Medis
MEDICAL IMAGING

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![Medis Medical Imaging logo] Medis | MEDICAL IMAGING | Imaging Solutions in a Heartbeat

QFR® 2.2

The Medis QFR (Quantitative Flow Ratio) is the X-ray image-based solution for the assessment of the coronary physiology of selected coronary segments. It is based on 3D QCA from 2 angiographic views combined with the patient-specific flow velocity in that vessel. It can replace the invasive FFR-wire approach, at the same time providing multiple additional features, which are further described in this product sheet.

CLINICAL EVIDENCE

- The angio-based solution supported by the greatest number of peer-reviewed scientific publications
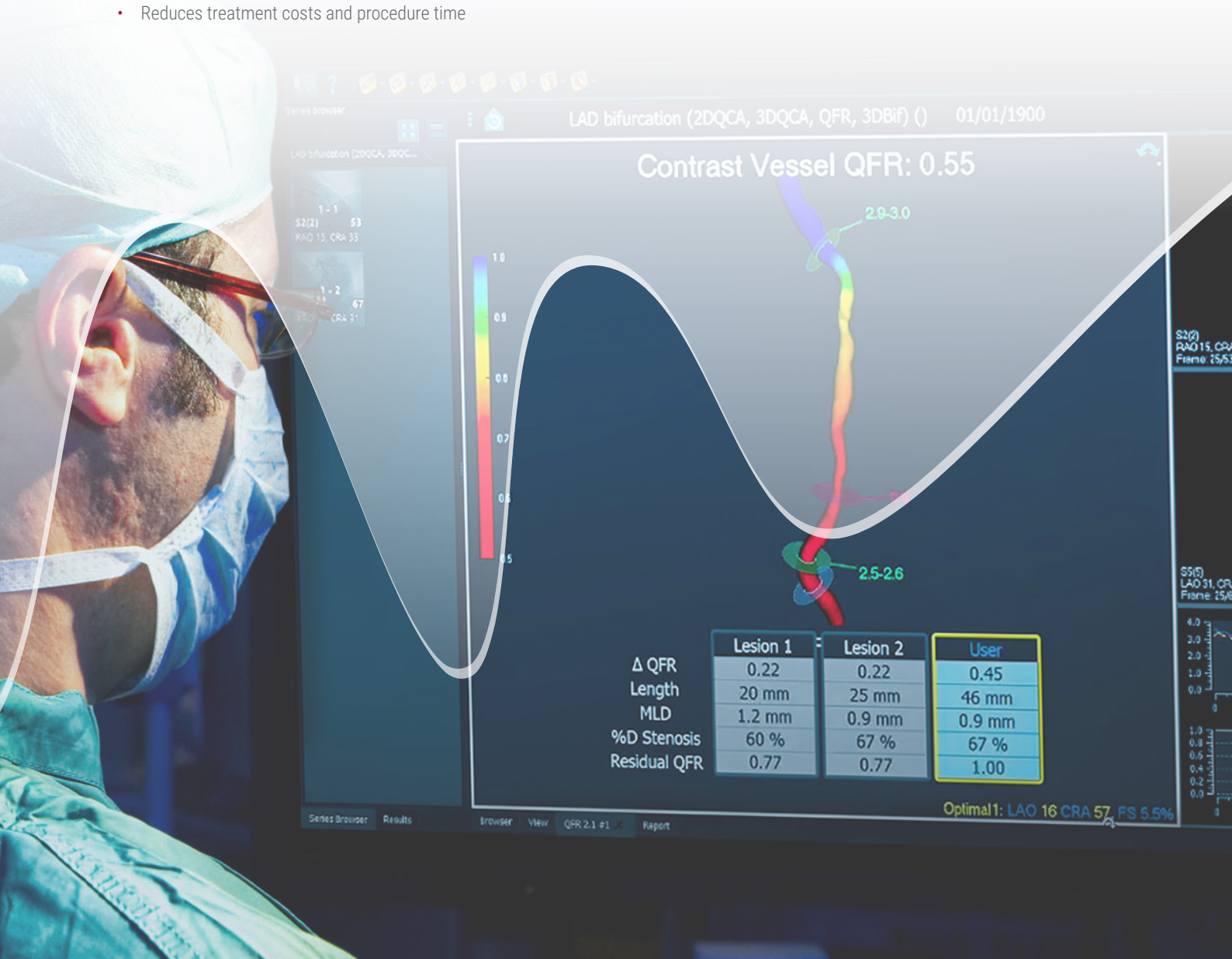
TIME & COST EFFICIENCY

- No pressure wire, no adenosine
- Reduces treatment costs and procedure time

USER FRIENDLY

- Simple & intuitive workflow, applicable for in-procedure as well as offline usage

ECCENTRIC LESIONS

- Accurate even in the case of eccentric lesions

Product Specification Sheet

QFR (POWERED BY QANGIO XA 3D)

QFR is a proven non-invasive coronary physiology measurement that supports better clinical decisions. Extensive use of Artificial Intelligence (AI) in QFR 2.2 has made the tool even simpler and faster.

PROVEN CLINICAL EVIDENCE:

- The accuracy of QFR® has been demonstrated in 185+ peer-reviewed scientific publications
- In the FAVOR III China outcome study, QFR® proved to reduce relative risk of MACE after 2 years by 32% compared with the standard visual interpretation (8.5% vs 2.5%)

TIME & COST EFFICIENCY:

- Offers physiological assessment in <1 minute
- No need to introduce invasive instrumentation/drug

USER FRIENDLY:

- Only 2 angiograms at least 25° apart are needed
- Compatible with any OEM X-Ray vendor
- Can be used pre-, during- and post- PCI

QFR ANALYSIS WORKFLOW
IMAGE ACQUISITION:

- Clinical evidence has demonstrated that >60% of lesions are eccentric, requiring 2 views for accurate 3D QCA
- Guidance of the user in the acquisition of proper views for the QFR analysis
- Efficient pre-selection of angiographic series, showing only series at least 25° apart
- Automated optimal viewing angles calculation

IMAGE ANALYSIS:

- Offset correction to match the same vessel point on the 2 angiograms
- Very fast automated selection of optimal ED frame for analysis
- Matching of 2 views now automated (offset correction)
- Improved automatic contour detection, especially on low dose images
- Excellent pathline detection of vessel segment of interest
- Automated 3D reconstruction of the arterial contours and 3D lesion quantification
- Highly improved Automatic Frame Counting workflow to assess the flow-velocity
- Automated Lesion foreshortening calculation for the original 2D projections and the 3D views

3D QCA ANALYSIS RESULTS

- Results of the 3 most severe lesions are automatically shown and additional user-defined region of interest can be added
- Lumen and plaque statistics:
    - Severity of stenosis (diameter and area)
    - Minimum lumen diameter (MLD)
    - Proximal and distal minimum and maximum diameters (at P- and D-marker positions)
    - Display of 3D reference volume along the entire segment
    - Lesion length
    - Bending angle
    - Five optimal views with minimum lesion foreshortening

QFR ANALYSIS RESULTS

- QFR "pull-back" curve along the coronary segment for visual identification of pressure drops
- QFR values along the entire analyzed vessel segment calculated from 3D QCA according to 2 different flow velocity models:
    - Fixed flow velocity: fixed flow QFR;
    - Basal flow without hyperemia using contrast frame count: basal QFR;
- Two different QFR indices along the analyzed coronary segment:
    - Vessel QFR: The QFR value at the distal location of the analyzed vessel segment
    - Δ (delta) QFR: The pressure drop over the selected lesion

NEW:

- dQFR/ds objectively describes the positions of focal stenoses
- Residual QFR predicts the vessel QFR assuming optimal treatment of selected lesion

MEDIS SUITE PLATFORM (VIEWER, CONNECTIVITY, REPORTING)

VIEWER:

- User login
- Role-based Access Control
- Support for coronary angiograms of all major X-ray vendors
- Review angiograms side by side, drag 'n drop angiograms into the viewer
- Fast browsing through all angiograms, simple caliper measurements, and annotations
- Different calibration options in the viewer (Isocenter, Catheter, Sphere/circle, Manual calibration, Line calibration)

CONNECTIVITY:

- DICOM connectivity, receiving cases, query and retrieve, pushing results to PACS
- Centralized and/or local data repositories
- Import of coronary angiograms from local storage media (hard disk, USB, and CD/DVD)
- Screen can be duplicated to the monitor in the cath lab

REPORTING:

- Anonymization of studies
- Loading prior examinations in parallel
- Structured clinical report

DATA EXPORT

- All analysis results including the 3D reconstruction data and the QFR data can be saved and reloaded again in the same application for reviewing, editing, and exporting
- Quantification results can be exported as a graphical report in PDF and DICOM PDF Secondary Capture format. Results can also be copied to the clipboard in textual format.
- Screenshots can be included in the report, exported to local storage media, or can be copied to the clipboard
- Improved lesion image export
- Audit Trailing

Contrast Vessel QFR: 0.76

	Lesion 1	Lesion 2	Lesion 3	User
Δ QFR	0.06	0.15	0.03	0.23
%D Stenosis	40 %	50 %	34 %	50 %
Reference D	3.9 mm	3.7 mm	3.3 mm	3.7 mm
MLD	2.3 mm	1.8 mm	2.2 mm	1.8 mm
Length	18 mm	14 mm	13 mm	56 mm
Residual QFR	0.81	0.90	0.78	0.99

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