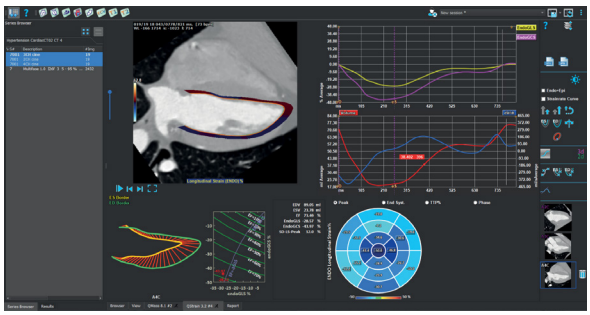
CE QUE DISENT NOS CLIENTS

' Nous avons étudié la plaque coronaire par tomodensitomtérie chez des patients atteints d'hypercholestrolmie familiale et nous avons pu constater que la quantité de plaque est en corrlation avec le risque cardiovasculaire estimé et le nombre d'évènements cliniques futurs. Cela pourrait être très pertinent pour le développement futur d'un traitement hypolipidique personnalisé.
Avec l'aide des outils robustes d'analyse quantitative des plaques de Medis nous avons pu obtenir nos résultats de manière efficace et hautement reproductible.'

Leopoldo Perez de Isla
MD, PhD, FESC
Hospital Clinico San Carlos
Madrid, Spain

' Évaluation de la déformation longitudinale globale du ventricule gauche, sur les données scanner avec Medis Suite CT, est très rapide et reproductible, fournissant un élément d'information supplémentaire dans la stratification du risque patients soumis à un TAVI .'

Victoria Delgado, MD
LUMC Leiden, the Netherlands



Déclaration juridique
Medis Suite CT est basé sur des algorithmes de traitement d'images développés par la division de traitement d'images du département de radiologie du centre médical de l'université de Leiden, aux Pays-Bas.
Medis est une marque déposée de Medis Associated BV.
Medis Suite MRCT bénéficie d'une autorisation de mise sur le marché dans l'UE, aux États-Unis, au Royaume-Uni, en Suisse, en Australie, au Japon, en Corée et au Canada.

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Legal statement

Medis Suite CT is based on image processing algorithms developed at the Division of Image Processing, Department of Radiology, Leiden University Medical Center, The Netherlands.
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Medis Suite MRCT has market authorization in the EU, US, UK, Switzerland, Australia, Japan, Korea and Canada.

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Medis® Suite CT 2023

Product Specification Sheet

M-MSP: MEDIS SUITE PLATFORM (VIEWER, CONNECTIVITY, REPORTING)

- Support for Cardiac CT studies of all major CT vendors
- Access to Cardiac CT studies across the network
- Import of cardiac CT studies from local storage media (hard disk, USB, and CD/DVD)
- DICOM connectivity, receiving cases, query and retrieve, pushing results to PACS
- Centralized database, thick client solution possible with multiple clients
- JPEG2000 support
- Review series side by side, drag 'n drop series into the viewer, cross referencing tools, fast paging through series, simple caliper measurements
- Enhanced workflow, run multiple apps in parallel
- Loading of prior exams in parallel
- Enhanced clinical report, combining all measurements in a single report, snapshots, add comments, save as PDF, view in text format. Clinical XML and JSON output.
- User log in
- Role Based Access Control
- DICOM SR output for results of Clinical applications
- User interface and User manual available in multiple language for the Clinical applications

M-MRA: 3DVIEW APP

- Viewing 3D MR and CT Angiography series, double oblique viewing, MPR, MIP, slabbed MIP, VR
- CPR (Curved Planar Reformatting)
- Efficient caliper measurements, including double distance measurement
- Sculpting (isolating custom volume of interest)
- Create reformats
- Add temporal resolution

M-CCT: QMASS GLOBAL FUNCTION MODULE

- Guided workflow
- LV and RV function analysis
- Global function analysis (Simpson's method) on short axis or transversal stack of cines
- Quantification of custom volumes, such as atrial volumes
- Area-length and Bi-plane volumetric analysis methods for long axis cines
- Semi-automatic contour detection for RV endocardium
- "LiveContour" algorithm to quickly detect endocardial contours
- "Time-Continuous" contour detection
- Automatic exclusion of images in short axis based on information in long axis
- Auto-detection of papillary muscles and trabeculae with "MassK mode"
- Quantification of EDV, ESV, SV, %EF, CO, CI, indexed values (BSA and height), (time to) peak filling and ejection rate
- Various BSA calculation methods for indexed results
- Various normal ranges possible, calculation of z-scores

M-MRM: QMASS REGIONAL FUNCTION MODULE

- Analysis of regional parameters, such as wall motion, wall thickness, wall thickening and wall thickness changes over time
- Regional results are part of the XML and JSON report output

M-SMR: QSTRAIN CT

- NEW: Automatic 2CH/3CH/4CH view recognition
- NEW: Automatic mirroring of Long Axis imges
- NEW: Rubber banding and other contour editing tools
- Quantify strain in RV 4 Chamber, Atrial 2 Chamber, LV long and short axis orientations based on feature tracking in SSFP images
- Quantification of Global strain parameters: GLS, GCS, GRS and Fractional Area change
- Quatification of delta rotation
- Quantification of 16 segment AHA strain parameters: Strain, Strain Rate, velocity
- Quantification of RV segmental (septum and free wall) strain parameters: Strain, Strain Rate, velocity
- Generate results for endo, mid and epicardial wall
- Global clinical results available in the Medis Suite report
- The AHA segment model results are part of the XML and JSON output
- More extensively research report can be exported in xml and MS-Excel

M-INW: QSTRAIN INWARD DISPLACEMENT ADD-ON

- Quantification of Inward Displacement (InwD) and Inward Displacement Index (InwId) allowing for objective evaluation of regional dysfunction
- Modality independent, works on CT as well as MR series

CTA ANALYSIS FOR RESEARCH USE ONLY

WORKFLOW

- Fully automatic extraction of the complete coronary tree
- Semi-automatic editing of coronary tree
- Automatic labeling of the segments in the coronary tree with anatomical names
- Analyze multiple vessels at the same time
- A two step contour detection approach per vessel for both lumen and vessel contours.
  - Longitudinal detection: provides quick overview of border and allows easy corrections which will propagate to the transversal step.
  - Transversal detection: Based on the longitudinal contours and corrections
  - Edit contours in longitudinal and transversal images simultaneously
- Flexible lesion detection and definition using synchronized views of the vessel data (stretched MPR, curved MPR, graphs).
- Simple contour editing workflow (2-steps)
- Automatic segment labeling for reporting and statistics

RESULT

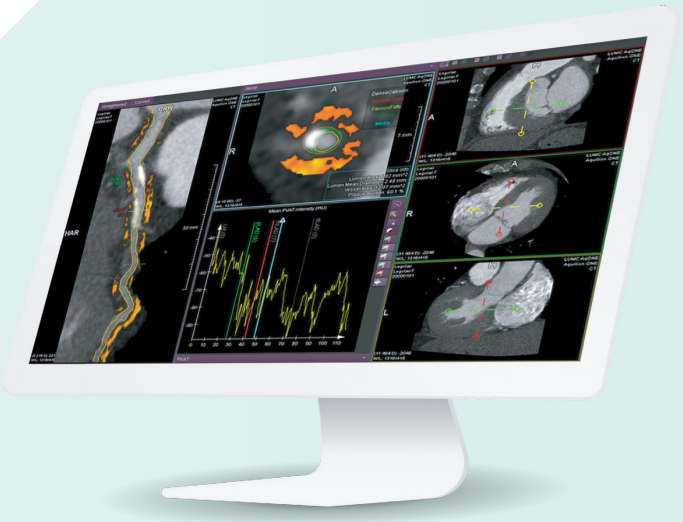
- Lumen and plaque statistics:
  - Degree of stenosis (diameter and area)
  - Lesion length
  - Plaque burden
  - Plaque volume (per lesion and per vessel)
  - Vessel remodeling index
  - Mean plaque and lumen intensities
  - Fixed and adaptive thresholding methods for plaque characterization
  - Plaque characterization components according to Virtual Histology classification: Vessel segment labeling
  - Peri-Vascular Adipose Tissue (PVAT) analysis
- Data export:
  - All analysis results including coronary tree, contours, lesion parameters and vessel labels can be saved and reloaded again for reviewing and/or exporting
  - Easy data export for quantification data (Excel or co-py-to-clipboard)
  - Batch processing of quantified parameters from multiple studies into a single spreadsheet
  - Segment based
  - Lesion based
  - Slice based
  - Screenshots (jpeg, png, copy to clipboard, DICOM snapshots)
  - 3D visualization of plaque in 3D, export of lumen (.stl)

CTA PVAT, ADD-ON

- Peri-Vascular Adipose Tissue (PVAT) analysis

CTA 3D WORKBENCH, ADD-ON

- 3D visualization of plaque in 3D, export of lumen (.stl)



	Modules		Packages			
			Medis Suite CT, Function	Medis Suite CT, %EF, 3D View, CT Strain	QAngio CT Research Edition	QAngio CT Research Edition Extended
Medis Suite CT	Clinical	3D Viewer	✓	✓		
		CT Function Global	✓	✓		
		CT Function Regional	✓	✓		
		CT Strain		✓		
		Inward Displacement				
	Research	CT Plaque Research			✓	✓
		PVAT Research				✓
		3D Workbench Research				✓

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Medis® Suite MR 2023

		MODULES	PACKAGES					
			ESSENTIALS	ADVANCED EDITION	PREMIUM EDITION	PREMIUM PLUS	DEDICATED STRAIN	DEDICATED FLOW
Medis Suite MR	Clinical	3D View	√	√	√	√		
		Function Global	√	√	√	√		
		Function Regional		√	√	√	√	
		DSI	√	√	√	√		
		TSI		√	√	√		
		T1		√	√	√		
		T2/T2*		√	√	√		
		2D Flow	√	√	√	√		√
		4D Flow						√
		Strain LV			√	√	√	
		Strain RV and Atrium			√	√	√	
		Inward Displacement			√	√		
	Research	T1				√		
		T2/T2*				√		
		ECV				√		
		Hemodynamic Forces				√		

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Legal Statement

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Medis® Suite MR 2023

A comprehensive, time-saving and validated solution for Cardiac MR post-processing

Product Specification Sheet

M-MSP: MEDIS SUITE PLATFORM (VIEWER, CONNECTIVITY, REPORTING)

- Support for Cardiac MR studies of all major MR vendors
- Access to Cardiac MR studies across the network
- Import of cardiac MR studies from local storage media (hard disk, USB, and CD/DVD)
- DICOM connectivity, receiving cases, query and retrieve, pushing results to PACS
- Centralized database, thick client solution possible with multiple clients
- JPEG2000 and enhanced MR support
- AutoQ for preprocessing data
- Review series side by side, drag 'n drop series into the viewer, cross referencing tools, fast paging through series, simple caliper measurements
- Enhanced workflow, run multiple apps in parallel
- Loading of prior exams in parallel
- Enhanced clinical report, combining all measurements in a single report, snapshots, add comments, save as PDF, view in text format. Clinical XML and JSON output.
- User log in
- Role Based Access Control
- DICOM SR output for results of Clinical applications
- User interface and User manual available in multiple language for the Clinical applications

M-MGM: QMASS GLOBAL FUNCTION MODULE (MR)

- NEW: Improved LA/SA classification for function analysis selection
- NEW: Improved LA/SA classification for Autonomous AutoQ
- Guided workflow
- LV and RV function analysis
- Global function analysis (Simpson's method) on short axis or transversal stack of cines
- Quantification of custom volumes, such as atrial volumes
- Area-length and Bi-plane volumetric analysis methods for long axis cines
- Deep learning contour detection for LV in LAX
- Semi-automatic contour detection for RV endocardium
- "LiveContour" algorithm to quickly detect endocardial contours
- "Time-Continuous" contour detection
- Automatic exclusion of images in short axis based on information in long axis
- Auto-detection of papillary muscles and trabeculae with "MassK mode"
- Quantification of EDV, ESV, SV, %EF, CO, CI, indexed values (BSA and height), (time to) peak filling and ejection rate
- Various BSA calculation methods for indexed results
- Various normal ranges possible, calculation of z-scores

M-MRM: QMASS REGIONAL FUNCTION MODULE (MR)

- Analysis of regional parameters, such as wall motion, wall thickness, wall thickening and wall thickness changes over time
- Regional results are part of the XML and JSON report output

M-DCE: QMASS DELAYED SIGNAL INTENSITY (DSI) MODULE (INFARCT SIZE, T2W ANALYSIS, COMBINED DSI-T2W ANALYSIS)

- Guided workflow for automatic infarct tissue quantification
- Transfer contours from short axis cine stack
- Various automated threshold calculation methods
- Automatic infarct detection
- Quantification of infarct size (% and mass), infarct transmurality
- Quantifying regions of hyper-, intermediate and hypo-intense signal intensities
- Threshold per slice or per sequence of slices
- T2-weighted analysis, combined DSI-T2-weighted analysis
- T2-ratio

M-MSU: QMASS TIME SIGNAL INTENSITY (TSI) MODULE

- Enhanced Contour registration to correct for breathing motion
- Baseline correction methods
- Automatic calculation of relative upslope
- Upslope curves per myocardial segment and user defined ROI's
- Set transmural range for measurement of subendocardial and subepicardial perfusion curves
- AHA 16 results are generated and are part of the XML and JSON report output

M-TTM: QMASS T2/T2STAR ANALYSIS MODULE

- Fast quantification of T2* decay time and decay rate
- Color overlay
- Correct for breathing motion

M-TOM: QMASS T1 ANALYSIS MODULE

- Measure T1 value based on automatic motion corrected T1 Maps
- Calculation of T1 relaxation time in MOLLI and Look Locker sequences
- Calculation of residual maps
- Automatic Motion Correction
- Color overlay
- Correction for breathing motion

M-FLX: QFLOW APP

- Phase-contrast MR blood flow analysis
- Automatic contour detection
- Copy of contours in forward and backward diretion
- Various background correction methods to correct for flow-induced artifacts, "Stationary Flow Fit" and
- "Phantom Correction"
- Phase unwrapping to correct for aliasing
- Color-coding to visualize velocities
- Calculation of velocities and volumetric blood flow in up to 4 ROI's
- Automatic calculation of regurgitant fraction and volumes
- Display of min and max velocity pixels
- Calculation of maximum pressure and mean systolic pressure gradient
- Quantification of CSF flow

M-4DV: QFLOW 4D APP

- Simple MPR tool (multi planar reformatting)
- Single click noise removal
- Single click Background offset correction (1st, 2nd & 3rd order)
- Color overlay displaying the speed
- Allow launching of QFlow quantification of volumes, regurgitant fraction and peak flow velocity (see M-FLX QFlow app, separate license)
- Visualization of Streamlines in 2D and 3D
- Enhanced visualization of vectors
- Review flow as overlay on Cine SSFPs in 2D
- Single click phase unwrap functionality

M-MRA: 3DVIEW APP

- Viewing 3D MR and CT Angiography series, double oblique viewing, MPR, MIP, slabbed MIP, VR
- CPR (Curved Planar Reformatting)
- Efficient caliper measurements, including double distance measurement
- Sculpting (isolating custom volume of interest)
- Create reformats
- Add temporal resolution

M-SMR: QSTRAIN MR

- NEW: Deep learning contour detection for LAX and SAX
- NEW: Automatic 2CH/3CH/4CH view recognition
- NEW: Automatic mirroring of Long Axis images
- NEW: Rubber banding and other contour editing tools
- Quantify strain in RV 4 Chamber, Atrial 2 Chamber, LV long and short axis orientations based on feature tracking in SSFP images
- Quantification of Global strain parameters: GLS, GCS, GRS and Fractional Area change
- Quantification of delta rotation
- Quantification of 16 segment AHA strain parameters: Strain, Strain Rate, velocity
- Quantification of RV segmental (septum and free wall) strain parameters: Strain, Strain Rate, velocity
- Generate results for endo, mid and epicardial wall
- Clinical results available in Medis Suite
- Global clinical results available in the Medis Suite report
- The AHA segment model results are part of the XML and JSON output
- More extensively research report can be exported in xml and MS-Excel

M-INW: QSTRAIN INWARD DISPLACEMENT ADD-ON

- Quantification of Inward Displacement (InwD) and Inward Displacement Index (InwInd) allowing for the objective evaluation of regional dysfunction
- Modality independent, works on MR as well as CT series

M-HDF: QSTRAIN HEMODYNAMIC FORCES ADD-ON, FOR RESEARCH USE ONLY

- Instant caculation of Hemodynamic Forces from routine apical views, based on a mathematical model validated against 4D Flow MRI
- Hemodynamic Forces (HDF) analysis for the evaluation of Intra-Ventricular Pressure Gradients (IVPGs), a global property describing LV function

MS-ECV: QMAP ECV, FOR RESEARCH USE ONLY

- Create parametric maps for T1-ECV
- Quantification of delta T1 (pre and post adenosine stress exams)
- Supports LL, MOLLI, SR, console generated maps
- Correction factor
- Offset, scaling, fit residual error
- Display of relaxation graphs
- Automatic Motion Correction for pre- and post-contrast T1 images (either one by one or simultaniously)
- Flexible manual motion correction
- Flexible co-registration of T1 native (pre-contrast) and T1 post-contrast maps
- Comprehensive results for myocardial segments and up to 4 ROI's and segments
- The 16 segment model results are part of the XML and JSON report output
- Save maps as DICOM
- Save results to MS-Excel

MS-REL: QMAP T1&T2 RELAXOMETRY, FOR RESEARCH USE ONLY

- Create parametric maps for T1, T1*, T2 and T2*
- Supports LL, MOLLI, SR, T2 prep and console generated maps
- Correction factor
- Offset, scaling, fit residual error
- Display of relaxation graphs
- Flexible manual motion correction
- Flexible co-registration of T1 native (pre-contrast) and T1 post-contrast maps
- Comprehensive results for myocardial segments and up to 4 ROI's and segments
- AHA 16 segment model results and bull's eyes
- Save maps as DICOM
- Save results to MS-Excel

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Medis® Suite MR

Une solution efficace, complète et validée pour le post-traitement d'IRM cardiovasculaires

NOS FONCTIONALITÉS CLÉS

- Analyse de la fonction myocardique
- Analyse de la déformation par le strain
- Analyse du flux en 2D et 4D
- Quantification de la taille de l'infarctus
- Quantification de la perfusion cardiaque
- Analyse de la cartographie T1
- Analyse T2 et T2*
- Visualisation RM

DÉCOUVRIR LES AVANTAGES

- Solution tout-en-un pour votre routine RMC quotidienne
- Contours automatiques d'apprentissage profond dans SAX pour LV & RV
- Contours automatiques d'apprentissage profond dans LAX pour LV
- Paramètres innovants tels que le déplacement vers l'intérieur et les forces hémodynamiques* (HDF pour la recherche uniquement)
- Analyse des contraintes pour le ventricule gauche et les oreillettes
- Analyse rapide, efficace et pratique du flux 4D
- Cartes corrigées automatiquement en fonction du mouvement pour T1
- Déploiement et configuration personnalisés
- Connecté à votre scanner, PACS ou système de rapport
- Rapide et facile à apprendre et à utiliser
- Fiabilité grâce à nos normes de haute qualité

QUOI DE NEUF ?

- Améliorations majeures du flux de travail pour l'analyse des déformations afin de réduire le temps d'analyse et le nombre de clics. L'importation directe de contours d'apprentissage profond, la détection automatique de la vue et de la mise en miroir pour les vues à grand axe, et l'édition des contours du myocarde avec l'élastique

CE QUE DISENT NOS CLIENTS

'Medis Suite MR est notre principale solution pour la lecture des études RMC. Medis fournit des outils fiables et faciles à utiliser. Nous examinons les cas avec l'équipe chaque jour et nous trouvons que le visualiseur est extrêmement utile pour ces sessions d'examen.'

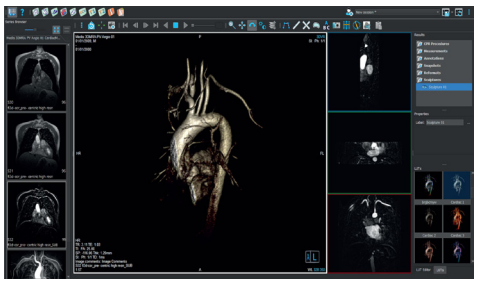
Dr. Raymond Kwong
Harvard Medical School,

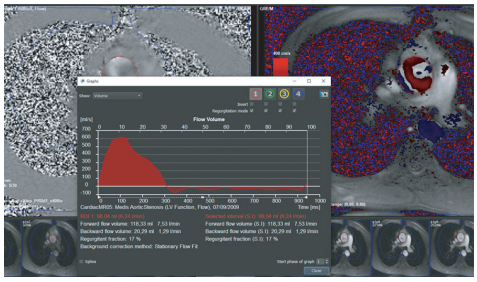
'L'apprentissage automatique de Medis avec AutoQcontours est absolument fantastique, un véritable et un énorme gain de temps.'

Dr. Russell Bull
Royal Bournemouth Hospital, UK

'La nouvelle Medis Suite a ajouté à la force proverbiale de ce logiciel, à savoir l'interface conviviale, une meilleure articulation et une plus grande facilité d'utilisation permetant une évaluation facile et complète des images cardiaques.'

Prof. Massimo Lombardi,
Policlinico San Donato, Milan, Italy





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