

# Excellence in CT

SOMATOM Definition

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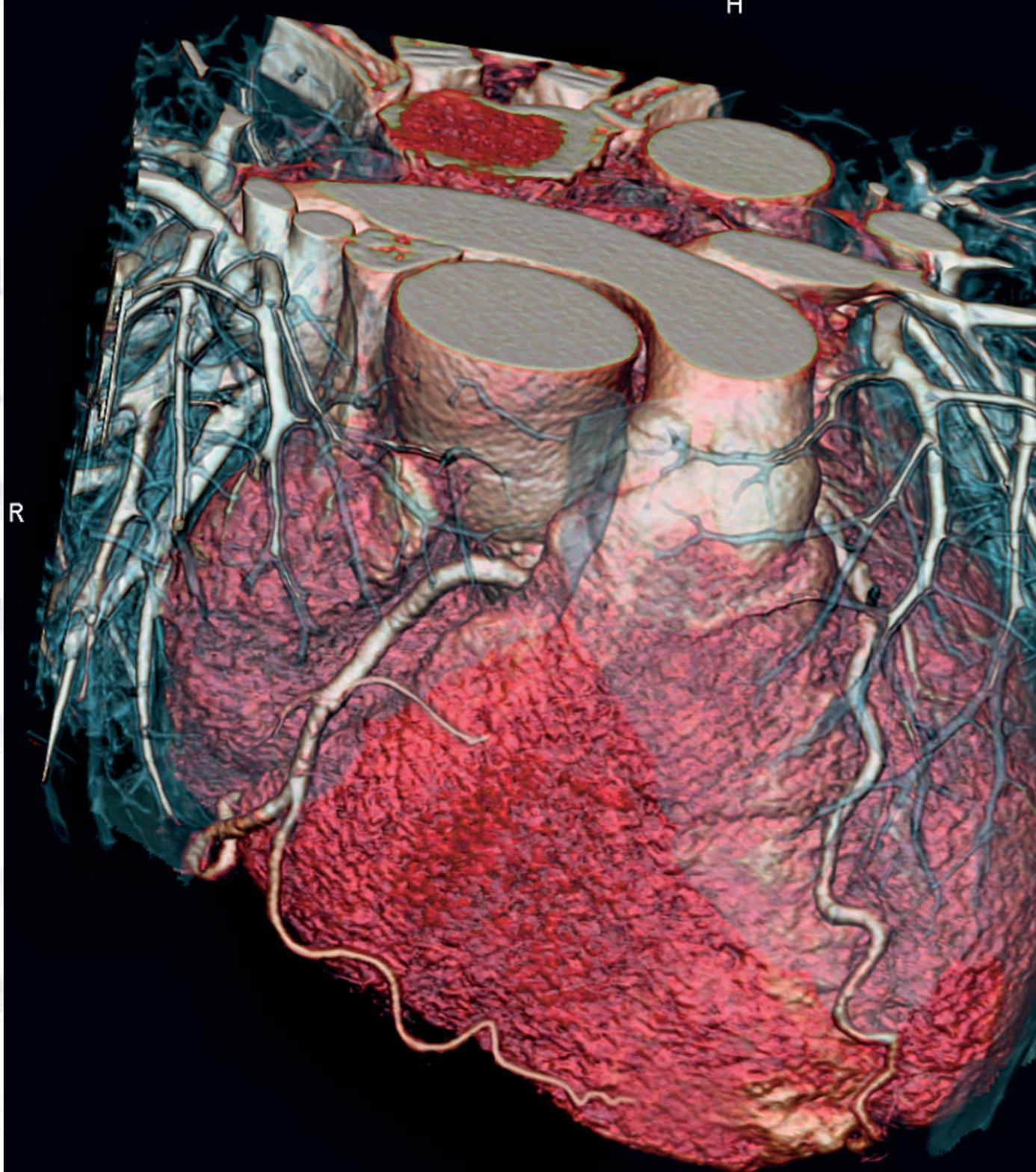


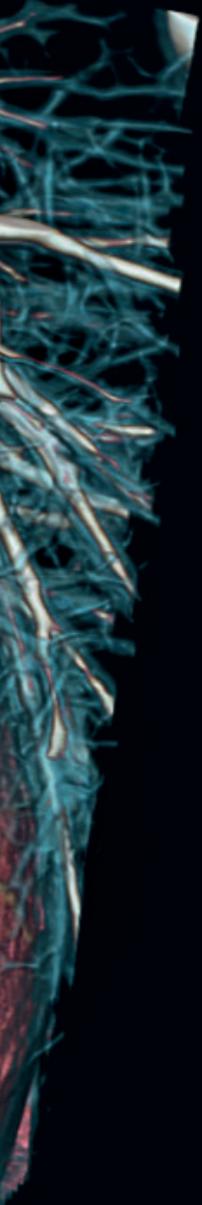
# SOMATOM Definition

Siemens Medical Solutions has been a leader in CT innovation since 1974. Our customer-focused philosophy has always been to continually integrate cutting-edge imaging applications into daily clinical practice, ensuring the highest quality patient care while lowering costs.

Improving healthcare efficiency with innovative technology makes SOMATOM CT scanners a preferred solution for both leading healthcare institutions and physicians all around the world. The resulting largest installed base in high-end CT proves that Siemens CT scanners are not only chosen for cutting-edge research, but also for daily clinical routine.

Once again, we demonstrate our leadership position by making a difference – moving beyond the simple addition of detector rows. With Dual Source CT, we have redefined the clinical role of CT.





## Dual Source CT

**Left:**

Excellent visualization of the complete vasculature, showing an occlusion of the left iliac artery.

**Right:**

Despite high heart rate of 90 bpm, motion free visualization of the coronary arteries.

**The difference Dual Source CT makes? If you don't have it today, you will need it tomorrow.**

The idea behind Dual Source CT is as simple as ingenious: it is merely using two X-ray sources and two detectors at the same time. The result? You get double temporal resolution, double speed, and twice the power, while lowering dose even further. It provides images of exceptional quality and is an amazing tool to explore new clinical opportunities.

The benefits Dual Source CT holds for you and your patients are astounding. SOMATOM Definition allows you to scan any heart at any heart rate without the need of beta-blockers – at the lowest radiation dose ever achieved in CT.

Moreover, it provides one-stop diagnoses regardless of size\*, condition, and heart rate of the patient, saving precious time and money in acute care. And imagine all the additional clinical opportunities spiral dual energy scanning offers in CT by characterizing materials in a single scan.

Reaching excellence in CT is not only about having the most innovative scanner: it is also about pushing clinical boundaries to a higher level, providing advantages nobody wants to miss. We make a difference by offering a complete and comprehensive solution dedicated to all clinical needs, by turning most complex examinations into easy CT routine. Invest in the future, be part of the new era.

Depends on system configuration.  
\* Up to 220 kg/200 cm (485 lbs/79").



Michael Modic, MD,  
Chairman,  
Division of Radiology,  
The Cleveland Clinic  
Foundation,  
Cleveland, USA

“The introduction of Dual Source CT portends one of the most significant technology shifts since the introduction of Spiral and Multislice CT. This novel advance promises not only improvements in speed and coverage but also new clinical advances and applications.”



## Clinical Benefits

- Imaging of all heart rates without  $\beta$ -blockers.
- Scanning of arrhythmic patients.
- Reliable and reproducible plaque discrimination.
- High accuracy of in-stent imaging.
- Acquisition within shortest breath-hold.

## Economic Benefits

- Patient preparation, examination, and diagnosis below 10 minutes.
- No  $\beta$ -blocker application for heart rate control.
- No physician interaction during scanning.
- No pre- and postscan monitoring necessary, neither on patient table, nor in dedicated room.
- Accessible for all patients up to 220 kg (485 lbs).

## Technical Benefits

- Industry's highest heart-rate-independent temporal resolution of 83 ms.
- Industry's highest spatial resolution of 0.33 mm.

Depends on system configuration.

# Faster than Every Beating Heart

**The difference between being fast and being faster than every beating heart? No beta-blockers, no exceptions.**

Over the past few years, a clear vision was born to improve patient care by making non-invasive, cardiac diagnosis routinely accessible for all patients. Using two X-ray sources simultaneously, we at Siemens turned this vision into reality.

Until today, cardiac imaging was only feasible if the patient's heart rate was adequately low and stable. Now, with Dual Source CT, cardiac imaging is twice as fast as with the fastest single source CT. You are able to perform reliable cardiac imaging not only independent of the heart rate, but also without the compromises of beta-blockers or

multisegment reconstruction.

Together with the industry's highest spatial resolution, it visualizes the finest anatomical details in crisp-clear images without motion artifacts. Even the smallest coronary vessels and plaques appear sharper and stents are highly delineated. This gives you the confidence to perform accurate stenosis measurements or stent planning with outstanding precision.

Freezing the motion of every patient's heart is what SOMATOM Definition has been designed for. Making a difference in cardiac CT, it enables you to confidently perform cardiac examinations without compromises – turning cardiac CT into daily clinical routine.



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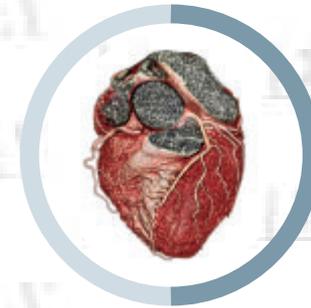
# How It Works

Optimal cardiac imaging can be best achieved in the diastolic phase, which becomes shorter as the heart rate increases. To take a cardiac image, CT scanners have to obtain data projections of 180 degrees. The crucial factor, called temporal resolution, is how long it takes to obtain these data.

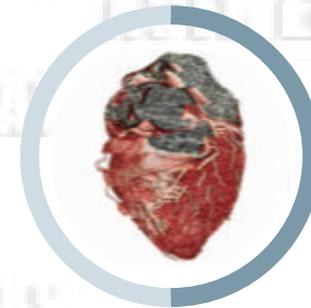
To increase temporal resolution, the conventional approach is a faster rotation speed that, at three rotations per second, has reached its current physical limit. A second approach is multisegment software reconstruction, where smaller data sets are acquired in consecutive

heart cycles. A potential increase of temporal resolution, however, strongly depends on the heart rate. In addition, as data sets of different heartbeats have to be added and coronary arteries move between each cardiac cycle, the resulting image loses quality.

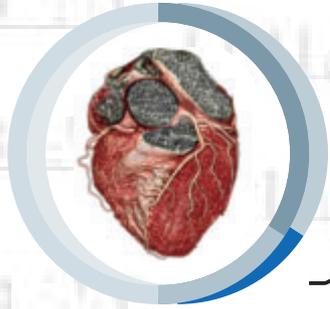
Dual Source CT, on the other hand, overcomes these limitations, as the two source/detector combinations simultaneously collect a data set of 90 degrees each during one heartbeat. Based on 0.33 s rotation time, this concept provides a heart-rate-independent temporal resolution of 83 ms.



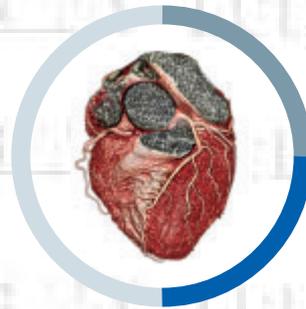
60 bpm single source CT



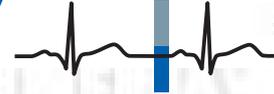
100 bpm single source CT



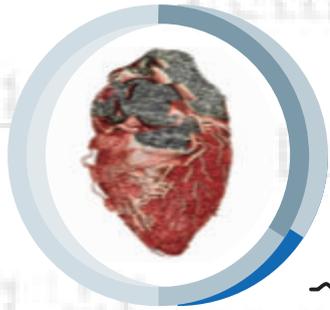
60 bpm multisegment reconstruction



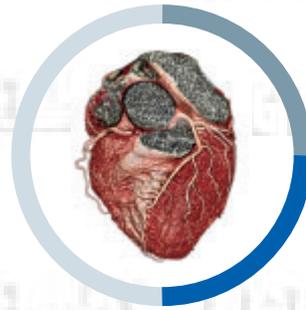
60 bpm Dual Source CT



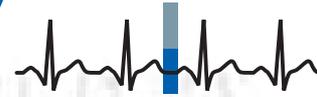
At a low and stable heart rate, the time a single source CT scanner needs for imaging is sufficient. Despite a possible higher temporal resolution of multisegment reconstruction, the result would not improve. The substantially higher temporal resolution of Dual Source CT, on the other hand, eliminates residual motion.



100 bpm multisegment reconstruction



100 bpm Dual Source CT



At higher or varying heart rates, the diastolic phase is too short for a single source CT scanner, resulting in poor image quality. Even multisegment reconstruction cannot meet the challenge adequately, as the acquired data sets needed for one image originate from different heart cycles. Dual Source CT, on the other hand, delivers sharp and detailed cardiac images at all heart rates.

### Single source CT

Cardiac CT image quality comparison of patient with varying heart rate between 86 bpm and 122 bpm.

#### Left:

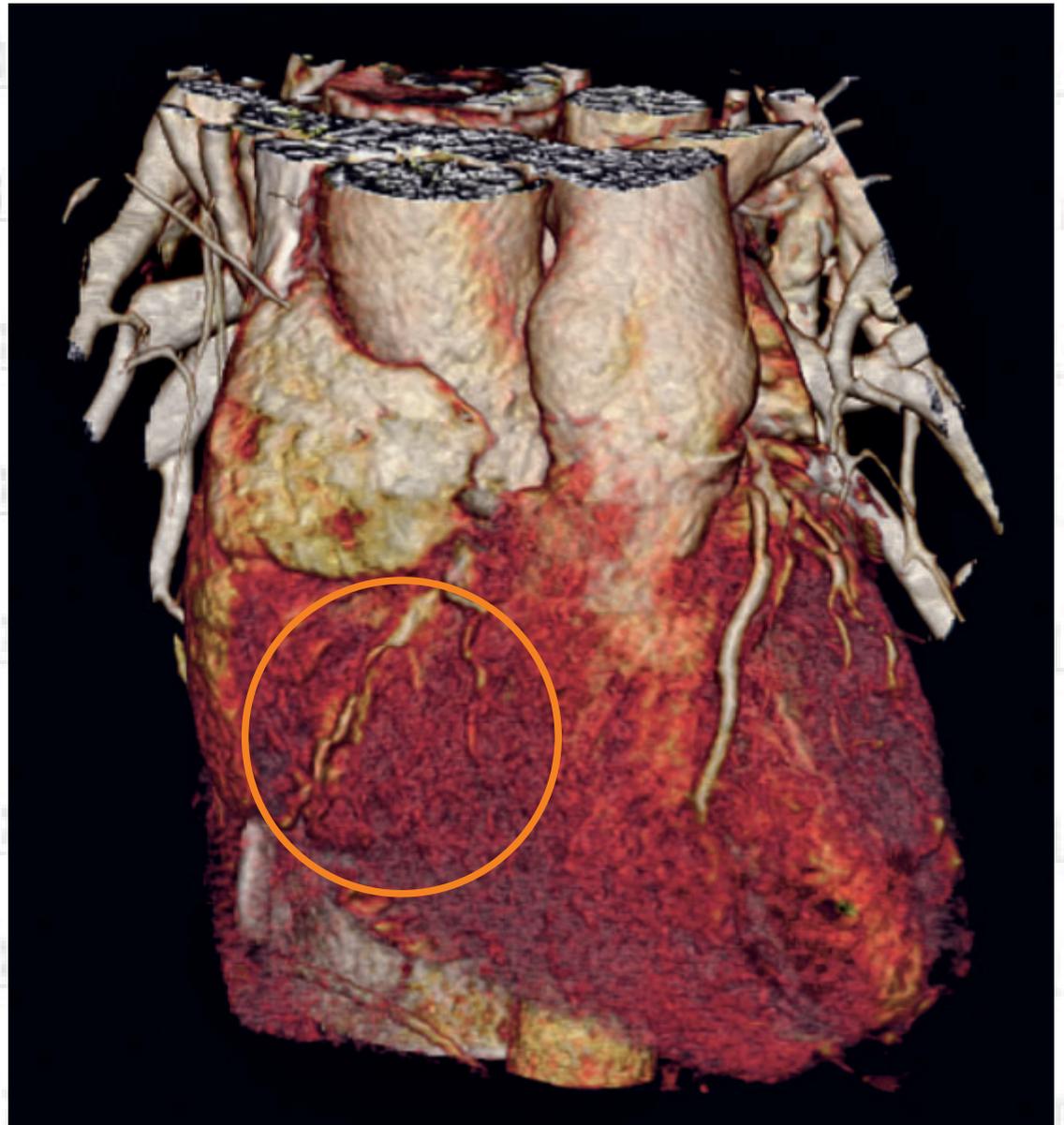
Limited temporal resolution of single source CT results in poor image quality. At a higher and varying heart rate, the insufficient image quality does not permit a diagnosis of the right coronary artery.

#### Middle:

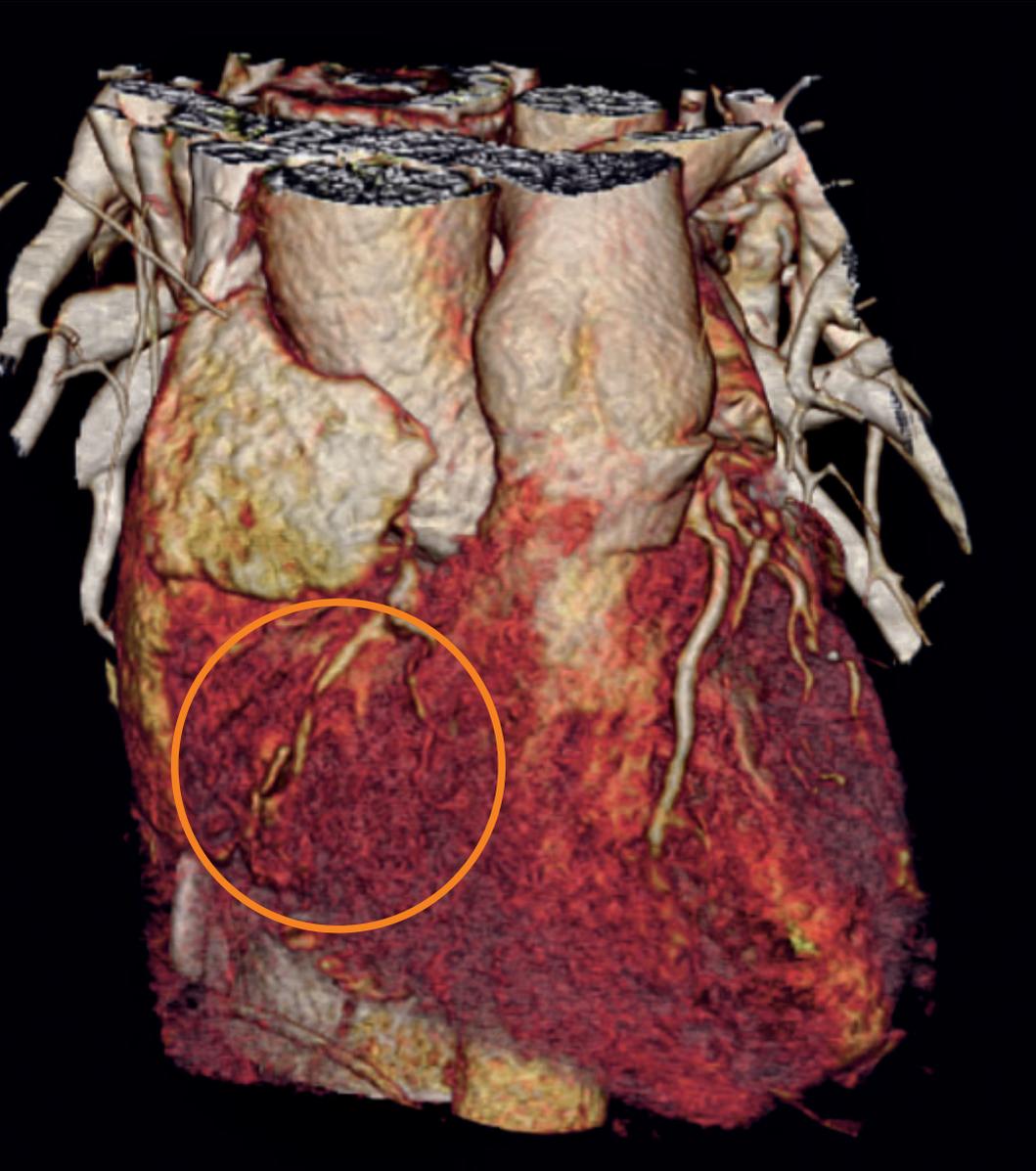
Multisegment reconstruction cannot improve the image quality adequately. The visualization of the right coronary artery is limited because the acquired data is collected from subsegment heartbeats.

#### Right:

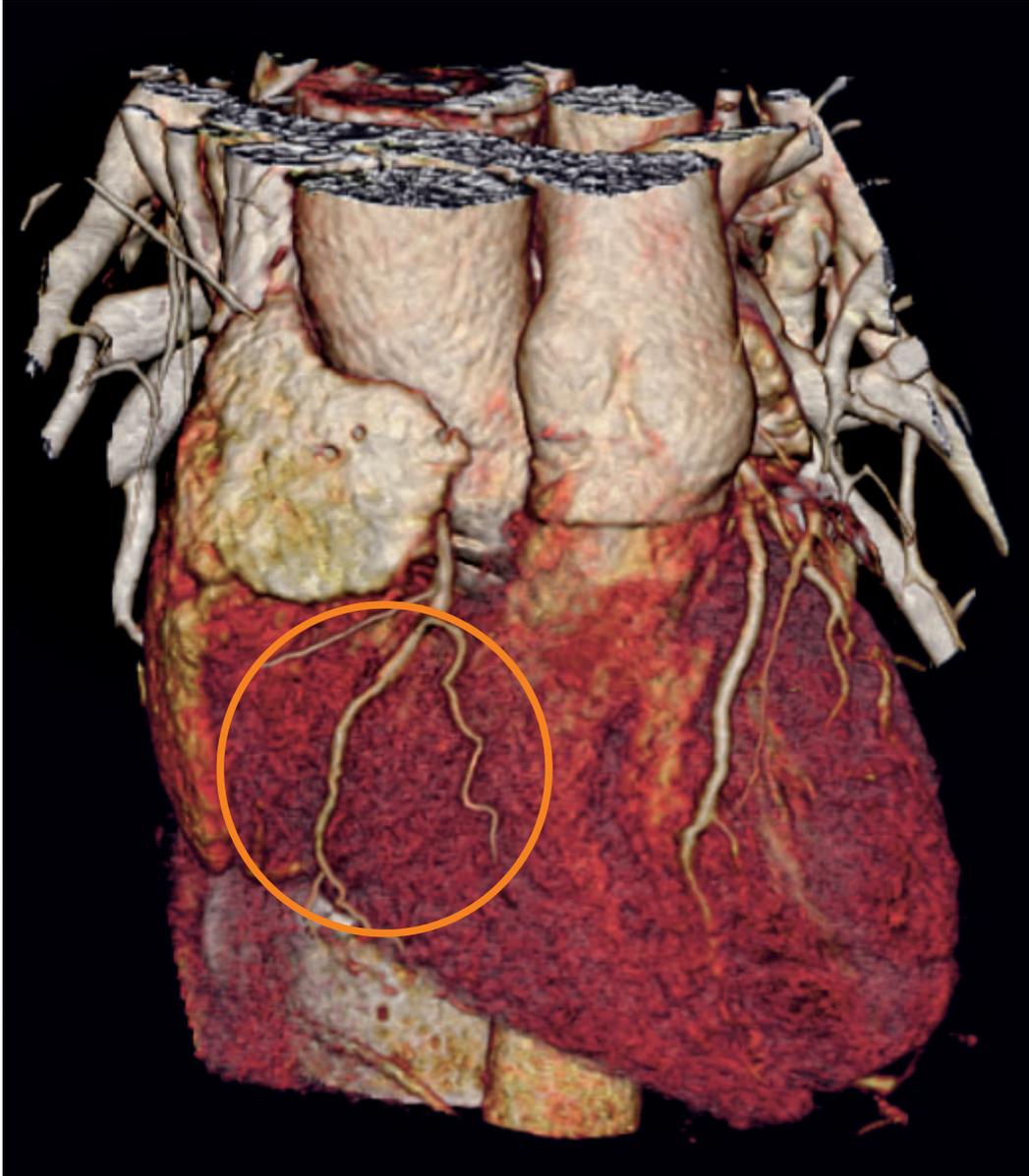
Dual Source CT's heart rate independent temporal resolution of 83 ms delivers sharp and motion free images even at high and unstable heart rates. Even the right coronary artery can be displayed with excellent image quality.



Multisegment reconstruction



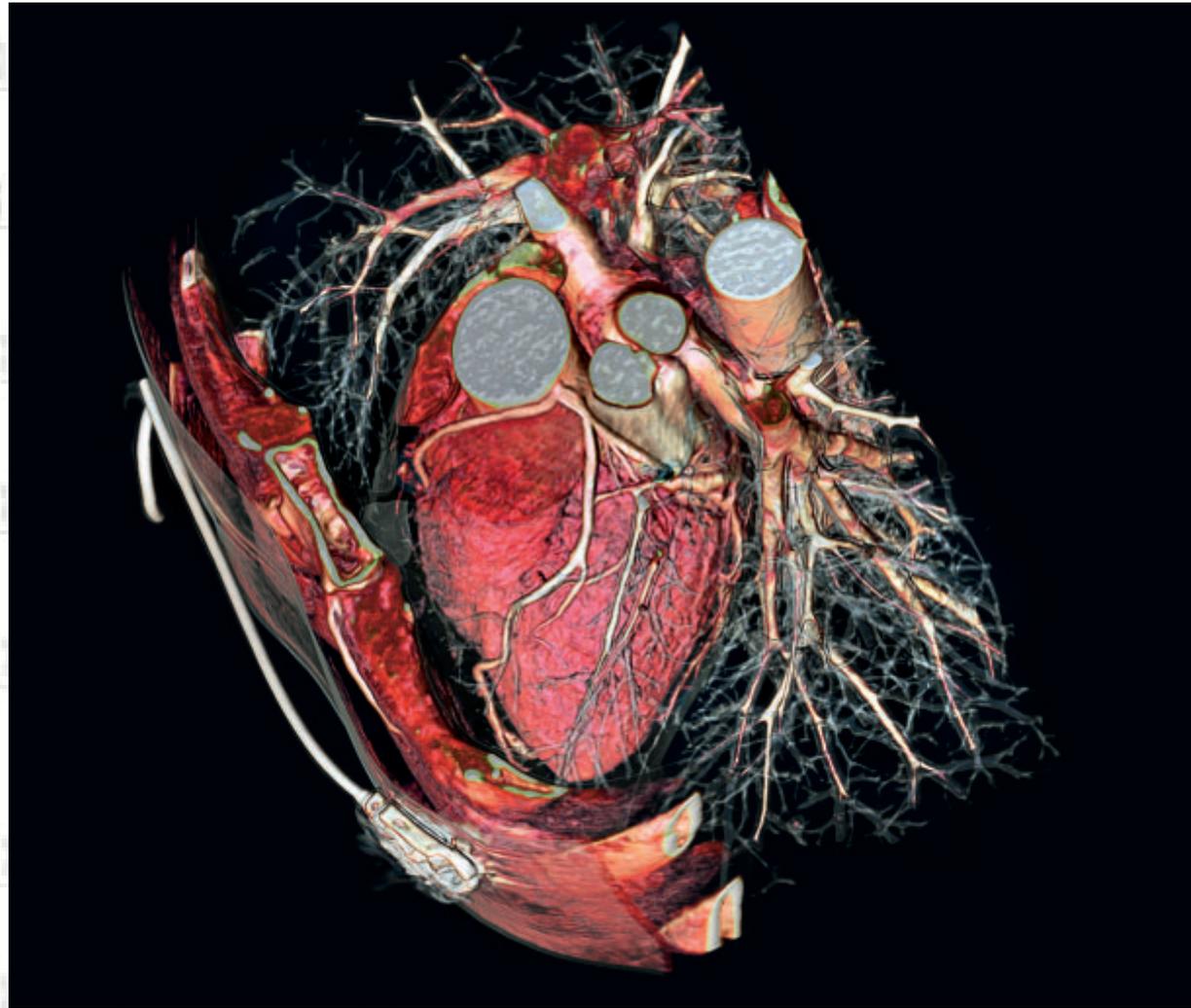
Dual Source CT

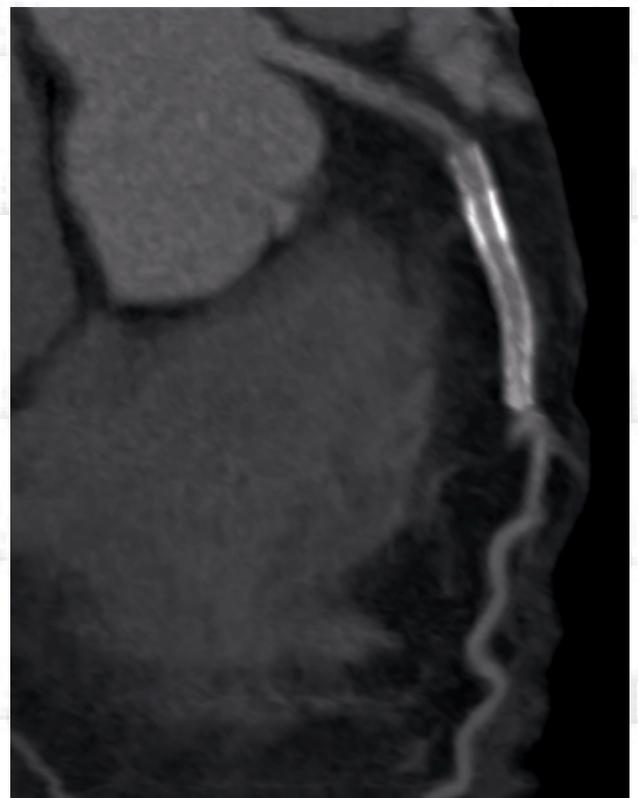
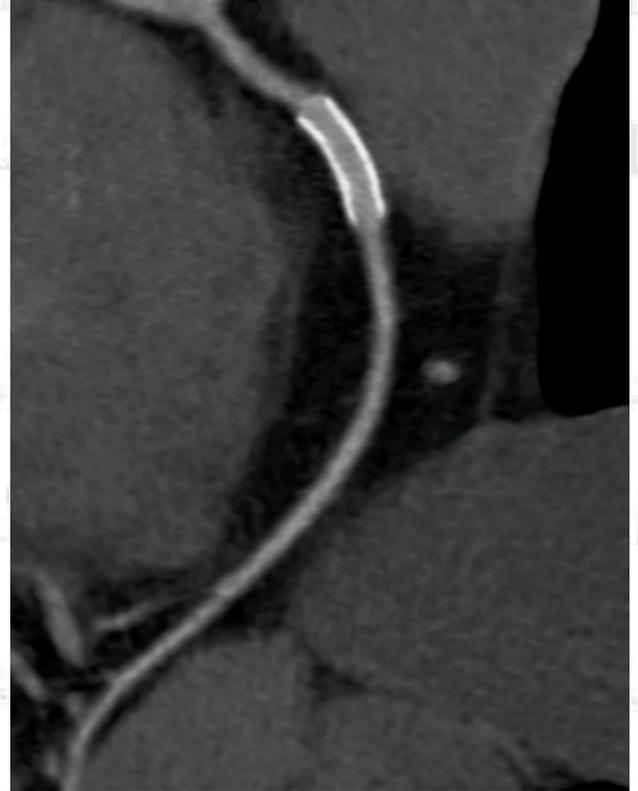
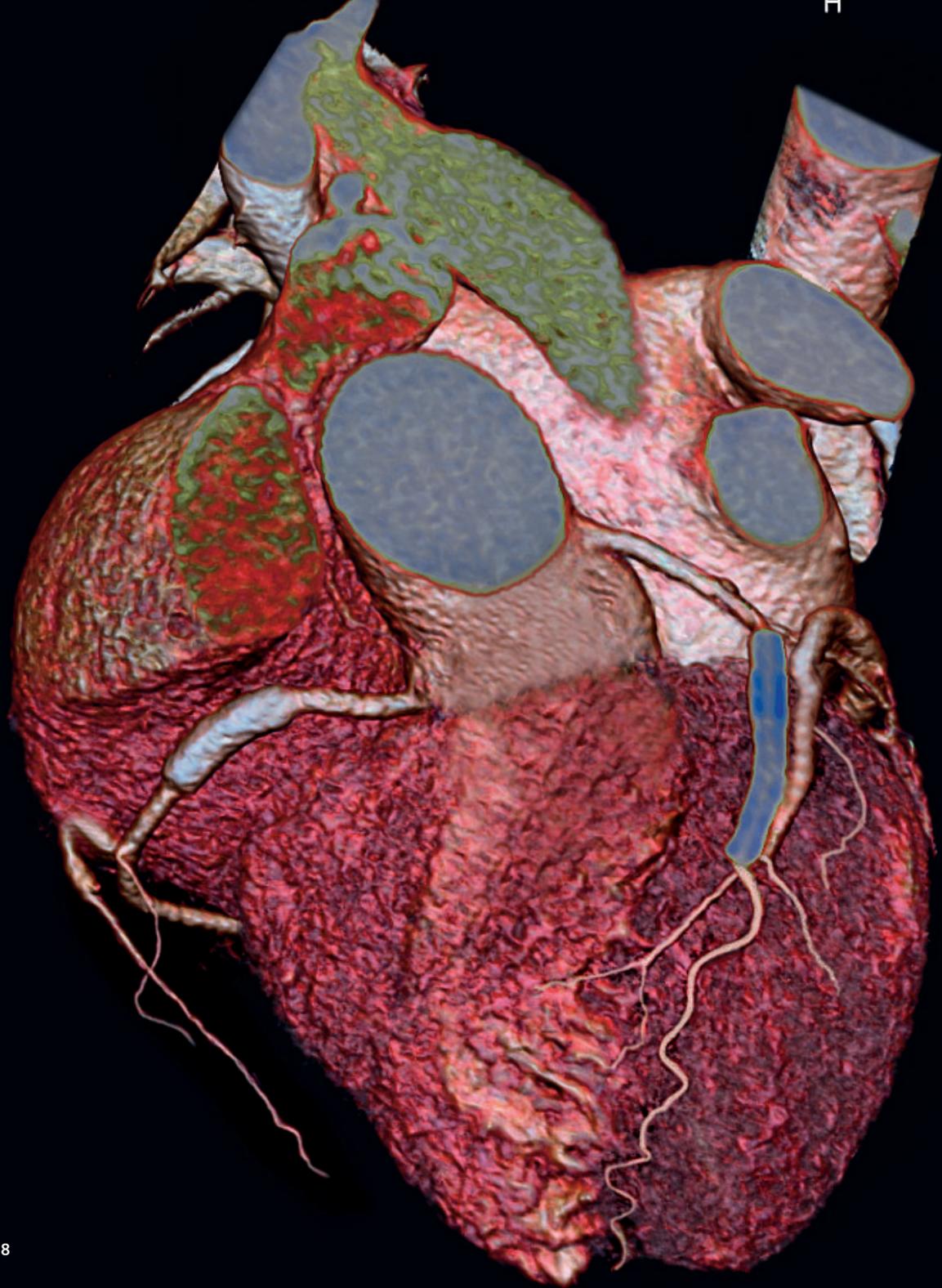




Excellent image quality of arrhythmic patient with a rapidly changing heart rate between 48 bpm and 93 bpm.

Despite high heart rate of 130 bpm, visualization of even smallest coronary arteries without any motion artifacts.





## Clinical Benefits

- 50%\* lower dose at typical heart rates compared with today's most dose-efficient, single source CT scanners.
- 5.5 msv at 80 bpm.\*\*

## Economic Benefits

- Competitive advantage, increasing attractiveness of your facility for both patients and referring physicians.

## Technical Benefits

- Adaptive ECG-Pulsing™, heartbeat-controlled dose modulation, reacts to any changes and abnormalities of the heartbeat in real time.
- Cardiac images are acquired in single heartbeats, no need for multisegment reconstruction.
- Adaptive table speed reduces acquisition time and dose at higher heart rates.

# Full Cardiac Detail at Half the Dose

The difference between wasted radiation and full cardiac detail at half the dose? Dual Source CT.

Lowest possible radiation is an important benefit for both you and your patients. With SOMATOM Definition, we have designed an exceptional solution that can deliver double the power, but needs only half the dose for cardiac applications – without any compromise in image quality.

As Dual Source CT images the heart twice as fast, our newly developed adaptive ECG-controlled dose modulation can apply the dose necessary for excellent cardiac imaging in less than half the time

compared to today's most dose-efficient single source CT scanners. In addition, Dual Source CT allows you to avoid the high-dose needs of multisegment reconstruction caused by imaging every position of the heart multiple times. Because SOMATOM Definition adapts the table speed according to the heart rate of the patient, cardiac dose is automatically reduced as heart rate increases.

By offering the lowest possible radiation exposure in cardiac CT, SOMATOM Definition helps you make a difference in patient care. A benefit all your patients will ask for.

Depends on system configuration.

\* Results may vary. Data on file.

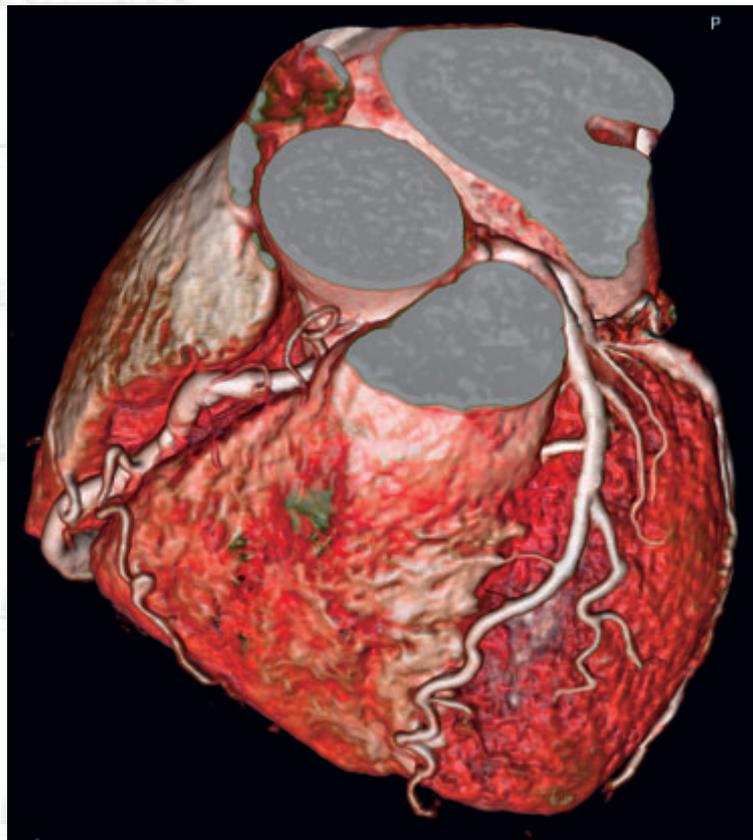
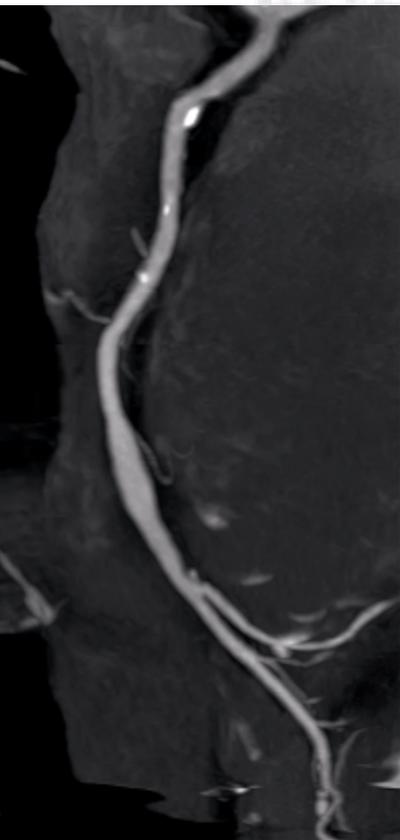
\*\* Typical regular heart rate of 80 bpm, 12 cm scan range, male patient, small ECG-Pulsing window.

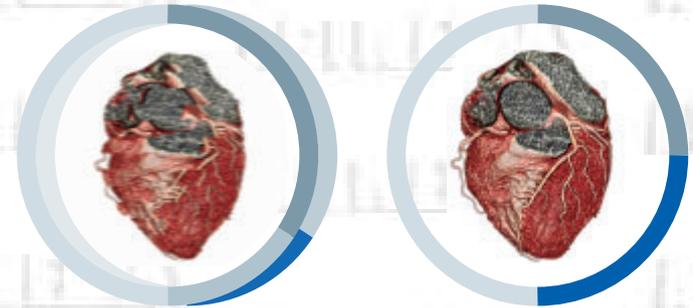
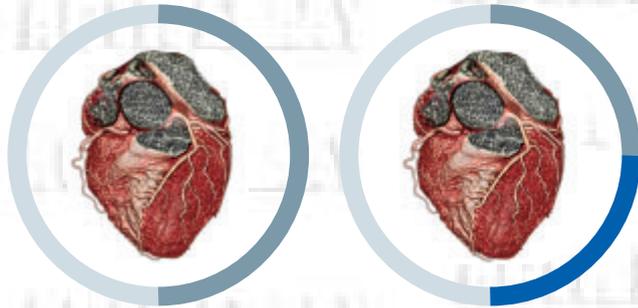
## How It Works

In cardiac CT, SOMATOM Definition uses two X-ray sources simultaneously, each one with conventional dose settings. The following two steps, however, can more than compensate the presumed doubling of exposure.

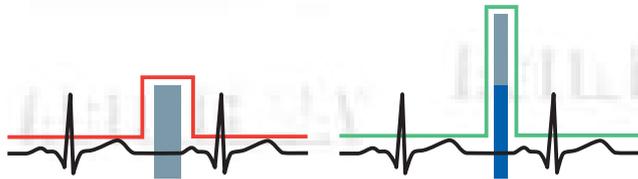
Adaptive ECG-Pulsing, our innovative heartbeat-controlled dose modulation, applies the exact dose necessary to collect data projections of 180 degrees during the diastolic phase. Its real-time monitoring of the ECG enables a fully automated dose adjustment, instantly reacting to changes and abnormalities of the heartbeat. Now that data collection is twice as fast with Dual Source CT, the time of high exposure during each heartbeat can be cut by more than half compared to single source CT scanners.

Instead of using multisegment reconstruction at higher heart rates, Dual Source CT's highest temporal resolution always allows you to acquire cardiac images from single heartbeats, at any heart rate. Unlike single source CT scanners, SOMATOM Definition automatically adjusts the table speed to the heart rate of the patient prior to the scan. It increases the pitch with higher heart rates, resulting in a faster table speed and a corresponding reduction of dose exposure. In other words, the higher the heart rate, the less time is required for imaging the heart, and consequently, lower dose is needed.





Heartbeat-controlled dose modulation

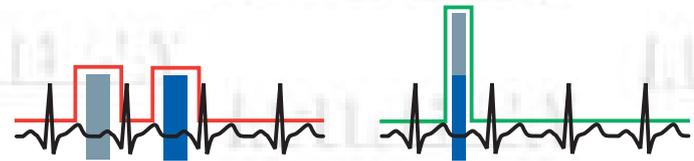


60 bpm single source CT

60 bpm Dual Source CT

Using two X-ray sources at the same time doubles the dose, but reduces the ECG-pulsing window by more than half. The result is higher temporal resolution although the dose applied does not exceed the dose of single source scanners.

Heartbeat-controlled dose modulation



100 bpm multisegment reconstruction

100 bpm Dual Source CT

To overcome insufficient temporal resolution at high heart rates, single source CT scanners use multisegment reconstruction resulting in high dose and limited reliability. Dual Source CT, on the other hand, always acquires cardiac images from single heartbeats. Therefore, it can automatically adjust the table speed to the heart rate of the patient. The result: the higher the heart rate, the less dose is needed.

## Clinical Benefits

- Immediate one-stop diagnosis of patients in critical condition.
- Accurate triage of chest-pain patients within 10 minutes.
- Easy routine scanning regardless of size and condition of patients.

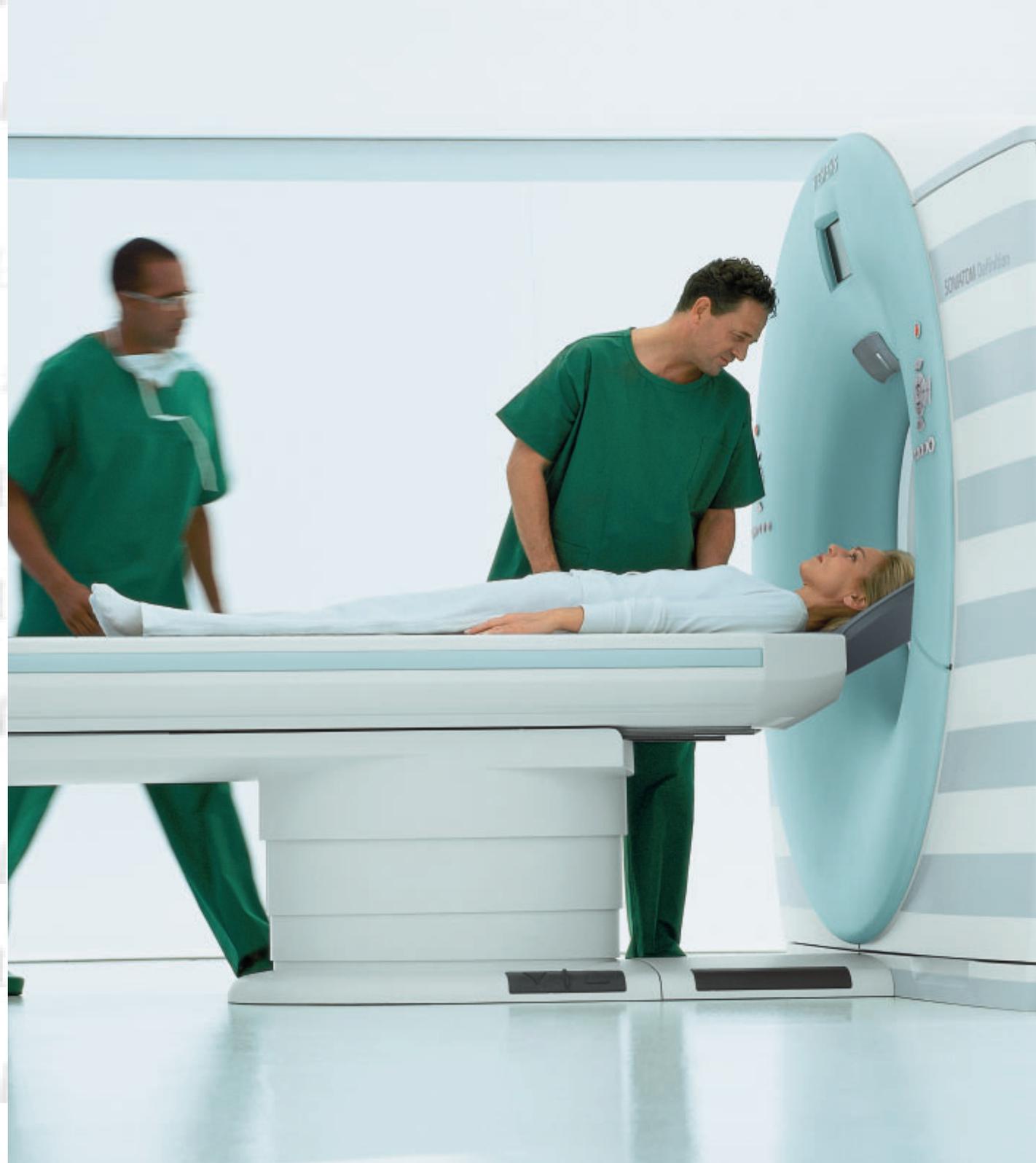
## Economic Benefits

- Reduced diagnostic time and length of stay.
- Reduced cost of care, less staff required.
- Higher throughput as no beta-blockers are needed.
- Access for all patients, up to 200 cm/220 kg (79"/485 lbs).

## Technical Benefits

- Up to 160 kW power, 78 cm (31") gantry bore and FOV, 200 cm (79") scan range.
- Industry's fastest submillimeter coverage of up to 87 mm/s.
- Industry's highest spatial resolution of 0.33 mm.
- Industry's highest heart-rate-independent temporal resolution of 83 ms.

Depends on system configuration.



# One-Stop Diagnosis in Acute Care

**The difference one-stop diagnosis makes in acute care? Fast results when every second counts.**

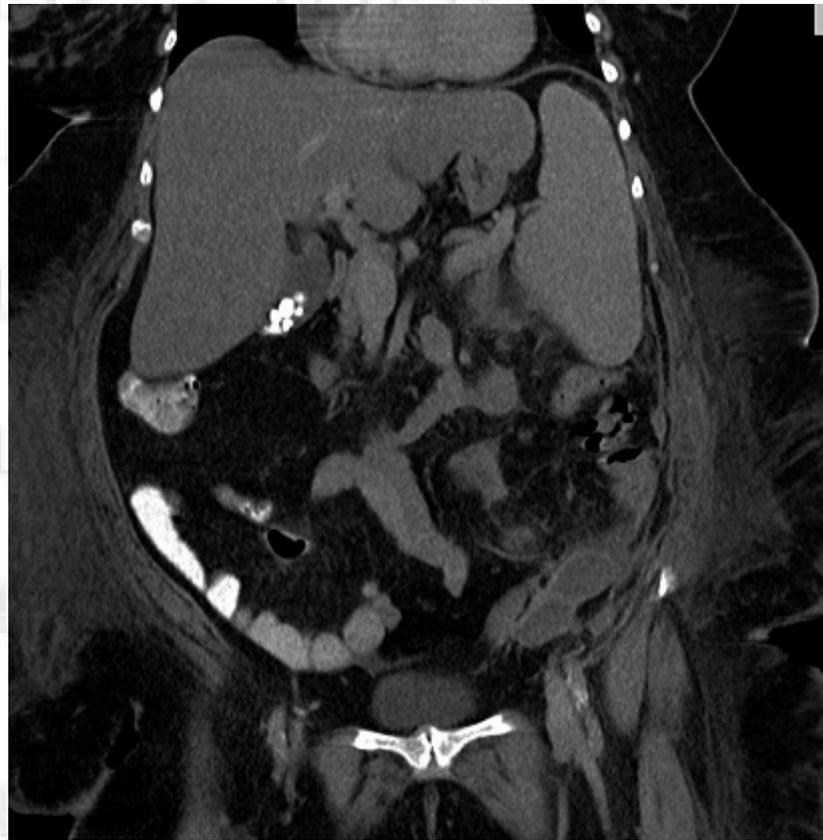
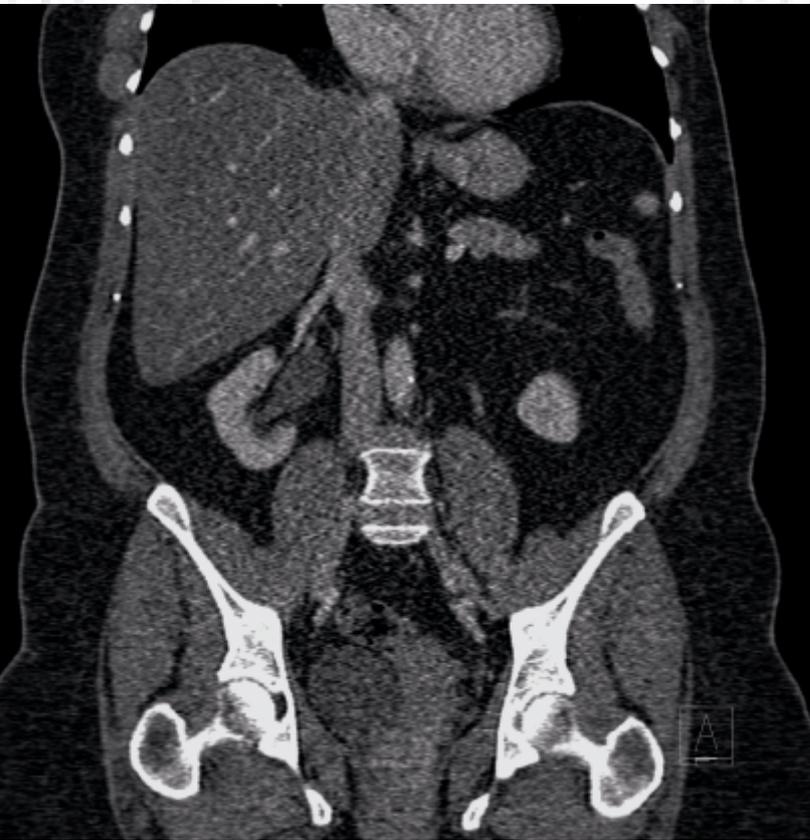
In acute care, it is vital that you achieve a confident diagnosis for every patient as fast as possible. When utilizing several diagnostic modalities, however, diagnoses in acute care can be very time consuming and expensive.

SOMATOM Definition is the first CT scanner offering a solution for acute care without compromise, simplifying and speeding up your workflow. Combining a total of 160 kW power, Dual Source CT turns scanning obese patients into easy daily routine. Moreover, it lets you examine uncooperative patients, patients short of breath or with high heart rates – quickly and without restriction.

Chest pain, for instance, is one of the most common and complex symptoms for which patients seek medical care. With standard diagnostic evaluation, patients with chest pain undergo multiple serial tests and long observation periods. This ties up your staff as well as space for up to a whole day. Dual Source CT enables you to quickly rule out the major causes of chest pain such as myocardial infarction, pulmonary embolism, and aortic dissection in a one-stop diagnosis without the compromise of beta-blockers. Now you can accurately triage chest-pain patients within 10 minutes after presenting to ER.

Using a single source CT scanner, obtaining a perfect image is challenging when scanning patients in critical condition. SOMATOM Definition makes a difference by enabling you to easily master complex acute care examinations in one go.

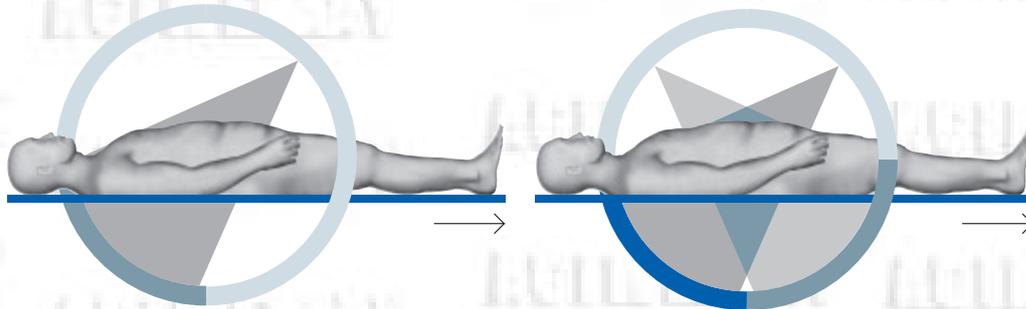
Depends on system configuration.



When imaging obese patients at a high table speed necessary for pure arterial scanning, even a state-of-the-art single source CT scanner may not have sufficient power.

Dual Source CT, on the other hand, delivers sharp and detailed images at any scan speed, as it accumulates the power of two independent sources.

# How It Works



Scanning obese patients with single source CT usually results in a trade-off between speed and image quality. Dual Source CT overcomes this limitation of insufficient power because it utilizes a second X-ray source. In other words, it accumulates the power of the two independent sources resulting in an unprecedented 160 kW, providing sufficient X-ray power reserves for high quality imaging of patients whether tall or small, thin or large – at maximum volume coverage speed and fastest rotation time. And because scan speeds can be increased, the higher power is used to improve quality, while dose remains the same as in single source CT. In combination of the large bore and the long scan range of the SOMATOM Definition, positioning of critical patients becomes an easy routine.



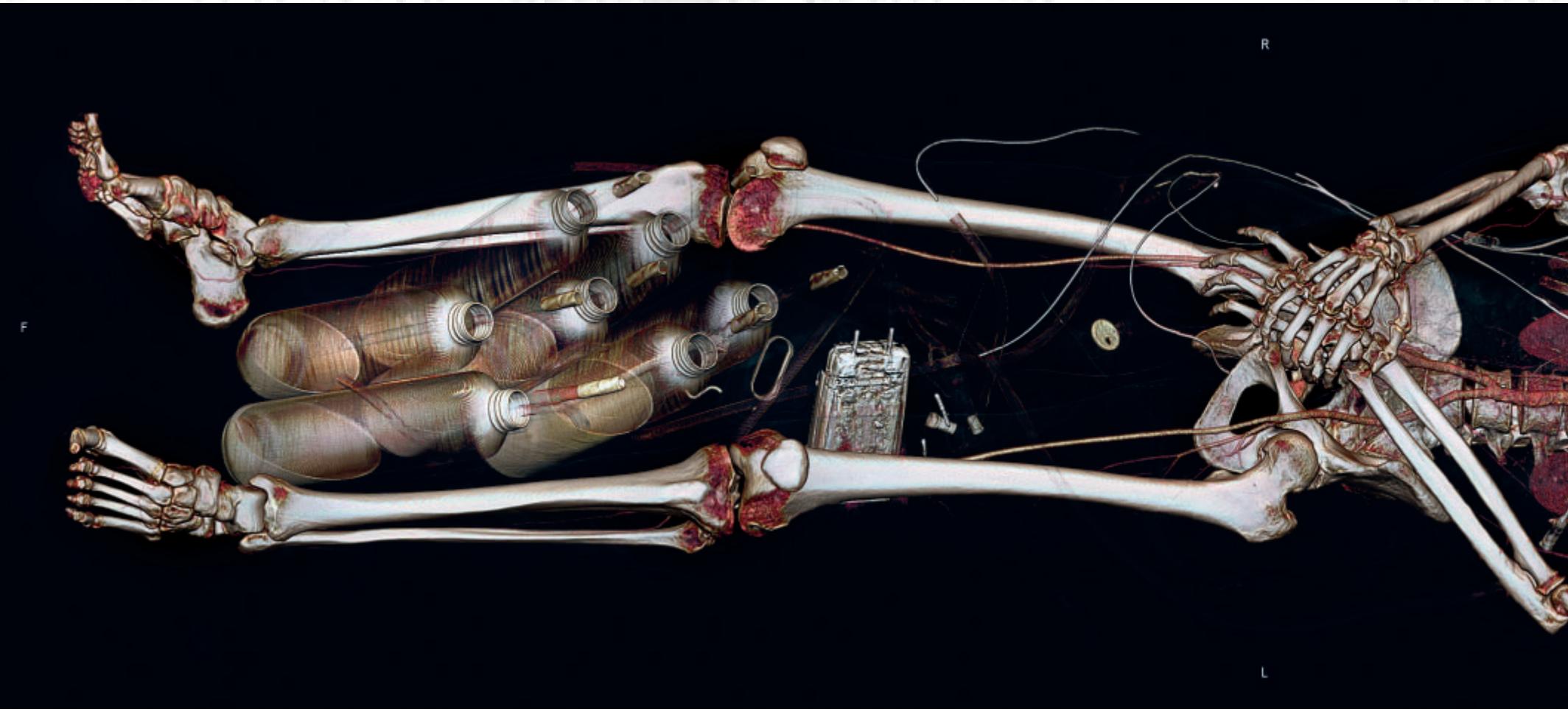
**Single source CT with limited kW**

Insufficient power for high-speed scanning of obese patients.

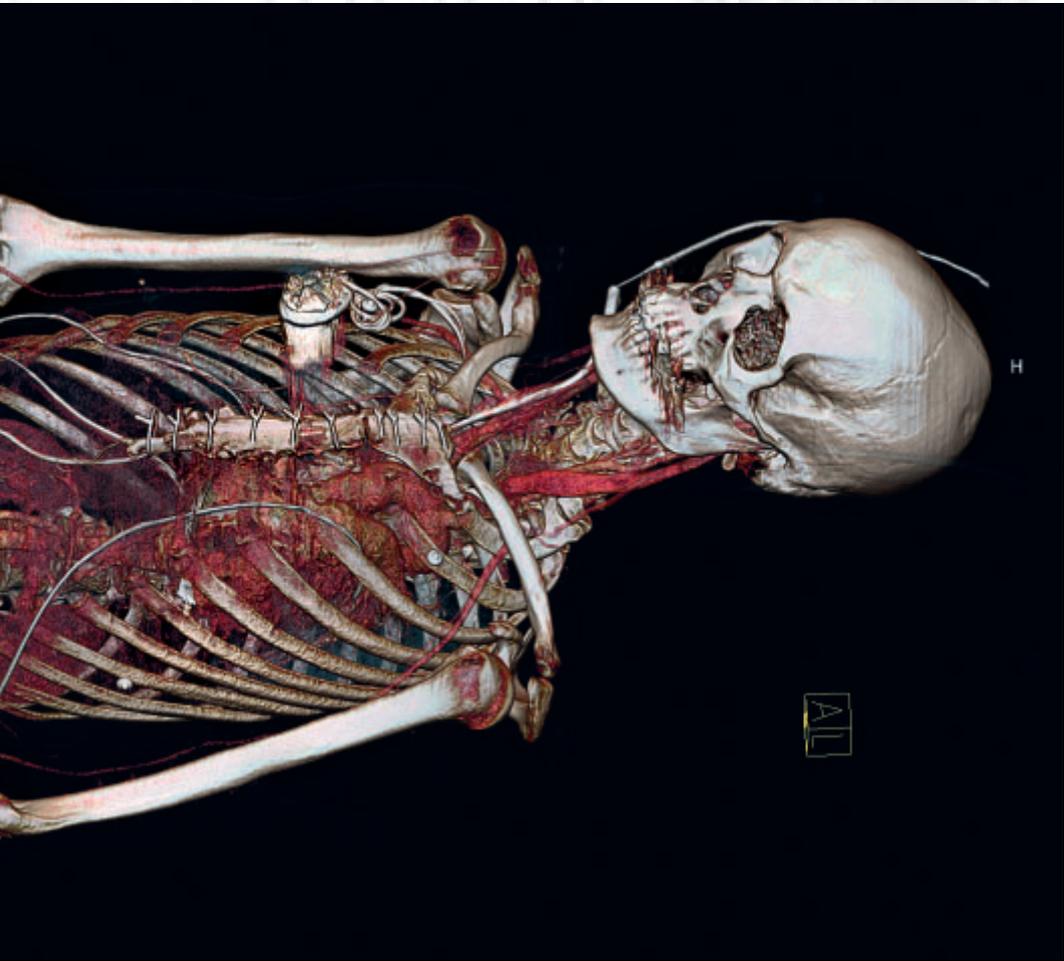


**Dual Source CT with 160 kW**

Dual Source CT accumulates the power of two separate sources resulting in unprecedented 160 kW.



Fast visualization of the complete human anatomy  
(1889 mm) in only 42 seconds, with industry's  
highest isotropic resolution of 0.33 mm.

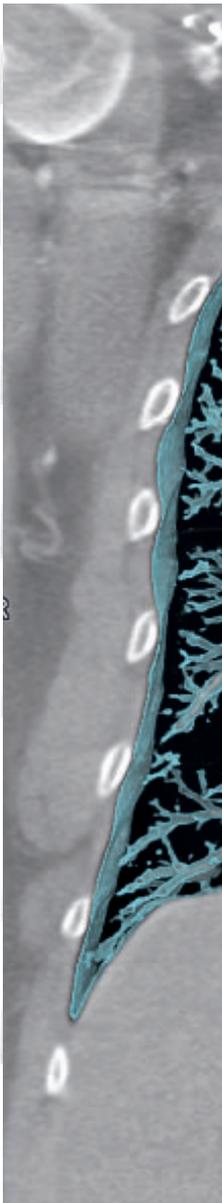
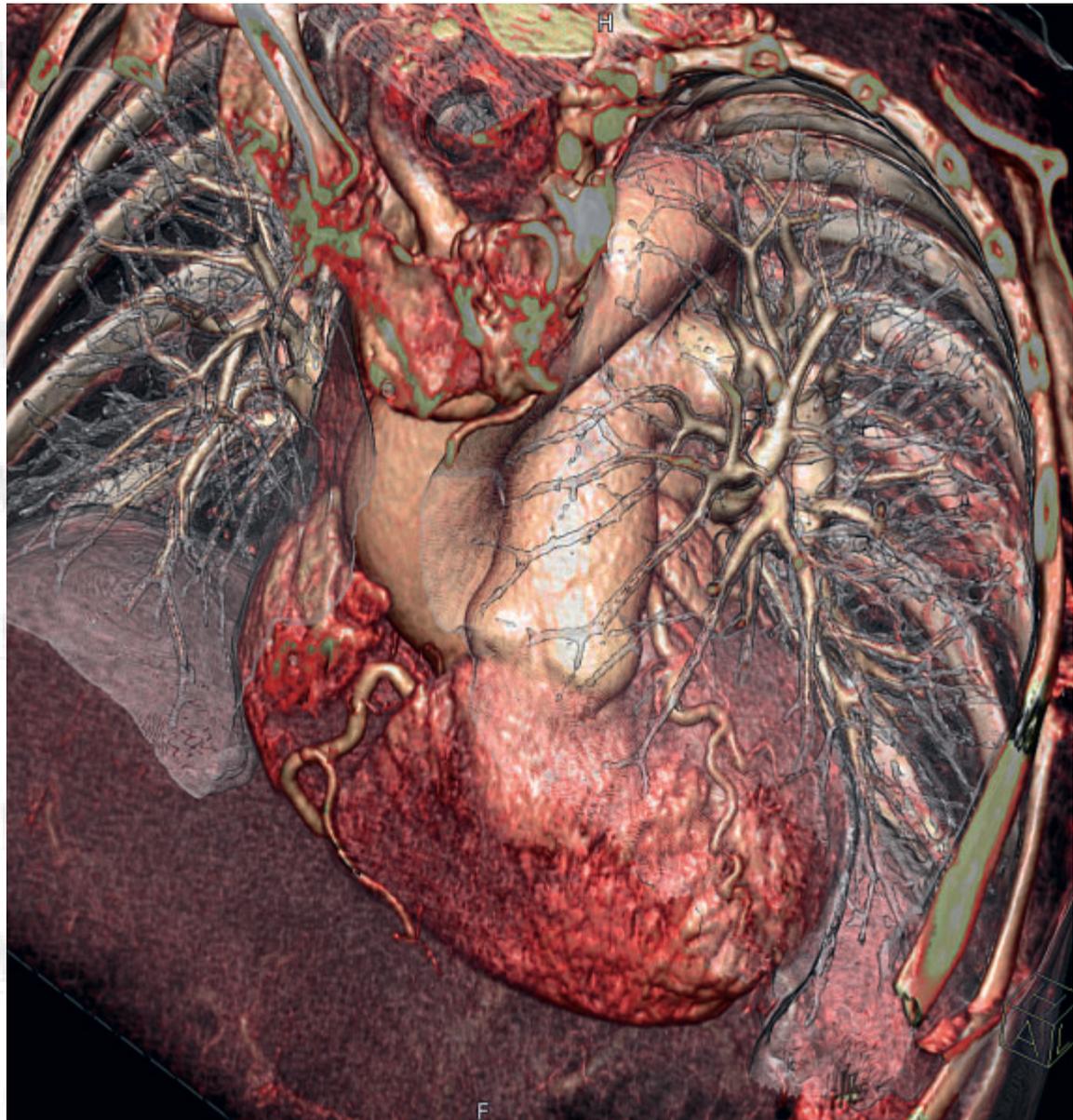


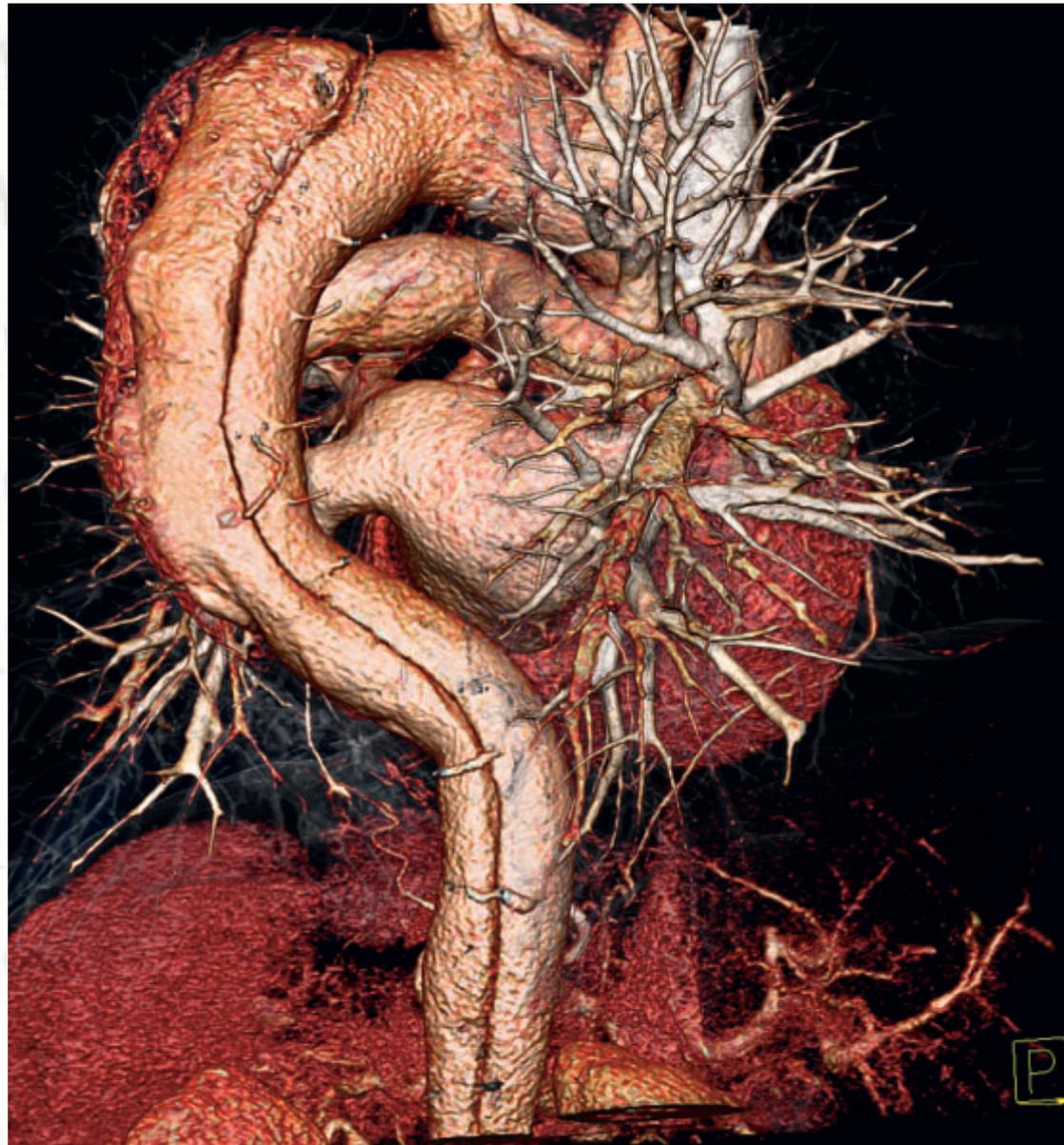
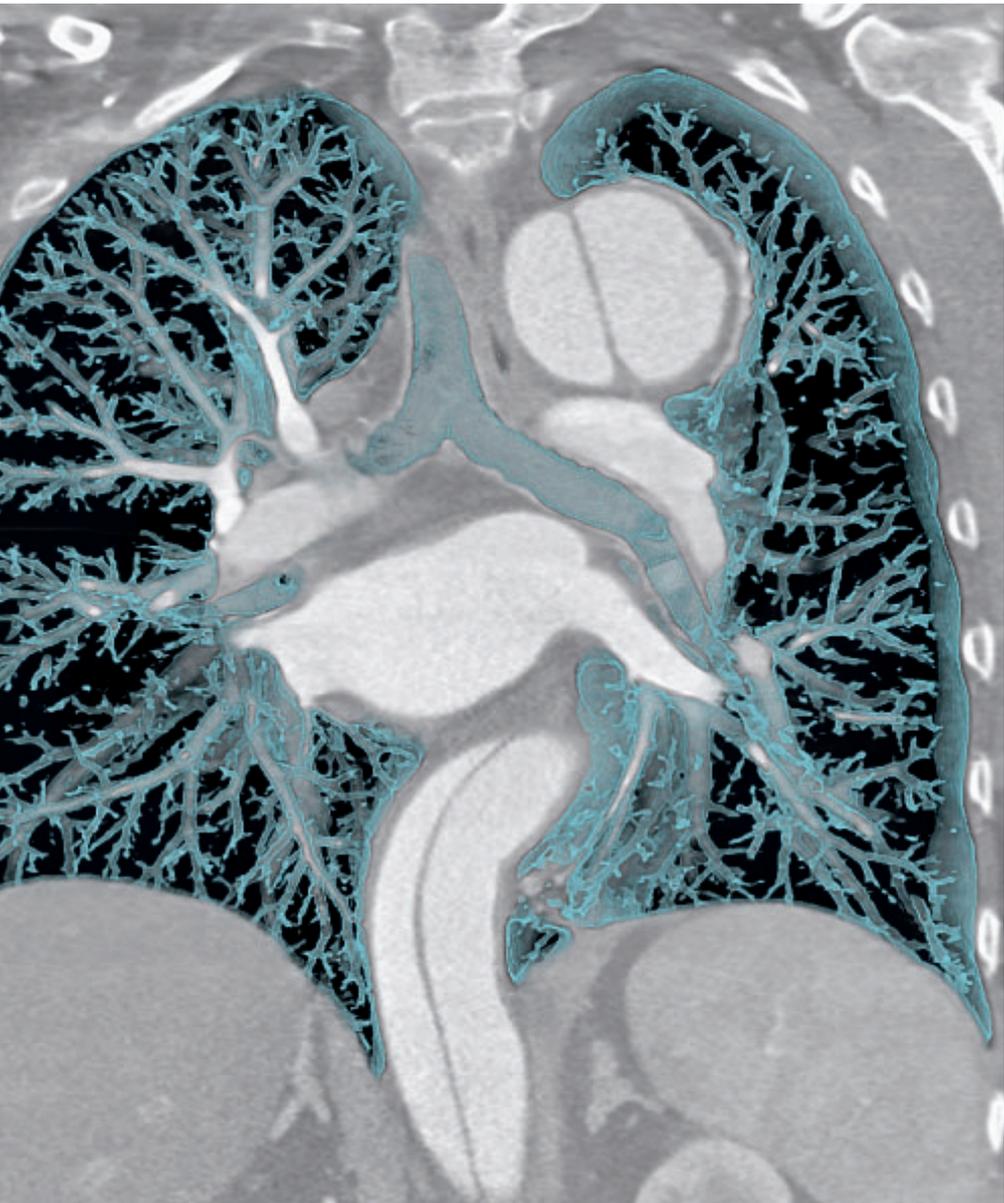
Acute care chest pain evaluation in one scan without the compromise of beta-blocker.

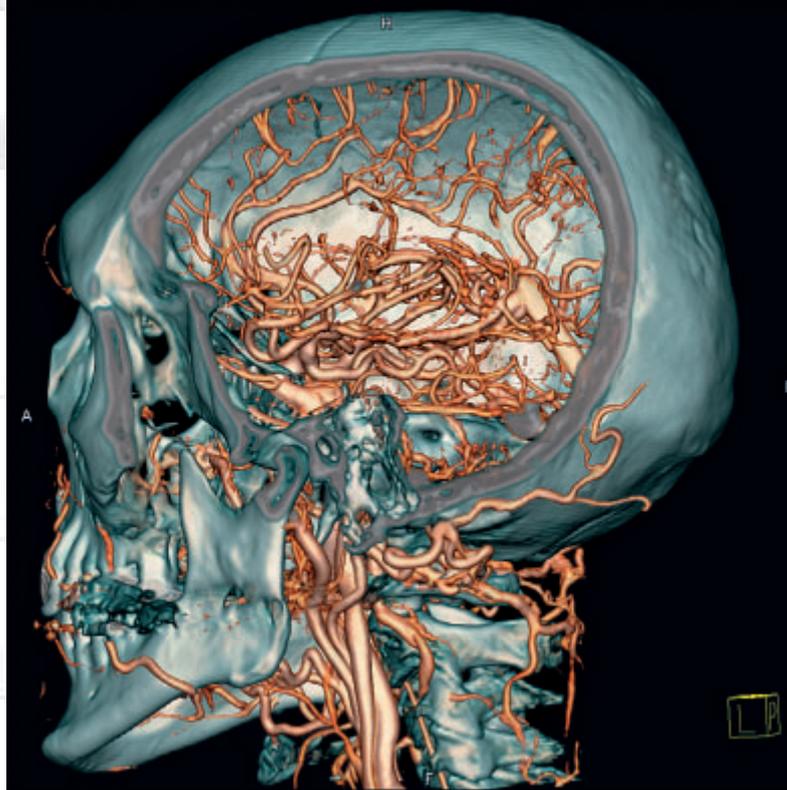
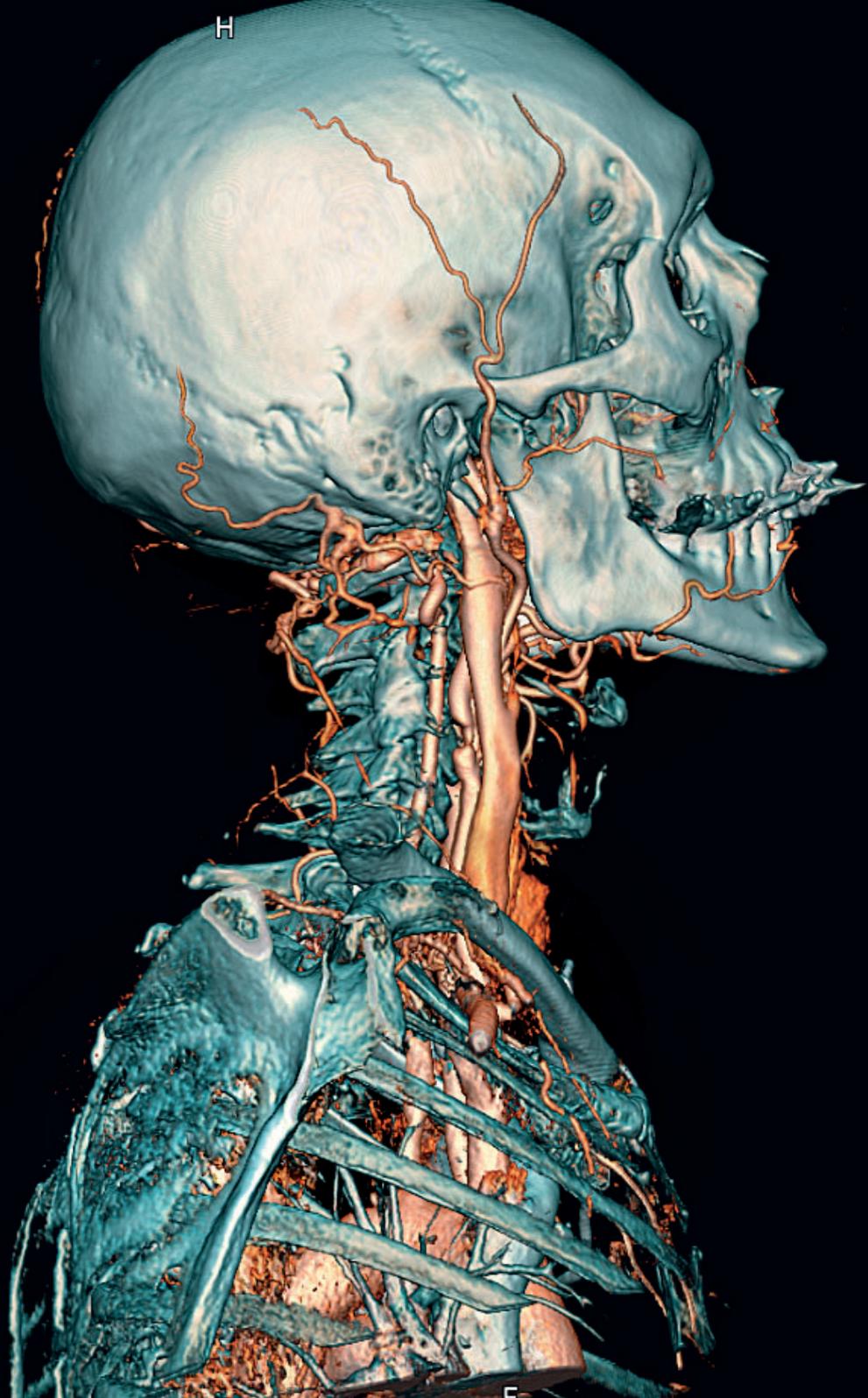
**Left:**  
Motion free visualization of coronary arteries, rule out myocardial infarction.

**Middle:**  
Accurate display of pulmonary arteries, rule out pulmonary embolism.

**Right:**  
Excellent imaging of patient's aorta, Stanford type B aortic dissection can be precisely shown.







# Beyond Visualization with Dual Energy

## The difference between sequential imaging and going beyond visualization? Spiral Dual Energy.

It has always been an aim to collect as much information as possible for differentiation of tissues. Providing spiral dual energy scanning, SOMATOM Definition opens the door to a new world of characterization, visualizing the chemical composition of material.

The idea of dual energy is not new to the CT community. Earlier approaches, including two subsequent scans at different tube voltages or two subsequent scans at the same position, failed to seamlessly align the imaged anatomy. SOMATOM Definition overcomes this limitation by permitting the use of two sources at two different kV levels simultaneously. The result are two spiral data sets acquired in a single scan providing diverse information, which allows you to differentiate, characterize, isolate, and distinguish the imaged tissue and material.

Many applications are already available for daily clinical use, such as an accurate subtraction of bone in CTAs and iodine removal from liver scans generating a virtual unenhanced image. What's more, potential new applications will continuously increase the clinical value of spiral Dual Energy, for example characterization of plaques in coronary vessels or classification of tumors in oncology.

By enabling not only faster and more reliable diagnoses, but also by further broadening the application spectrum of CT, spiral Dual Energy makes a difference for everybody's daily work.

Depends on system configuration.

## Clinical Benefits

- Direct subtraction of bone even in complicated anatomical regions.
- Virtual unenhanced liver image.
- Evaluation of lung perfusion defects.
- Visualization of cartilage, tendon, and ligament.
- Kidney stone characterization.
- Differentiation between hard plaques and contrast agent.

## Economic Benefits

- Additional revenue through new applications.
- Higher efficiency due to faster diagnoses.
- Higher diagnostic security through additional information.
- Time-savings by eliminating manual postprocessing steps.

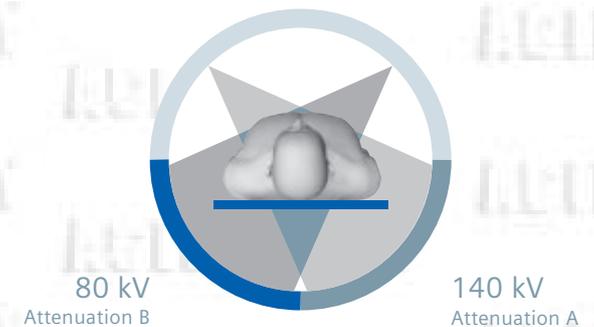
## Technical Benefits

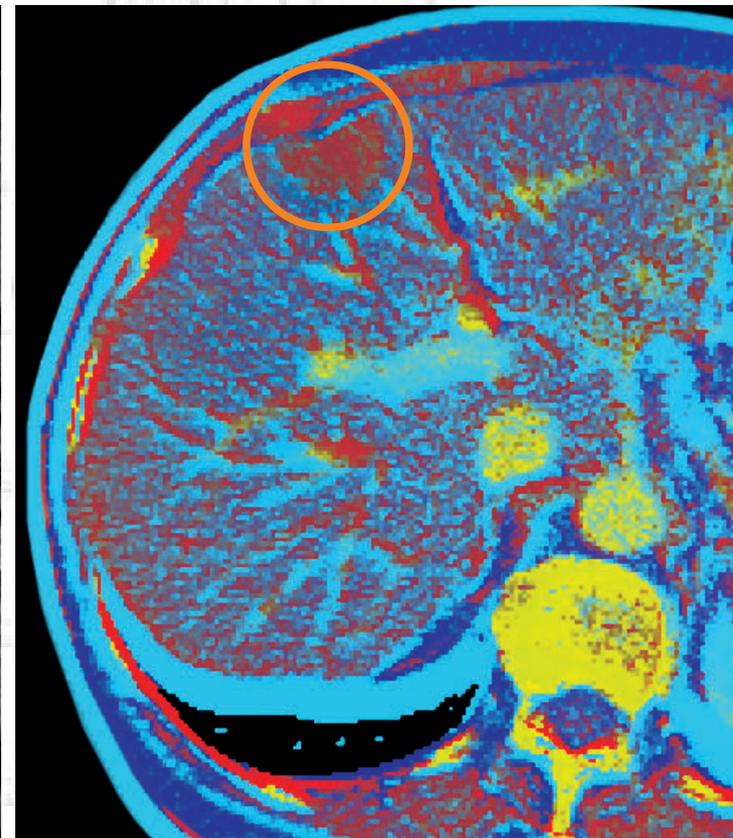
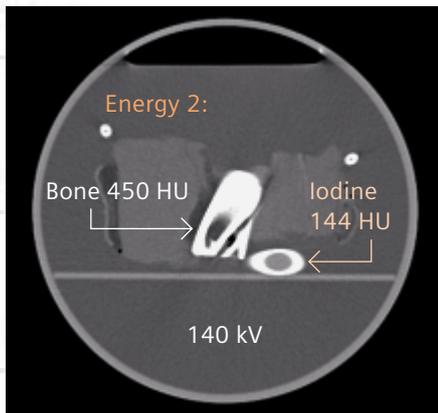
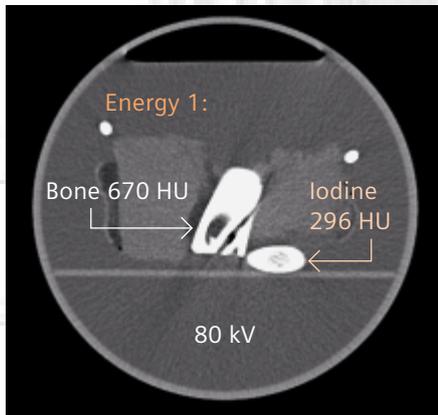
- Simultaneous acquisition of two data sets at different kVs.
- Spiral Dual Energy acquisition in one scan.
- Upgradeable dual energy software application.

# How It Works

The X-ray tube's kilo voltage (kV) determines the average energy level of the X-ray beam. Changing the kV setting results in an alteration of photon energy and a corresponding attenuation modification of the materials scanned. In other words, X-ray absorption is energy-dependent, e.g. scanning an object with 80 kV results in a different attenuation than with 140 kV. In addition, this attenuation depends also on the type of tissue scanned. Iodine, for instance, has its maximum attenuation at low energy, while its CT-value is only about half in high-energy scans. The attenuation of bones, on the other hand, changes much less when exposed to low-energy scans compared to high-energy voltage examinations.

Spiral Dual Energy exploits this effect: Two X-ray sources running simultaneously at different energies acquire two data sets showing different attenuation levels. In the resulting images, the material-specific difference in attenuation enables an easy classification of the elementary chemical composition of the scanned tissue. In addition, a fused image is provided for initial diagnosis.



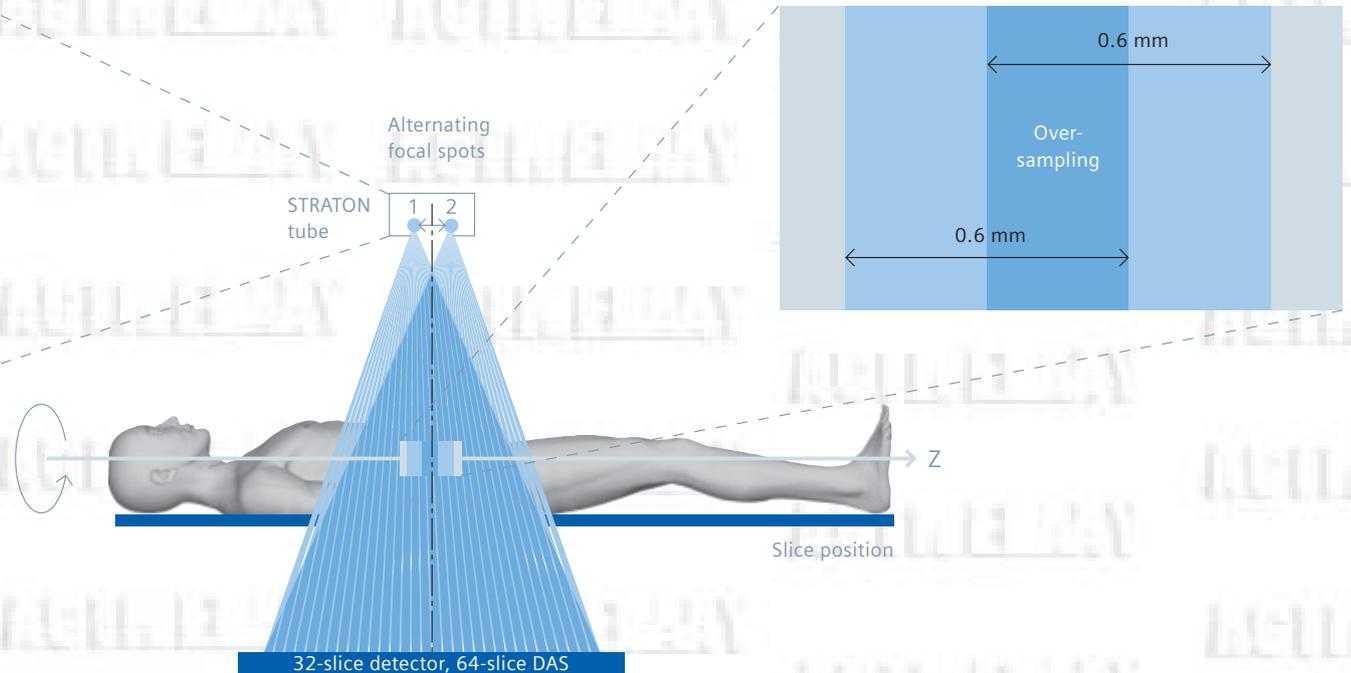
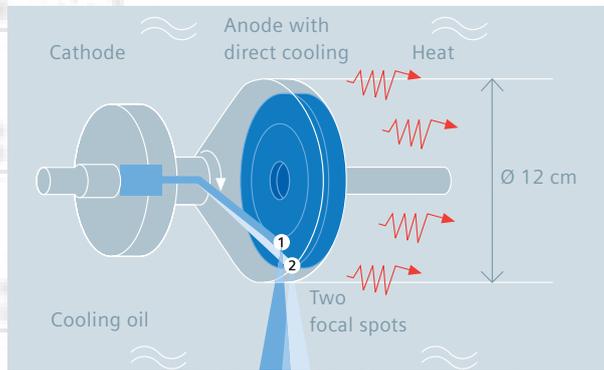


Because X-ray absorption is energy-dependent, changing the tube's kilo voltage results in a material-specific change of attenuation.

Using a single source CT scanner, diagnosing the circled area becomes difficult, as insufficient information does not allow a differentiation between different tissue types.

Dual Source CT, on the other hand, enables you to easily differentiate tissue types. This lesion could be identified as a lipid degeneration, color-coded in dark red.

# The Underlying Technology

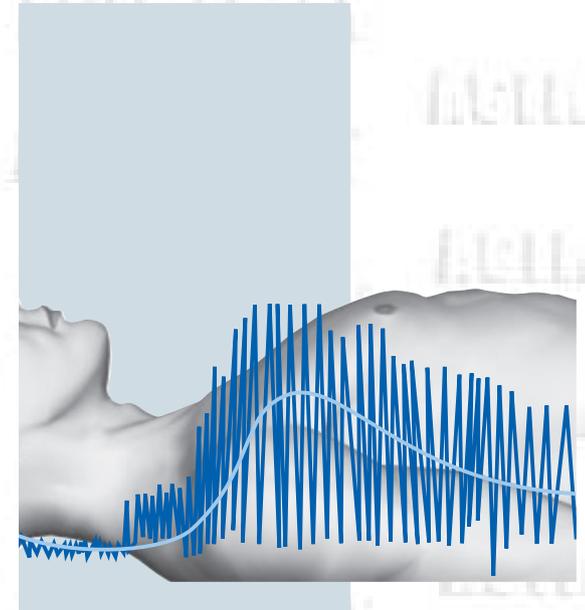
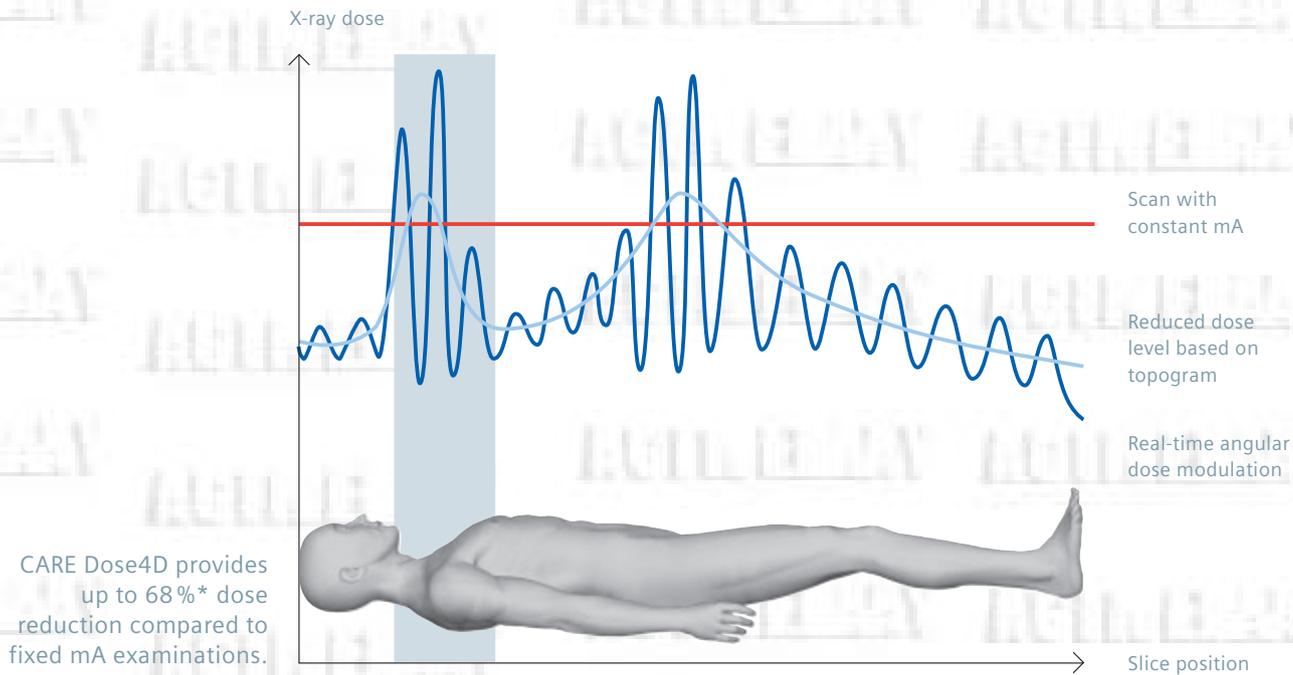


z-Sharp Technology provides the industry's highest isotropic resolution of 0.33 mm at any scan and rotation speed, and at any position within the scan field.

## Unprecedented Image Quality and Detail

Siemens' proprietary technology provides CT images with previously unknown sharpness, diagnostic detail, clarity, and speed. The direct anode cooling of the STRATON® X-ray tube eliminates the need for heat storage capacity, permitting a smaller tube size and thus resulting in the industry's fastest gantry rotation time of 0.33 seconds.

Its revolutionary design is also the basis for z-Sharp™ Technology, which significantly increases resolution without a corresponding increase in dose. In addition, z-UHR Technology pushes the boundaries of ultra-high spatial resolution to unparalleled 0.24 mm isotropic detail.



### The Lowest Exposure

The desire for as little radiation exposure as possible lies at the heart of our CARE philosophy, providing a wide range of dose-reduction solutions. Saving dose starts right at the point where image data is acquired – the Ultra Fast Ceramic (UFC™) detectors. These highly efficient detectors require the smallest possible amount of dose to deliver exceptional image quality – even at low mA settings.

Another example is our CARE Dose4D™, an unparalleled combination of maximum image quality at minimum dose. Because every patient is unique in terms of size, weight, and anatomy, we developed a fully automated dose management system. The tube current is adapted in real time and according to the anatomy of each individual patient's organ.

\* Results may vary. Data on file.

Elliot K. Fishman,  
Director Diagnostic  
Radiology and Body CT,  
The Johns Hopkins Hospital,  
Baltimore, USA

“In my opinion, what makes Siemens CT so special, is the seamless integration of high image quality with superb clinical workflow.”





# Workflow without Limitations

To support you in tuning your working rhythm, we complement our CT scanners with comprehensive software solutions, such as *syngo* WebSpace, our CT Clinical Engines, and powerful workstations. Powered by *syngo*, our intuitive user interface, they offer familiar tools and icons to support easy operation – without the need for extensive training.

Would you like to prepare the next patient while the first one is scanned, and have immediate access to the patient data on a second workplace? We harmonize your planning, patient preparation, scanning, and reconstruction with a second CT Workplace. Due to a shared data base with your *syngo* Acquisition Workplace and a virtually zero delay availability of thin slice data everywhere\* you need it, you can optimize your workflow and obtain a high patient throughput.

You know these situations: you are at home and on call. A colleague needs your expertise. Wouldn't it be great to simply plug in your laptop and log on to the hospital server from your home? Next scenario: at the hospital, all workstations are occupied during peak times. What about working on your case immediately on your laptop – in your office, on the ward or even in the cafeteria? With *syngo* WebSpace, you can access data from everywhere.\*

Or imagine a cardiac examination. Wouldn't it be great if you had all the tools necessary for a confident diagnosis at hand? And if you could show a colleague who is sitting on a different floor the data for second opinion in real time with neither of you having to leave his/her desk? Our CT Clinical Engines with *syngo* Expert-i functionality make this possible.

With SOMATOM Definition, you get more than just a CT scanner. Because we know that innovative scanner technology is not enough. We make a difference by providing software solutions that complement the hardware – for a smooth clinical workflow throughout your clinical organization and beyond.

\* Where the Internet is available.

Order

Plan & Prepare

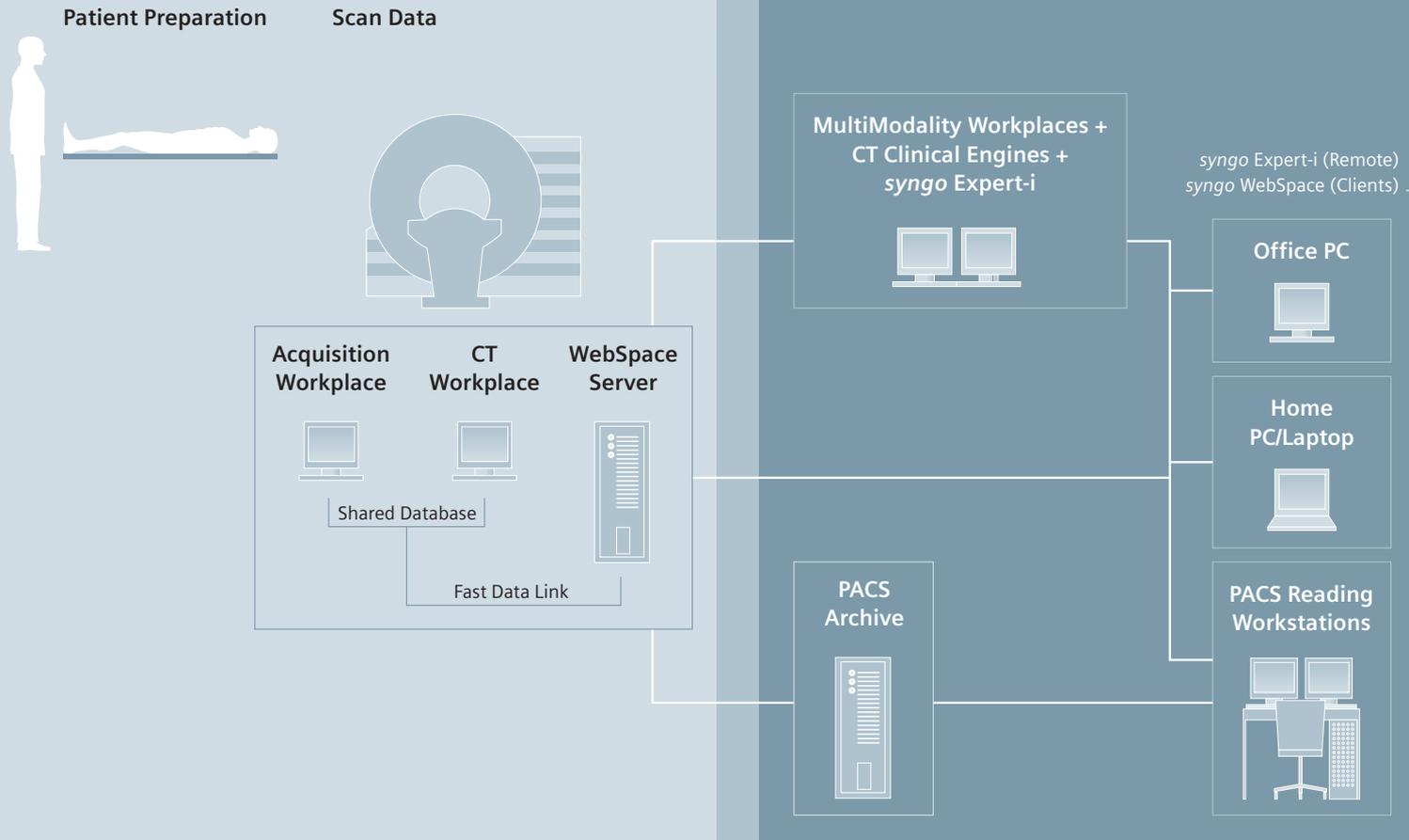
Scan & Reconstruct

Process

Read & Report

Distribute

## Data Flow



## Benefits

- Planning, Preparation, Scanning and Reconstruction for several patients by two parallel workplaces.
- Immediate data access at Acquisition Workplace and CT Workplace through shared database.
- Virtually zero delay availability of thin slice data through Fast Data Link to WebSpace Server.

- 3D data where needed with *syngo* WebSpace.
- Get a second opinion with *syngo* Expert-i.
- Parallel 3D Reading by concurrent sessions.

# 3D Reading. Wherever You Are.

## The difference between a workstation and *syngo* WebSpace? 3D access to go.

We designed *syngo* WebSpace to offer you ultimate speed and flexibility across your entire workflow. Effortlessly integrated into your hospital's existing data distribution network, *syngo* WebSpace allows real-time access to CT data. Up to 20 users can be interfaced to the server simultaneously – whether from the office, from home or while traveling.\*

With *syngo* WebSpace, you have not only CT data in real time on the monitor of your *syngo* Acquisition Workplace, but you can access data with virtually zero delay from other CT workplaces or PCs\*\*

(e.g. PACS reading workstation, office PC\*\*, etc.). As you can postprocess the acquired data from anywhere\*, the CT scanner is free for the next patient, saving you precious time and increasing patient throughput. Familiar standard 3D tools such as MIP and MPR together with advanced 4D, bone removal, and automated vessel analysis tools are included in the intuitive *syngo* InSpace4D™ user interface and are available enterprise-wide via any *syngo* WebSpace client.

With *syngo* WebSpace, you benefit from a new level of clinical workflow efficiency. Maximizing your investment and adding value to your existing resources, it makes a difference – keeping costs down while helping to enhance diagnostic outcomes.

\* Where the Internet is available.

\*\* PC must meet minimum specifications.





*syngo*  
It's All About You.

*syngo*®, our unique solution for diagnostic and therapeutic cycles, knows how you work and what you need. What's most important, fast, easy, and intuitive *syngo* brings together all the solutions critical to you – and to your patients. Uniquely role-based for your workflow, *syngo* completely integrates your day, your department and beyond, leading to a whole new level of clinical excellence. And a partnership you can grow with. It's the beginning of a virtual, "always on, anywhere" world of healthcare.

The time to *syngo* is now.





# Diagnostic Speed and Confidence in CT

## The difference between patchwork and teamwork? CT Clinical Engines.

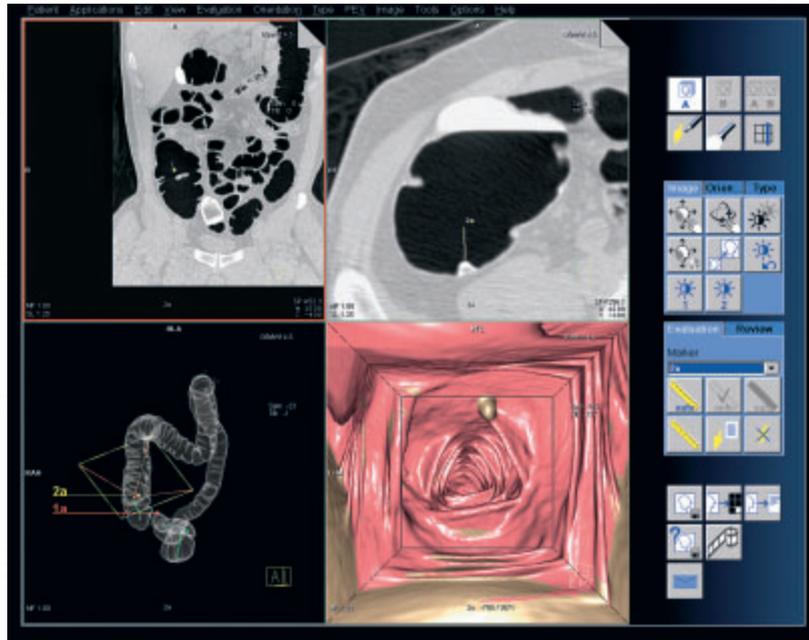
A combination of Siemens' innovative CT technology and *syngo* solutions, CT Clinical Engines are designed to maximize the clinical performance of SOMATOM Definition. Offering what you need for optimal image acquisition, exceptional visualization, comprehensive evaluation, robust quantification, and flexible reporting, they provide an ideal clinical configuration for oncology, neuro, cardiovascular, and acute care imaging.

The basis for the CT Clinical Engines is a powerful workplace offering automatic image reconstruction and interactive 2D, 3D, and 4D postprocessing tools. In addition, the workplace also contains *syngo* Expert-i, which enables consulting physicians to simply log on as a Remote User from any networked PC. And by adding one or more CT Clinical Engines to your workplace, you can create one or more workplaces that are configured to meet the demands of your clinical environment.

Diagnostic speed and confidence with CT Clinical Engines – this is the meaning of making a difference when it comes to answering complex clinical questions.

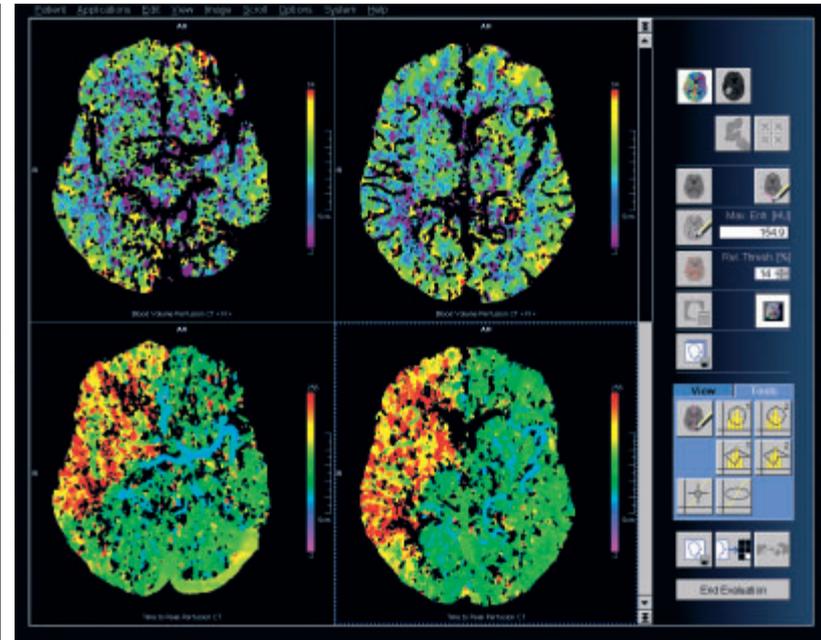
Depends on system configuration.

# CT Oncology Engine



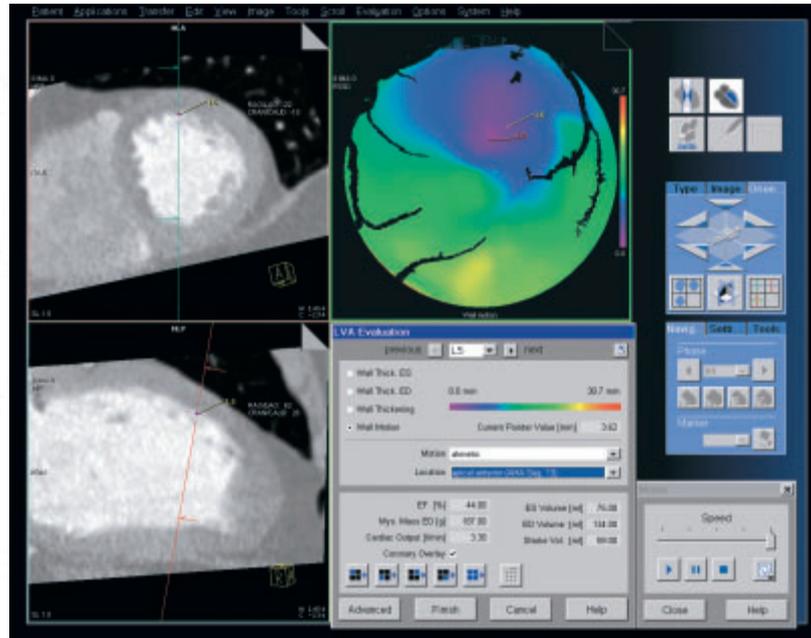
Our CT Oncology Engine contains the software you need for a more accurate diagnostic imaging, evaluation, and follow-up. *syngo* computer-assisted reading tools are the heart of the CT Oncology Engine. Comprehensive tumor perfusion enables a fast and easy visualization of tumor enhancement and aids you in differentiating tumors. And fusing images from PET or SPECT with high-resolution CT scans helps you not only to better localize tumors, but also in therapy planning.

# CT Neuro Engine



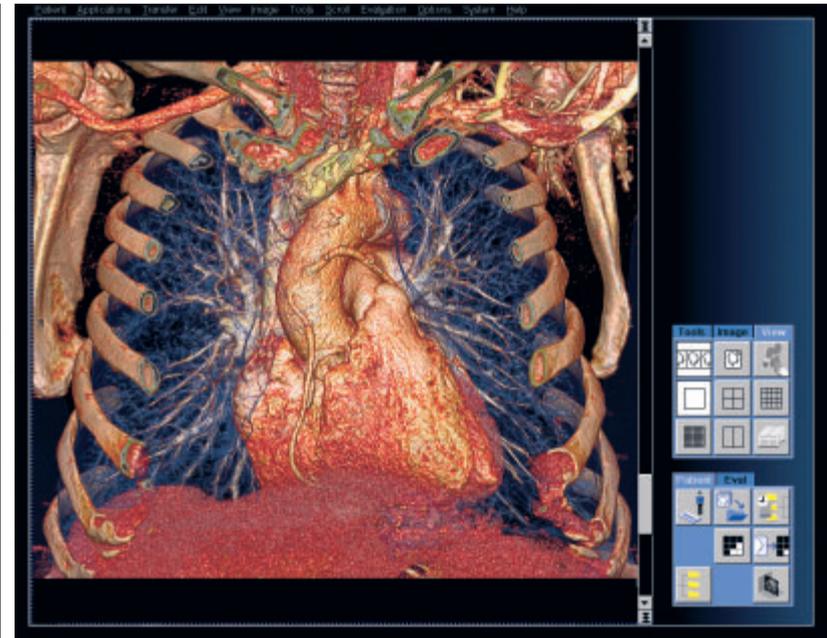
Our CT Neuro Engine delivers the technology you need for a fast and accurate visualization of complex neurological disorders, injuries, and stroke. Its unique portfolio of *syngo*-automated software tools includes *syngo* Neuro DSA CT, providing bone subtraction for a comprehensive evaluation of complex vascular structures, fast brain perfusion for stroke patients, and enabling a precise differentiation of brain tumors.

# CT Cardiac Engine



Our CT Cardiac Engine covers everything from ECG-synchronized acquisition, image reconstruction techniques, and intuitive ECG-editing. Intelligent Adaptive ECG-Pulsing™ provides the lowest possible dose for your patients. Even detecting the best cardiac phase is taken care of – Cardio BestPhase automatically provides you with a motion-free dataset in seconds only. Dedicated software solutions such as syngo Circulation help you cover everything from quantitative coronary assessment to left ventricular analysis, ultimately fusing all your diagnostic findings into a single comprehensive report.

# CT Acute Care Engine



Our CT Acute Care Engine combines the complete clinical portfolio from cardiac, vascular, musculoskeletal to stroke evaluation. Its core software feature is neuro PBV (Perfused Blood Volume) for fast stroke assessment. Whether acute chest pain patients or complex poly-trauma, the CT Acute Care Engine helps you turn data into a diagnostic outcome within minutes – in an environment where time is of the essence.

Johann-C. Steffens, MD,  
Israeli Hospital,  
Hamburg, Germany

“What really pleases me is the overall customer care from Siemens – not only regarding their products. They care about you as a client.

And that’s one of many reasons why I chose Siemens.”



# Life – Customer Care by Siemens

**The difference between a short-term investment and a partnership? Life.**

With the new technology of SOMATOM Definition, we make a difference. But what's more, we also make a difference when it comes to customer care. Life is the unique customer care solution from Siemens that helps you get the most from your investment. From the moment of your purchase, Life surrounds you with an array of programs and support that enables the continuous development of your skills, productivity, and technology. Allowing you to broaden your capabilities. Increase profitability. And take patient care to the next level.

To ensure you are always up to date on what is happening in the world of Computed Tomography, we offer you free information services. SOMATOM Sessions, our bi-annual customer magazine, provides you with clinical case studies and information on events and education. Find out about the latest news on clinical outcomes or new options and updates for your system via the monthly CT Customer e-Newsletter. Additionally, it provides information that will support you in your daily work with your SOMATOM CT scanner.

For more information about Life or to sign up for our free information services go to: [www.siemens.com/life-ct](http://www.siemens.com/life-ct)





## Skills

Maximizing your skills and clinical know-how is the key for becoming excellent. Choose from a wide range of education programs – from application training to clinical education. Benefit from the professional knowledge of our education specialists and clinical partners. Learn in your department, in workshops, fellowships, and symposia or even via e-learning tools. Optimize your clinical skills and use the full potential of your system. Explore LifeNet, the information portal at your scanner for downloading educational material. Educate, stay up-to-date!

## Productivity

System performance and efficient workflow go hand in hand. We make sure that your system is not only up and running, but that it is running at maximum performance day in day out. From safety checks and pro-active remote services to updates and corrective maintenance – we cover everything. Analytical tools to assess performance and utilization data will help you to maximize uptime, increase patient throughput, and optimize your system utilization.

## Technology

You want to stay at the technological and clinical cutting-edge and participate in the latest developments? With the programs we designed, we'll keep your scanner state-of-the-art. Technological improvements will enable you to add new clinical applications. These new functionalities will empower you to get more referrals and will open opportunities for additional reimbursement possibilities. What's more, we let you try out the latest, most promising clinical developments before you buy. As a LifeNet user, you have fast and easy access to download our new CT applications for a trial period.



**Proven Outcomes.**

This is what Siemens is helping to deliver right now. Outcomes that result from truly efficient workflow. Outcomes that improve your bottom line. Outcomes that lead to a level of care that feels exceptional to the patient and the care provider. Proof positive of the value of integrating medical technology, IT, management consulting and services. In a way that only Siemens can.



Clinical cases by courtesy of:

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