

Revolution Vibe: A new vision for every heart at radiomed

Cardiovascular disease (CVD) is the leading cause of death worldwide, responsible for an estimated 17.9 million deaths annually as of 2019, according to the World Health Organization (WHO). It is projected that this number will increase to over 23 million by 2030. Additionally, it's estimated that a significant proportion of patients with coronary artery disease (CAD) undergo unnecessary or inappropriate invasive procedures, such as catheterization, though the specific percentage may vary depending on the study and healthcare setting.^{1,2}

Cardiac CT angiography (CCTA) has emerged as a less invasive, cost-effective way to identify CAD, diagnosis and management of CVD. The National Institute for Health and Care Excellence (NICE) recommends CCTA as the first-line investigation for all patients with chest pain due to suspected CAD.³ The low cost and high sensitivity of cardiac CT makes it the non-invasive choice in the evaluation of stable angina.³ Additionally, cardiac CT has been shown to improve diagnostic certainty when incorporated into chest pain pathways.³



Radiomed is a large practice for radiology and nuclear medicine in the Rhine Mainz area in Germany with 9 locations and over 300 employees.

Growing demand for CCTA

Radiomed is a leading outpatient imaging network based in the western city of Wiesbaden, Germany. Renowned for its state-of-the-art technology, the group sees a high volume of patients and strives to deliver high-quality care while maintaining financial stability. However, this can be challenging within Germany's dual public-private health insurance system, where reimbursement can be inconsistent and CT imaging is complicated by technologist staffing shortages and radiologist burnout.

"We need to make sure we maintain good quality care and high productivity regardless of available staff and skill levels. So streamlining the CCTA process and saving time for physicians is very important," said Dr. Christopher Ahlers, radiologist and Managing Partner at radiomed.

At the radiomed campus, radiologists were performing about 10 CCTA exams per week to diagnose and monitor stable CAD patients. But when it was announced in early 2024 that CCTA will be reimbursed in the German public healthcare system, radiomed knew it needed to upgrade its technology to meet the expected increase in referrals. That's why the practice decided to upgrade its aging 4 cm CT system with the 16 cm Revolution™ Vibe CT system from GE HealthCare. "We upgraded from our previous platform to the Revolution Vibe so we're ready to take on that challenge," said Dr. Ahlers.

Introducing Revolution Vibe

The Revolution Vibe enables more facilities to elevate patient care.

It consistently delivers exceptional image quality for every patient through Unlimited 1-Beat Cardiac, and provides consistent, high-quality imaging for accurate diagnoses, even in challenging patients with atrial fibrillation, breath-holding difficulties, heavily calcified coronaries, in-stent restenosis, and in situations where an ECG trace is unavailable. The AI-powered Effortless Workflow is optimized for cardiac care to streamline the scanning process, delivering accurate, personalized scans and reducing dependency on user experience.

The Revolution Vibe is intelligently designed, advanced scanner with leading-edge technology that reduces the total cost of ownership (TCO), featuring predictive maintenance, cost-saving contrast media management, energy-efficient features, extensive training, fleet management, and Smart Subscription to keep facilities up to date with the latest technology and upgrades.

The Clarity detector allows low-dose and high-definition imaging with 160 mm of whole heart coverage without banding artifacts. The Quantix™ X-ray tube with 1300 mA maximum output produces superb image quality, even for challenging patients. And Deep Learning Image Reconstruction produces breakthrough TrueFidelity™ DL images for single-energy and dual-energy exams, elevating image quality to the next level.

The industry's first 0.23 sec rotation time with SnapShot Freeze 2 freezes the whole heart at any heart rate, with 19.5 ms effective temporal resolution. And it enables ECG-less Cardiac for exams where excluding the ECG connection can improve patient access and simplify preparation.



Dr. Christopher Ahlers
Radiology Specialist,
Managing Partner

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Doubling CCTA patient throughput

The Revolution Vibe provides comprehensive CAD information to evaluate coronary arteries, structural heart abnormalities and cardiac function to help clinicians plan treatment and improve patient outcomes.

The Revolution Vibe offers Effortless Workflow optimized for cardiac scans that leverages AI to automatically select protocols, position the patient and optimize scanning time. The 1-step decision tree workflow helped radiomed reduce exam time by 50%, freeing up four minutes of radiologists' time per study. Effortless Workflow also helps reduce the patient preparation process by up to five minutes per scan. Much of this time is saved due to reduced positioning time, minimized usage of beta blockers, and eliminating the need for an ECG connection when the cardiac exam needs to be prioritized for patient access and speed.

Effortless Workflow also optimized CCTA exam scheduling, reducing CCTA time slots from 20 minutes to just 10 minutes and doubling CCTA capacity.

High success rate of cardiac CT for challenging patients

The Revolution Vibe also helped reduce the need for beta blockers. Previously, patients received beta blockers if their heart rate was over 65 bpm. Now the percentage of patients who received beta blockers was reduced from 67% to 33%. “We save time because it’s easier to plan with the 16 cm coverage and we don’t need to administer beta blockers as often,” said Dr. Stephanie Bitschnau, a radiologist at radiomed.

This combination of Revolution Vibe technology also allows the practice to efficiently and effectively scan a wider range of patients, including those with arrhythmias and high BMI, as well as patients who can’t hold their breath. “It’s easier to get diagnostic-quality images because we don’t have step artifacts or breathing artifacts anymore, compared with our previous 4 cm coverage CT scanner.” Dr. Bitschnau said. Indeed, a comparative study including 100 consecutive patients scanned on the 4 cm coverage CT scanner and 100 consecutive patients scanned on the Revolution Vibe demonstrated an increase of the success rate (defined as a CCTA having an image quality defined as adequate or good for the diagnosis) from 77% to 96%, respectively.

The Revolution Vibe enables clear, full-heart imaging with Unlimited 1-Beat Cardiac imaging at low dose and low contrast for every patient. This has helped reduce rescans, while improving access to cardiac CT imaging for challenging patients, such as those with atrial fibrillation. Previously with the 4 cm CT scanner, Afib patients wouldn’t have been able to receive a CCTA, or they would have been referred to a different modality. “Now we’re much more confident accepting challenging cases with the Vibe than we were with our previous system,” said Dr. Ahlers.

They’ve also been able to reduce the amount of contrast administered to patients, from 80 mL to 100 mL to just 60 mL to 70 mL. The comparative study between 100 consecutive CCTA from the old 4 cm coverage CT scanner and 100 consecutive CCTA performed on the Revolution Vibe revealed an average reduction of contrast media of 38%. And the faster exam times have led to reduced CT dose on the scanner, specifically on arrhythmic patients with an average reduction of CTDIvol of 42% (mean CTDI : 32.1 vs. 18.34 mGy, on the 4 cm coverage CT scanner and on the Revolution Vibe, respectively). “We’ve been able to reduce contrast media and dose, especially for challenging patients with obesity or arrhythmia. It’s really a dose reduction in patients with not so simple examinations,” said Dr. Bitschnau.



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Dr. Stephanie Bitschnau
Radiology Specialist, Partner

Improving patient satisfaction and revenue

The Revolution Vibe has allowed radiomed to advance its cardiac service line and optimize operation and capital efficiency. This translates to an increase in revenue. Patients also appreciate the faster scans, especially because they’re non-invasive and reduce the number of patients sent to the cardiac cath lab, which also saves time and money. “Patients are very grateful for this technique because they don’t have to have a catheter procedure,” said Dr. Bitschnau.

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Staying ahead in cardiac care and expanding access

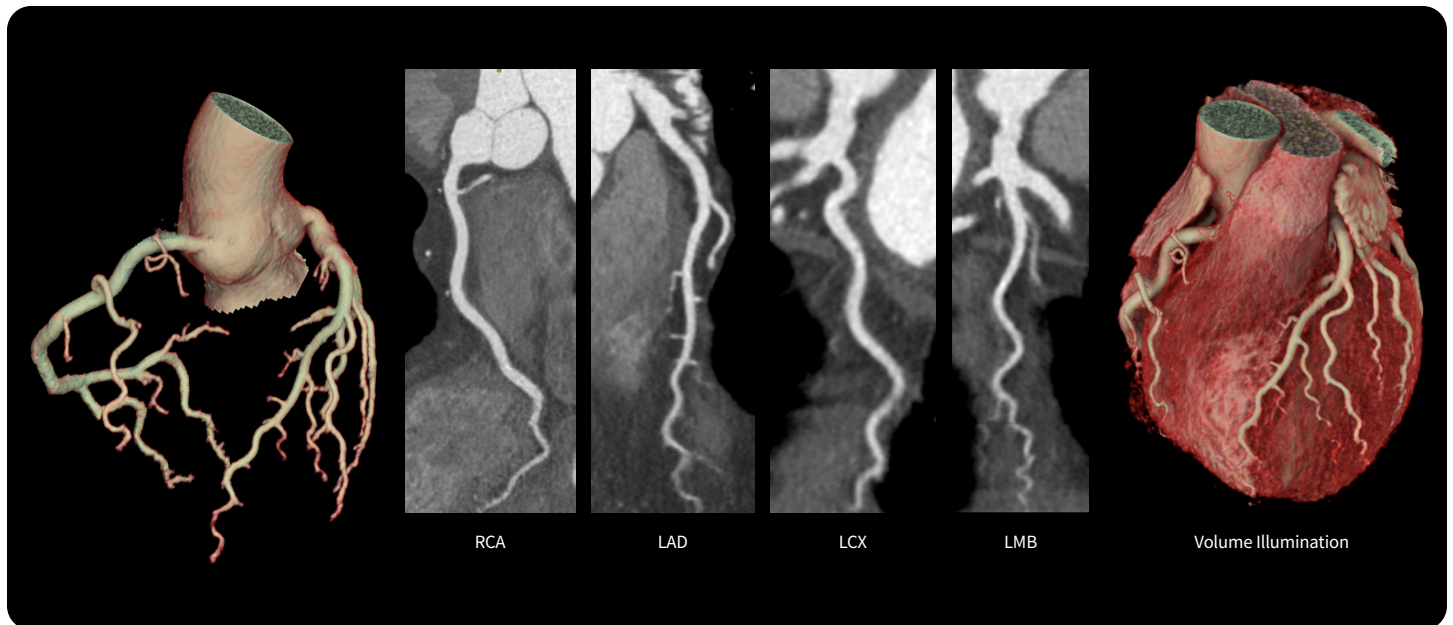
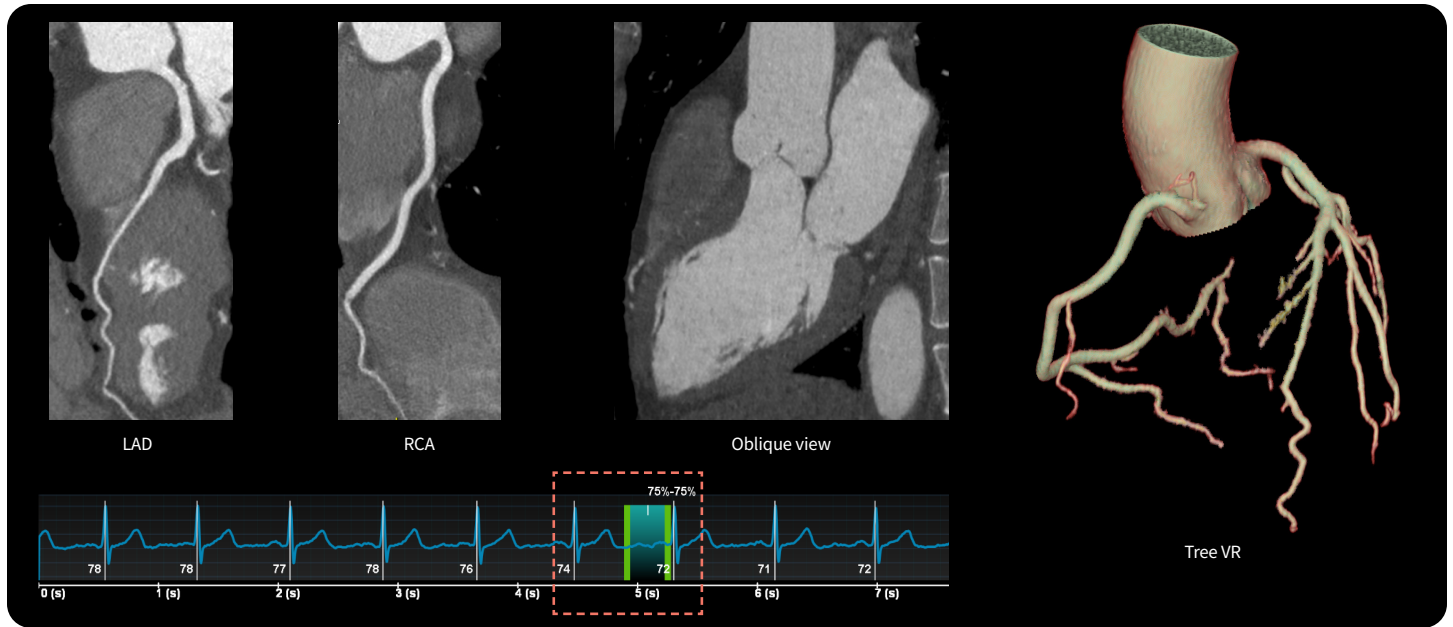
As demand continues to rise for less invasive cardiac care, CCTA will grow in popularity as an efficient and effective modality to diagnose and monitor CAD. radiomed has embraced this shift by upgrading to the Revolution Vibe CT system from GE HealthCare.

This advanced technology has doubled radiomed’s CCTA capacity while reducing scan times, improving image quality and cutting contrast use. By streamlining workflows and enhancing diagnostic confidence, radiomed is improving patient care, increasing operational efficiency and reducing reliance on invasive diagnostics—ensuring it stays at the forefront of cardiac imaging.

“The Revolution Vibe has increased our technical success rate, decreased our dependence on physician resources and increased our capacity for coronary CTA,” said Dr. Ahlers. The Revolution Vibe is an innovative technology that enables more facilities to expand access to better patient care.

Clinical images of Revolution Vibe

Low dose one beat CCTA with TrueFidelity DL rules out CAD



References

- 1 <http://www.clarify-registry.com/healthcare-professionals/about-coronary-artery-disease/1-the-burden-of-cad/>
- 2 Patel. NEJM, 2010, 362, No. 10, 886-95.
- 3 Moss AJ et al. The Updated NICE Guidelines: Cardiac CT as the First-Line Test for Coronary Artery Disease. Curr Cardiovasc Imaging Rep (2017) 10: 15.

