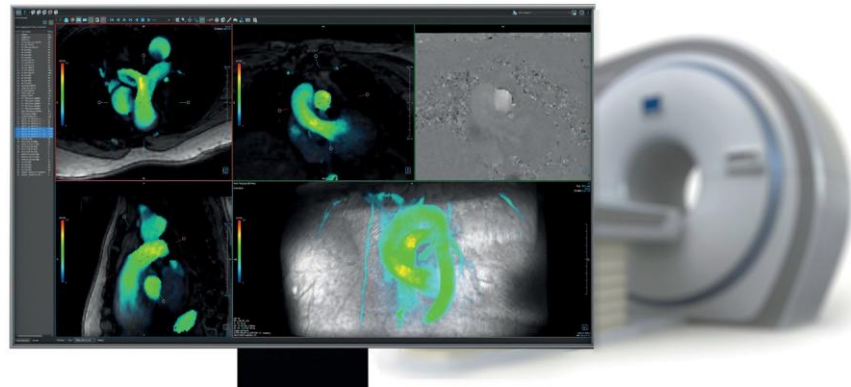


# Medis Suite MR

## Cardiac diagnostics made **simple**.

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

## Product Specification Sheet



### Medis Suite Platform

- Support for Cardiac MR studies of all major MR vendors
- Import of studies from local storage media or via DICOM connectivity from scanner or PACS
- Centralized database, thick client solution possible with multiple clients
- AutoQ for preprocessing data and the generation of AI myocardial contours
- Effortlessly review series side by side, utilize cross-referencing tools, quickly page through series, and perform simple caliper measurements
- Enhanced workflow by running multiple apps or prior exams in parallel
- Generate enhanced clinical reports that combine all measurements into a single document. Capture snapshots, add comments, save as PDF, and view in text format. Support for XML, DICOM Structured Report, and JSON output.
- User log in and Role Based Access Control
- User interface and User manual available in multiple language for the clinical applications
- Seamless deployment of upgrade from server to clients
- Efficient and standardized reporting by enabling customized report templates



### QMass Function Module

- Automated LV and RV function analysis on SAX images by deep learning contours and automatic series detection
- Area-length and Bi-plane volumetric analysis methods for long axis cines enhanced with deep learning contour detection
- Quantification of custom volumes, such as atrial volumes
- 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
- Normal ranges embedded and calculations of z-scores
- Analysis of regional parameters, such as wall motion, wall thickness, wall thickening and wall thickness changes over time



### QMass Delayed Signal Intensity (DSI) module and T2w analysis

- Various threshold calculation methods for automatic infarct detection
- Enhanced workflow by deep learning contours
- Quantification of infarct size (% and mass) and infarct transmural
- Quantifying regions of hyper-, intermediate and hypo-intense signal intensities
- Threshold per slice or per sequence of slices
- T2 weighted analysis for oedema detection
- Combined DSI and T2 weighted analysis for calculating myocardial salvage
- T2-ratio

### QMass Time Signal Intensity (TSI) module

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



### T1 and ECV\* Mapping module

- Automatic quantification of global and segmental T1 and ECV values
- AI-powered myocardial contour detection, with intuitive contour editing tools for manual correction
- AI-based motion correction, including manual (co-) registration tools for user refinement
- Synthetic hematocrit calculation derived directly from image data
- Seamless transition from T1 mapping to ECV analysis\* within a single workflow
- Support for both raw T1 image series and inline-processed T1 maps
- Offset correction to compensate for signal bias from surrounding tissues
- Customizable colour overlay visualisation, including user-defined look-up tables and value ranges



*\*The ECV functionality is for research use only in CE countries.*



### QMass T2/T2\* analysis module

- Calculation of residual maps
- Color overlay
- Quantification of iron overload from T2\* analysis
- Fast quantification of T2 and T2\* decay time and decay rate
- Correct for breathing motion

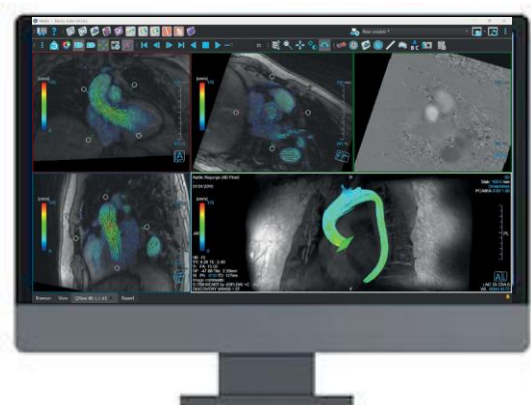
### QFlow module

- Phase-contrast MR blood flow analysis
- Automatic contour detection
- Various background correction methods to correct for flow-induced artifacts
- Phase unwrapping to correct for aliasing
- Color-coding to visualize velocities
- Display of min and max velocity pixels
- Calculation of velocities, blood flow, regurgitation in up to 4 ROI's
- Calculation of maximum pressure and mean systolic pressure gradient
- Quantification of CSF flow
- Automated pulmonary and systemic flow ratio (Qp/Qs) for efficient detection of cardiac shunt



### QFlow 4D module

- Automatic mitral valve tracking for flow and regurgitation quantification
- Support for manual tricuspid, aortic and pulmonary valve tracking
- Simple MPR (multi planar reformatting) tool to quantify flow volumes, regurgitation fraction and peak flow velocity
- Automatic noise removal
- Phase unwrapping functionality to correct for aliasing
- Automatic background offset correction
- Various overlay options are available, including color overlays for speed, streamlines, and vectors
- Visualize flow patterns on 2D anatomical images



## QStrain module

- Automatic strain quantification for LV, RV LA and RA using deep learning contour detection and automatic series detection
- Quantification of global longitudinal, radial and circumferential strain as well as regional analysis
- Rubber banding and other contour editing tools to allow for easy contour manipulation
- Quantification of delta rotation
- Quantification of 16 segment AHA strain parameters: strain, strain rate, velocity and displacement
- Generate results for endo, mid and epicardial wall
- More extensively research report can be exported in XML and MS-Excel
- Quantification of Inward Displacement (InwD) and Inward Displacement Index (InwInd) allowing for the objective evaluation of regional dysfunction
- Automated biplane analysis of the left atrium for more accurate assessment of left atrium volume or strain\*
- Evaluate left atrial strain across all functional phases of the cardiac cycle (reservoir, conduit and contractile), supporting deeper insights into atrial function

\*For research use only



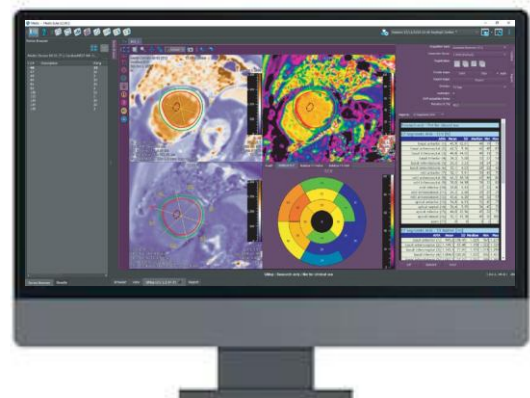
## 3DView Module

- 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

## QMap T2

For research-use only

- Create parametric maps for T2
- Comprehensive results for myocardial segments represented in a bullseye plot and up to 4 user-defined ROIs per slice
- Display of relaxation or decay curves
- Flexible manual motion correction
- The 16 segment model results are part of the XML and JSON report output
- Save maps as DICOM and results to MS Excel





## QStrain Hemodynamic Forces and PV Loops

For research-use only

- Instant calculation 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 IntraVentricular Pressure Gradients (IVPGs), a global property describing LV function
- Calculation of non-invasive PV loops from routine apical views including a simulator tool.

## Medis Suite MR packages.

Choose the right solution for your clinical and research needs.

| FEATURES                                           |  <b>ESSENTIAL</b><br>Core capabilities.<br>Essential for every lab. |  <b>ADVANCED</b><br>More insights.<br>More confidence. |  <b>PREMIUM PLUS</b><br>Complete analysis.<br>Maximum insights |
|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Visualization & Review<br>(Viewer, 3D Viewer, MPR) | ✓                                                                                                                                                    | ✓                                                                                                                                       | ✓                                                                                                                                                 |
| Reporting                                          | ✓                                                                                                                                                    | ✓                                                                                                                                       | ✓                                                                                                                                                 |
| Connectivity & Automation                          | ✓                                                                                                                                                    | ✓                                                                                                                                       | ✓                                                                                                                                                 |
| Function Global                                    | ✓                                                                                                                                                    | ✓                                                                                                                                       | ✓                                                                                                                                                 |
| 2D Flow                                            | ✓                                                                                                                                                    | ✓                                                                                                                                       | ✓                                                                                                                                                 |
| Delayed Signal Intensity                           | ✓                                                                                                                                                    | ✓                                                                                                                                       | ✓                                                                                                                                                 |
| Time Signal Intensity                              |                                                                                                                                                      | ✓                                                                                                                                       | ✓                                                                                                                                                 |
| Mapping (T1, ECV, T2/T2*)                          |                                                                                                                                                      | ✓                                                                                                                                       | ✓                                                                                                                                                 |
| Function Regional                                  |                                                                                                                                                      | ✓                                                                                                                                       | ✓                                                                                                                                                 |
| Hemodynamic forces (RE)                            | Available as optional add-on                                                                                                                         | Available as optional add-on                                                                                                            | ✓                                                                                                                                                 |
| Strain & Inward displacement                       | Available as optional add-on                                                                                                                         | Available as optional add-on                                                                                                            | ✓                                                                                                                                                 |
| 4D Flow                                            | Available as optional add-on                                                                                                                         | Available as optional add-on                                                                                                            | Available as optional add-on                                                                                                                      |
| PV Loops                                           | Available as optional add-on                                                                                                                         | Available as optional add-on                                                                                                            | Available as optional add-on                                                                                                                      |
| Support & Updates                                  | ✓                                                                                                                                                    | ✓                                                                                                                                       | ✓                                                                                                                                                 |
|                                                    | Ideal for centers looking <b>core MR</b><br>analysis to support <b>daily clinical</b><br><b>needs</b>                                                | Ideal for <b>growing CMR programs</b><br>seeking <b>advanced tissue</b><br><b>characterization and analysis.</b>                        | Ideal for <b>expert centers and research</b><br><b>environments</b> that demand the<br><b>highest level of analysis.</b>                          |

### Legal Statements

Medis Suite MR is based on image processing algorithms, developed at the Division of Image Processing, Department of Radiology, Leiden University Medical Center, the Netherlands.  
Medis is a registered trademark of Medis Associated BV.  
Medis Suite MR has market authorization in the EU, US, UK, Switzerland, Australia, Japan, Korea, KSA, Brazil and Indonesia.