

**SIEMENS**



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**Modern. Easy. Reliable.**

**SOMATOM Spirit**



# SOMATOM Spirit



# Siemens CT Vision



## Today's reality

The justification for the existence of the entire medical industry is, of course, better health care for all patients. But the realities of clinical practice often make this simple-to-understand goal quite difficult to realize: stay within budgets, reduce hospital stays, speed up time to diagnosis, and deal with personnel issues while maintaining high medical standards and volume/throughput. At the same time, patients demand better and faster results.

## Our approach

In order to meet our share of responsibility in addressing these challenges, Siemens relies upon the recommendations of external medical experts – and the focus has been on the needs and demands of our end users in four key areas:

- to lead technological and medical advancement
- to maximize workflow efficiency
- to make state-of-the-art CT affordable
- to set the standard in customer care.

## Our vision

As a partner of our customers, we create CT innovations that lift clinical practice to a higher level of excellence and enable wide access to better patient care. We believe that even the farthest technical horizons are temporary and can be surpassed with consistent dedication to improved health care. This visionary approach, backed up by the, by far, largest R&D budgets in the health care industry, has made Siemens the undisputed innovation leader in CT over the last 35 years – providing *Answers for Life*.

## Modern. Easy. Reliable.

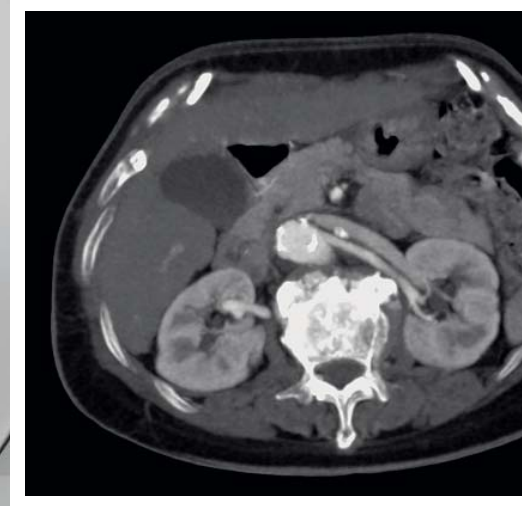
Siemens' sub-second, multi-slice SOMATOM Spirit scanner makes a difference in simplicity and excellent reliability without loss of quality. Simplicity in acquisition due to low going-in costs, simplicity of installation within a single workday, simplicity of operation due to the automated "follow-me" software and modern system design. And finally, reliability of operation due to Siemens' 150 years of dedication to robust quality for both hard- and software. The bottom line? Better health care for your patients, higher profitability for your clinic and more personal satisfaction for yourself.

Siemens CT Vision	4
SOMATOM Spirit	6
Modern	8
Easy	14
Reliable	20
Underlying Technology	24
UPTIME Services	28
Configuration Overview	30

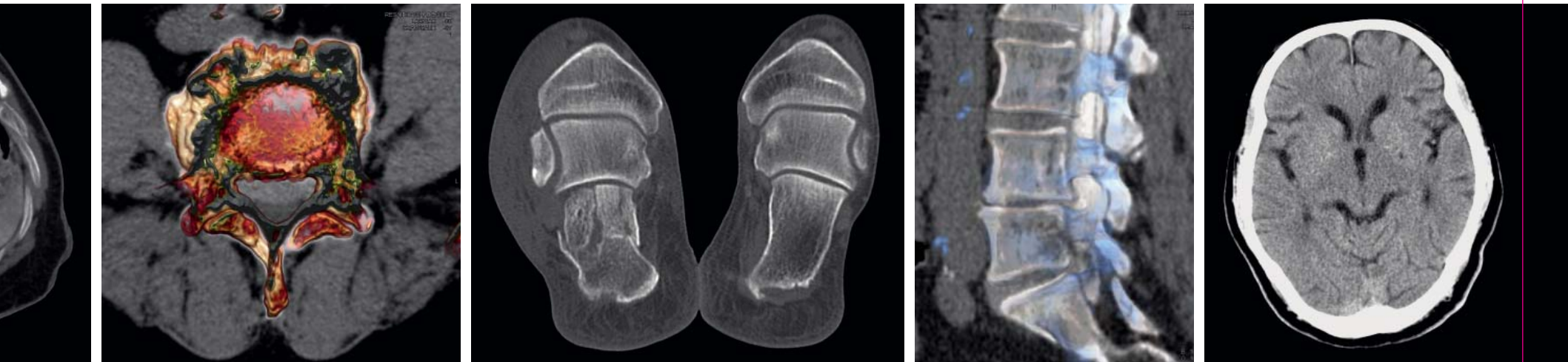
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SOMATOM Spirit



# SOMATOM Spirit









# Modern

“The SOMATOM Spirit brought high-quality CT imaging to our city. The scanner is simply fantastic.”

Sanjeev Kumar, MD  
Max Life, A unit of Ramanand Healthcare Pvt. Ltd.  
Patna, India

# Modern

## The modern choice

The SOMATOM Spirit is a modern and efficient product that – due significantly to the recommendations from other radiologists and clinics in their area – has won over 2,000 enthusiastic users in a very short period of time. Feedback from these 2,000 satisfied customers emphasizes high technical stability and customer satisfaction.

## Efficient system design

The philosophy is easily recognized in the slim and highly efficient gantry. With only 68.5 cm depth, the SOMATOM Spirit offers the most compact gantry ever designed. Aside from allowing better access to patients, the gantry can be tilted to provide additional protection for radiation sensitive regions.

Starting with the 2011 models, the SOMATOM Spirit comes equipped with a gantry-front display showing parameters such as mA, kV, scan time, table position and gantry tilt, all particularly useful, for example, for interventional and other procedures. The overall system design has been honored with both the IF Product and reddot design awards – two of the industry's most prestigious recognitions for excellent design.



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## Your Benefits

### Excellent image quality

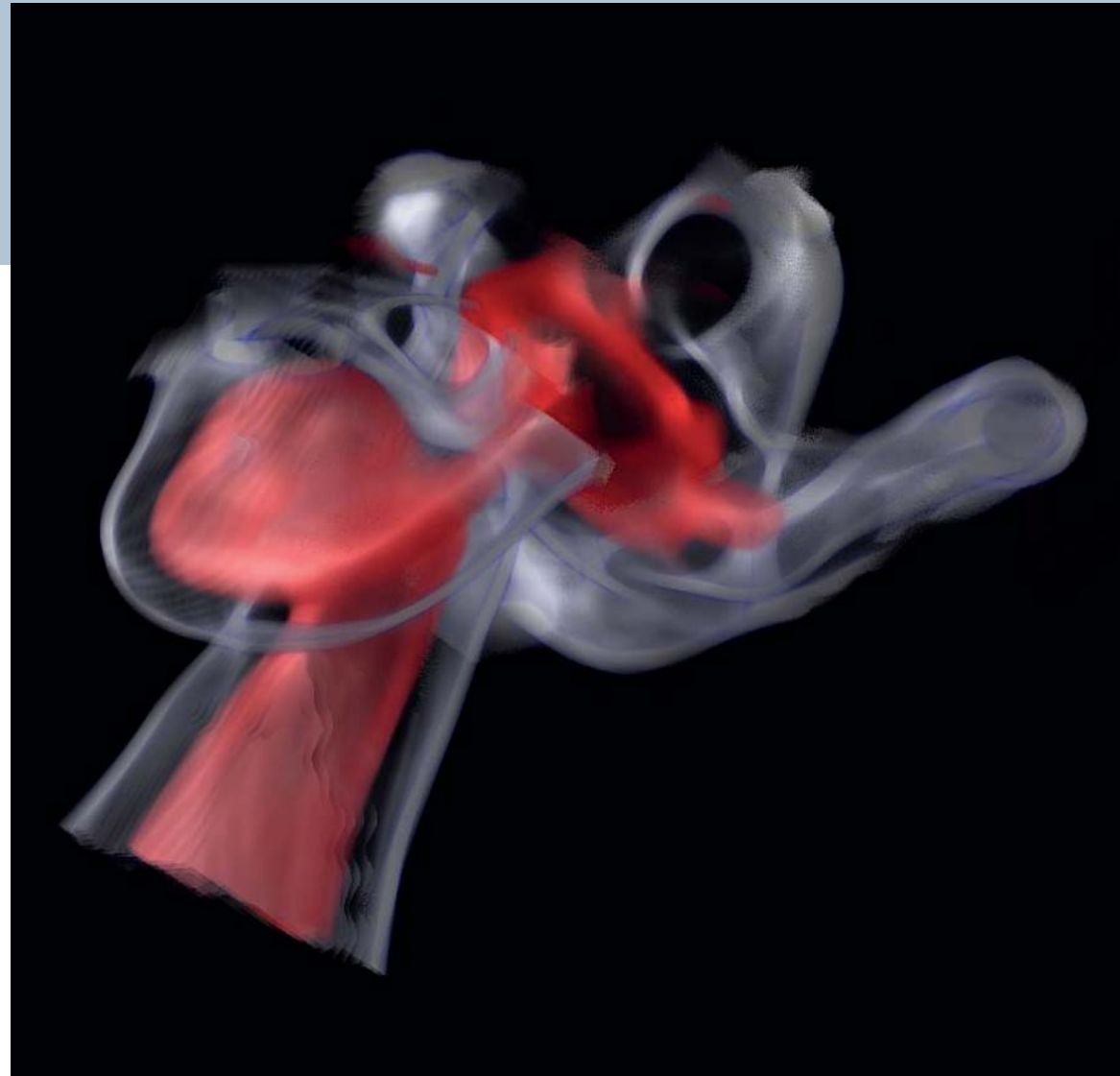
The SOMATOM Spirit is designed to fulfill the requirements of an up-to-date, dual-slice CT. The UFC detector included with the SOMATOM Spirit is identical to the material and technology that underpin the quality of our super, high-end system, the SOMATOM Definition Flash. UFC detector material is a key factor in the image quality you can expect of all Siemens SOMATOM CT systems. Having the industry's leading detector material is only one important step towards excellent image quality. Siemens takes this leadership further with the SOMATOM Spirit family of CT systems by offering a segment-leading, high-contrast resolution of 15.5 lp/cm.

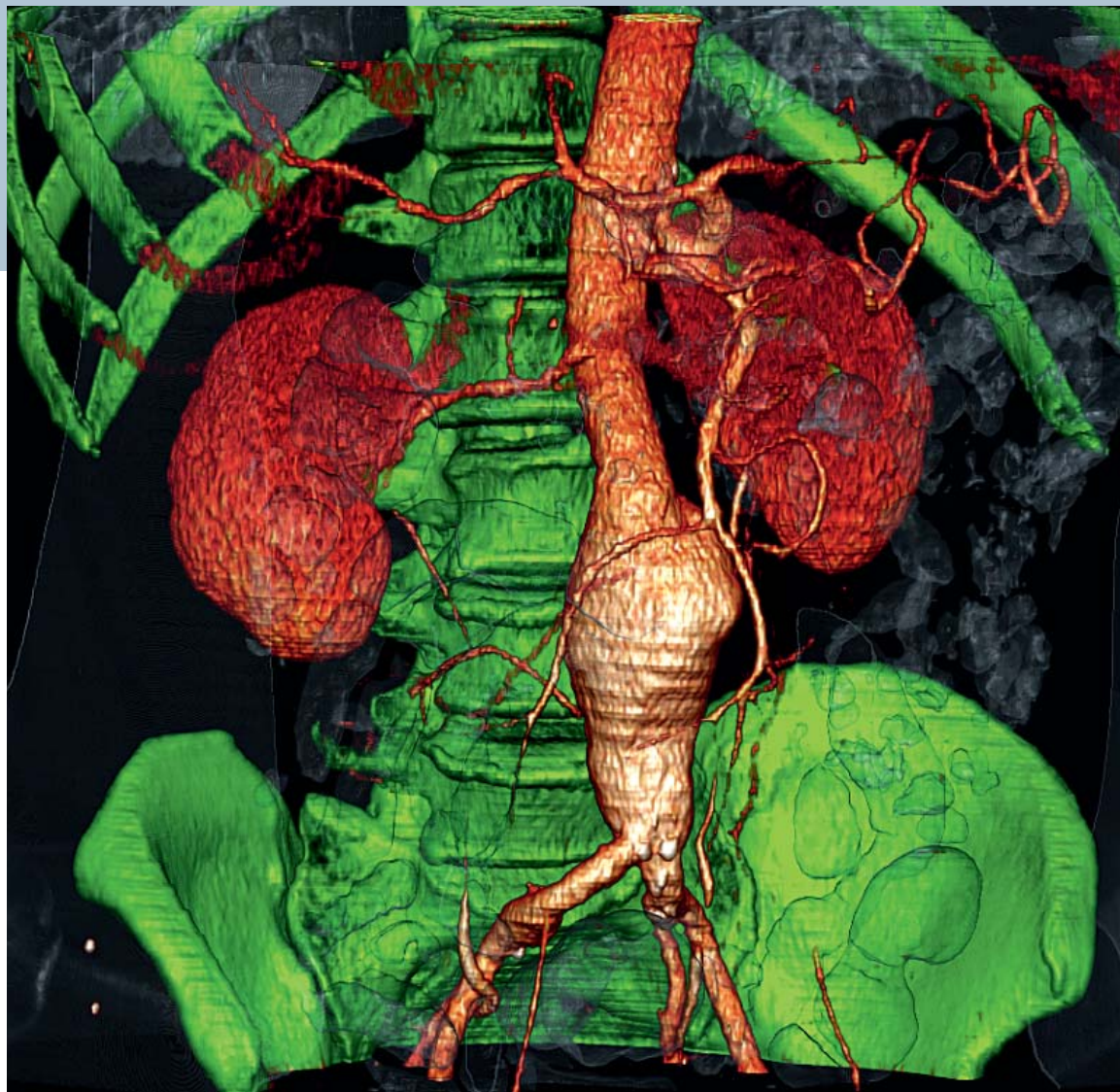
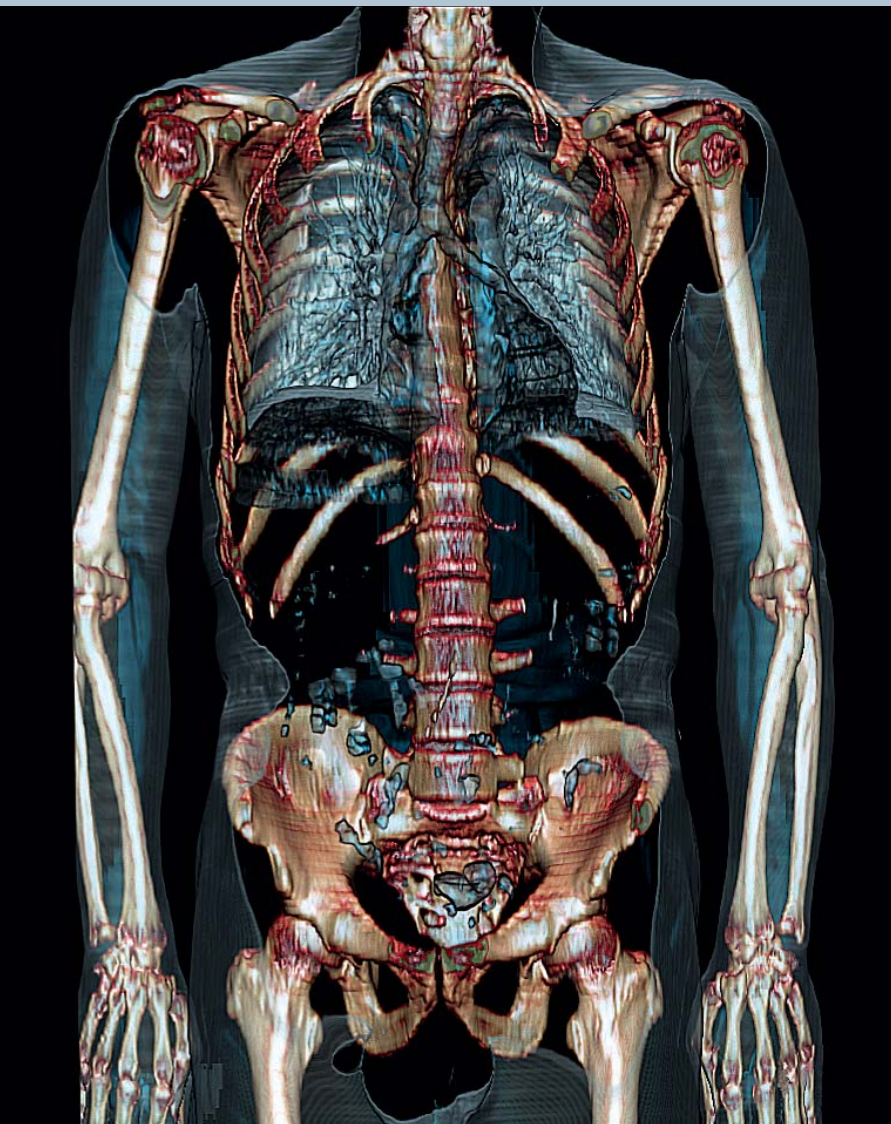
- ▶ Excellent image quality providing reliable diagnoses.
- ▶ Slim and highly efficient gantry design.
- ▶ Increased volume coverage with gantry rotation speed of up to 0.8 seconds.
- ▶ Wide range of clinical applications tailored to your needs.
- ▶ High power reserves with up to 40 kW generator power and 3.5 MHU tube are especially useful with corpulent patients.

# Modern

## Customized diagnoses

The SOMATOM Spirit offers a comprehensive spectrum of CT applications to perform all the functions of your radiology department, from routine head scan to more complex CT angiography. To customize your SOMATOM Spirit to the individual needs of each facility, there are additional applications available optionally – supporting, e.g., 3D visualization and diagnosis of lumen. Special applications for dental surgeons and orthopaedic physicians complete the versatility.







# Easy

“Brain scans used to take ten minutes. Thanks to the SOMATOM Spirit, the whole process – including patient positioning and filming – now requires only five minutes.”

Zheng Jie Hua, MD  
Jiang County People Hospital, Jiang, China

# Easy

## Easy user interface

The first thing you will notice each morning is the monitor with the system's graphic user interface. For this reason, Siemens has designed a tailor-made, ease-of-use, *syngo* interface for the SOMATOM Spirit so that you can take full advantage of all of the SOMATOM Spirit's functionalities. Basically, a "follow-me" approach is used that quickly takes you – step for step – through all the procedures required for a successful scan.

The special *syngo* interface provides intuitive simplicity and a short learning curve, even for less experienced users. Especially new customers are impressed with the logically guided procedures. They in particular appreciate these ease-of-use features that make the system ready for an examination with only a few mouse clicks.

## Easy positioning

After selecting the dedicated protocol that you want to utilize, the patient must be correctly positioned. The SOMATOM Spirit also makes this step quick and convenient with vertical table movement and intelligent gantry positioning controls. Because the table can be moved to as low as 45 cm, even immobile patients can be conveniently positioned.

The A/B buttons can be adapted to your most frequently used patient positions, for example, top of head position for neuro-imaging. All these features will support you to achieve high-quality imaging and iso-centric scanning with no unnecessary loss of time.





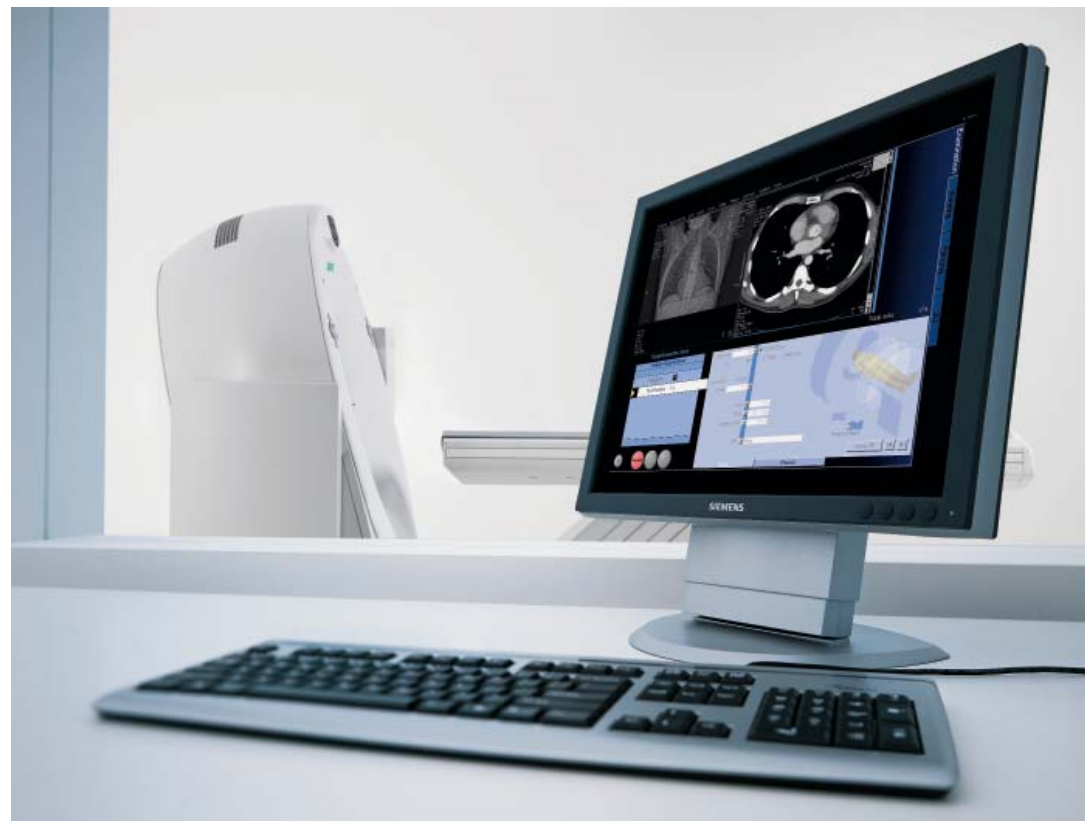
## Your Benefits

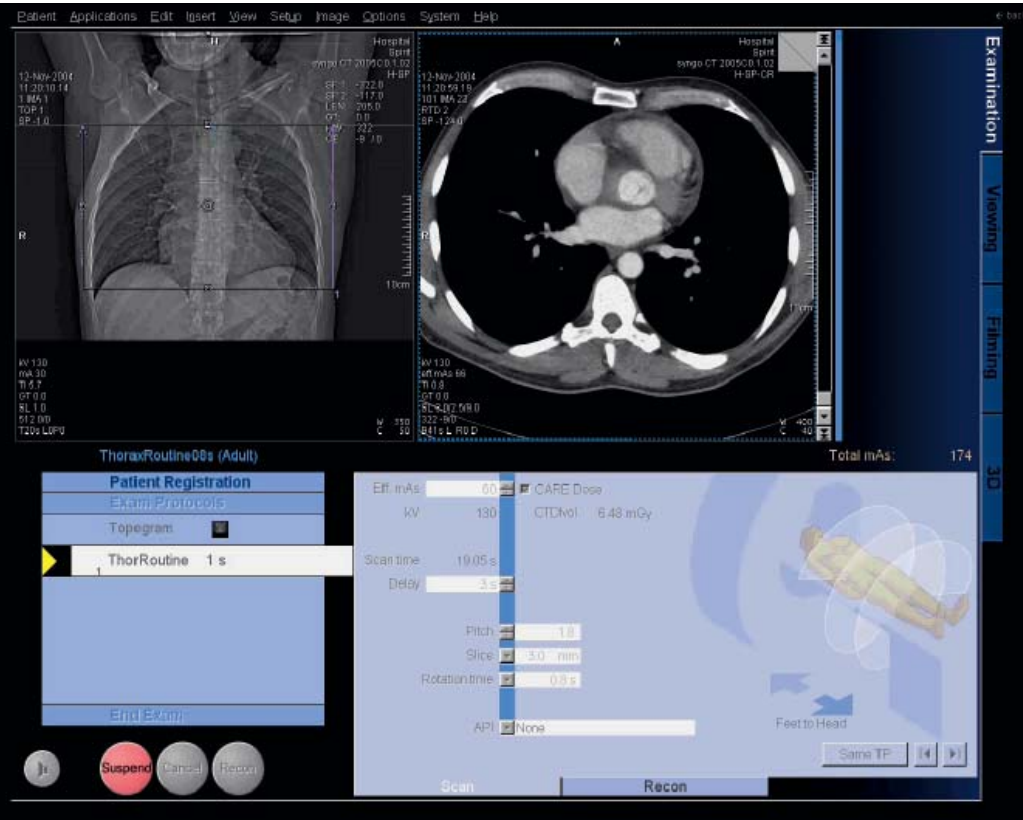
### Easy workflow

All of the features mentioned contribute to an efficient and profitable workflow. When rotating staff the standardization assures very fast comprehension of the system's current set-up and handling. This is only one example for time savings with the SOMATOM Spirit. Standardized procedures and protocols make it easy for all staff members to achieve standardized results. Also important for rapid and reliable workflow is the state-of-the-art computer hardware with an excellent recon speed of 5 images per second. With the impressive flexibility of the SOMATOM Spirit, you are even able to expand your clinical fields, for one example, to accurate radiation therapy planning.

- ▶ Easy user interface provides simplicity and a short learning curve.
- ▶ Standardized procedures and protocols.
- ▶ Intelligently located gantry positioning control with default settings support easy patient positioning.
- ▶ State-of-the-art computer hardware guarantees a fast image reconstruction of up to 5 images per second.

# Easy









# Reliable

“We are very satisfied with the SOMATOM Spirit, the original tube held about 1.3 million scan seconds and has a high performance with excellent image quality. We hope to maintain this partnership with Siemens and continue growing with quality and innovation.”

Dra. Miriam Krauss  
CT and MRI Specialist  
Clinical Director of CEMISE  
Aracajú-SE, Brazil

# Reliable



## High uptime

Also contributing to patient throughput and profitability is the excellent reliability and stability of the SOMATOM Spirit. Competitive systems have to deal with uptime and downtime. Here at Siemens, we believe that the only time you can afford is UPTIME, so we have emphasized this goal in our engineering and production efforts in addition to modern, efficient scanning. Results from the 2,000 systems installed around the globe indicate that the SOMATOM Spirit has a 99.6% uptime rate\* and regularly achieves 10,000 scans – and more – without a single failure.

## High profits

While patient health care is the primary function of all medical efforts and installations, at the end of the day, business results must be considered. You will enjoy all the economic advantages of the SOMATOM Spirit including a low going-in cost and a smooth installation in one day causing minimum interruption in your patient throughput.

But these are only two indications of long-term financial benefits, to which we can add low power consumption costs with air cooling, remarkable stability of the system and a very economical total cost of ownership throughout a very long expected life span.

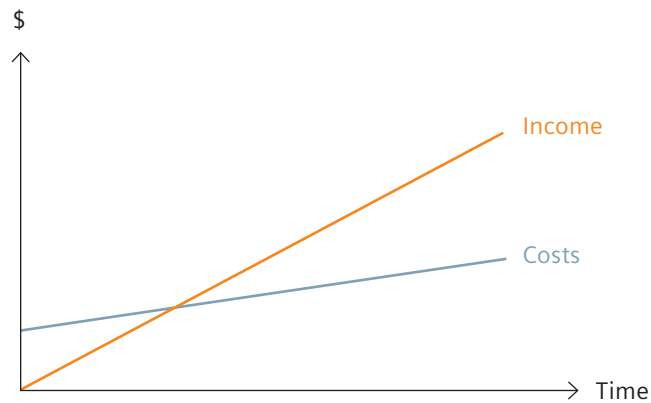
\* Results may vary. Data on file.



## Your Benefits

- ▶ Outstanding overall system uptime due to robust design and stability.
- ▶ One of the best patient throughput-to-investment ratios on the market.
- ▶ Air-cooled system requires neither a complex water cooling installation nor an external chiller.
- ▶ Virtually no loss of time or patient throughput – installation time is only one day.
- ▶ Low heat dissipation of < 3.6 kW.
- ▶ Power consumption of only 40 kVA.

### Break-even point

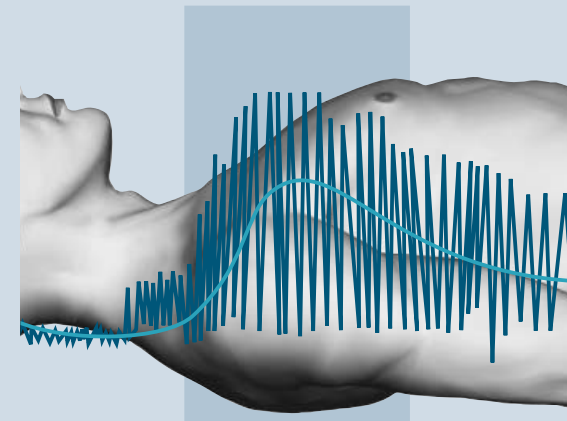
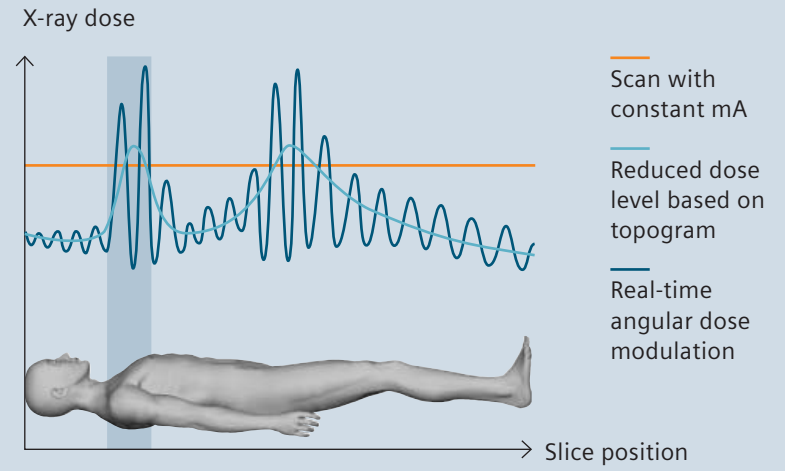


# Technology

## Underlying Technology

### CARE Dose4D

CARE Dose4D™, an unparalleled combination of maximum image quality at minimum dose, is an example of our philosophy to provide a wide range of dose-reduction solutions. 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.



CARE Dose4D provides up to 68%\* dose reduction compared to fixed mA examinations.

\* Results may vary. Data on file.



## Detector

Siemens has a long history of unrivalled expertise regarding detector technology – from scintillators and photodiodes to electronics – where only a few thousandths of a millimeter make a difference.

The Ultra Fast Ceramic (UFC™) Detector system is the central part of all Siemens' CT scanners. Due to this component alone, many clinical innovations have been achieved. Speed, image quality, and low dose are what Siemens UFC detectors make possible.

### Speed

Conventional ceramic scintillator material has a long afterglow effect. Siemens' ceramic UFC scintillators excel in fast decay behavior and an extremely short afterglow time.

### Image quality

As CT systems become faster, the role of image quality becomes more important. Siemens' UFC scintillators acquire large patient volumes quickly and provide high image resolution.

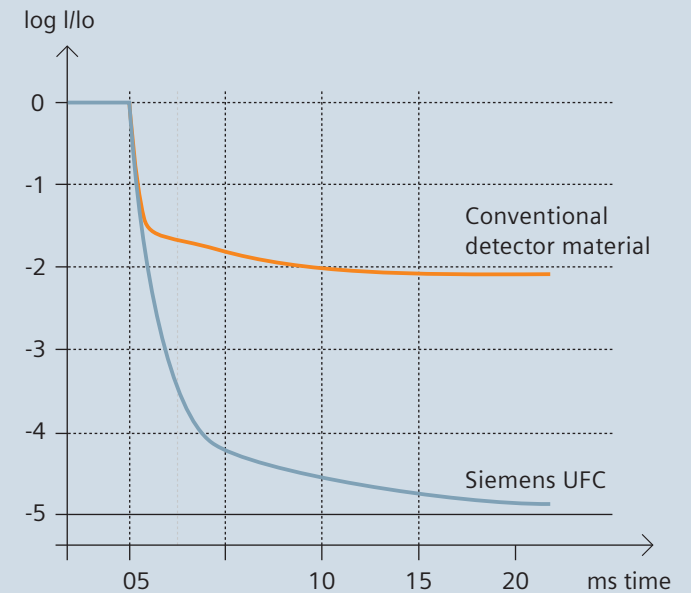
### Low dose

UFC ceramic scintillators allow for the lowest possible dose. Due to their luminous efficiency with an optimized wavelength, the detectors allow for the applied X-ray dose to be optionally evaluated according to the patient's anatomy.



Conventional detector material

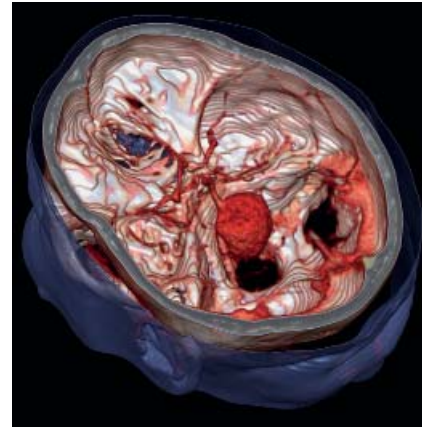
Siemens UFC



Comparison of decay time and afterglow (for different detector materials).

# Technology

## Underlying Technology



### SureView

The introduction of modern Multislice CT has opened the door to a new era of clinical applications. However, it also introduced certain limitations resulting from the increased complexity in image acquisition, reconstruction procedures, and algorithms. But there are innovative ways to overcome such pitfalls. The solution Siemens offers is SureView™, the fast spiral image reconstruction software.

#### **High-quality imaging at low dose**

To facilitate consistent image quality at any pitch, even for long scans, Siemens invented SureView – the dedicated spiral image reconstruction algorithm.

#### **Easy to use**

SureView features easy-to-use scan protocols, where the user only needs to select the scan range, mAs, scan time, and slice width. All other parameters are automatically calculated by the scanner.

## Small footprint

By concentrating on quality essentials, our engineers and scientists were able to design an efficient and modern scanner into only 18 m<sup>2</sup> making possible an installation in one day and routine operation with only air cooling. The small footprint, however, represents a giant step in CT research and design that challenged our scientists and engineers to take advantage of today's most advanced materials, making installations possible in limited space and thereby, better health care for many patients who would otherwise not have access to CT diagnosis.

## SOMATOM Spirit: 18 m<sup>2</sup>



# UPTIME Services

## A partner at your side

With Siemens, systems and services go hand in hand. High system availability, diagnostic confidence and optimized workflow are crucial for the success of your CT.

To meet your performance expectations, we systematically focus on being proactive. That's why we developed our proactive service solutions that help you increase system availability, reliability, and workflow efficiency. We also support you with different types of training and provide support for existing applications and functionalities, even remotely.

## A smart investment and seamless support

As a pro-active service provider, Siemens UPTIME Services focuses on real-time remote monitoring and preventive maintenance of medical hard- and software. That's how we solve problems before they even occur, thus enabling increased system availability, optimized performance and workflow efficiency.

Offering our innovative service portfolio we will keep you on track:

- Siemens Performance Plans
- Siemens Guardian Program™
- Siemens Virus Protection
- Siemens Utilization Management

## Siemens Performance Plans – tailored to meet your specific needs

Service and maintenance are highly important to prevent unscheduled downtimes and thus to improve your workflow. Siemens Performance Plans are designed to help you run your operations smoothly – with predictable costs, lower risks and higher efficiency. Modules can be combined together with your Performance Plan Pro, Plus or Top and an individual solution with substantial benefits for you can be achieved. E.g. our Siemens Virus Protection offers top-level defense in safeguarding your CT against viruses, providing exclusive and reliable support in getting your system back online again fast.

## Education – broaden your knowledge and expertise

Know-how is your key to success. With our extensive portfolio of education and training programs, you can deepen your knowledge and clinical expertise.

Depending on the training type you select, you can benefit most from the wide range of choices in our portfolio:

- Individual on-site training
- Classroom training
- Web based training
- Fellowships
- Remote assistance

## Training that matches your needs

We offer routine application training and beyond to answer your clinical questions. For example, stroke imaging with latest applications and much more. We show you how to maximize the benefits that can be achieved with our advanced technology helping you to optimize your workflows so you can offer an even higher quality of care for your patients and faster and more efficient throughput for your clinic.



A high-resolution photograph of a SOMATOM Spirit CT scanner. The machine is white and sleek, with a large gantry on the left and a patient table extending to the right. The background is a clean, light gray. The text 'SOMATOM Spirit' is overlaid in a large, white, serif font, with 'Configuration Overview' in a smaller, blue, sans-serif font below it.

# SOMATOM Spirit

Configuration Overview



	SOMATOM Spirit	SOMATOM Spirit Power
<b>Technical specification</b>		
Number of slices	2 x 1 mm / 2 x 5 mm	2 x 1 mm / 2 x 5 mm
Rotation time	1.0 s / 0.8 s*	0.8 s
Reconstruction speed	5 images/s	5 images/s
Tube	2.0 MHU	3.5 MHU
Generator power	26 kW	40 kW
Gantry tilt	± 25°	± 30°
Small footprint	18 m <sup>2</sup> (194 ft <sup>2</sup> )	18 m <sup>2</sup> (194 ft <sup>2</sup> )
Slim gantry	68.5 cm (27 in)	68.5 cm (27 in)
High-end detector material	yes	yes
<b>Software options</b>		
Wide application portfolio	yes*	yes*
CARE Dose4D	yes	yes
Real-time MPR	yes	yes
Volume Rendering Technique	yes*	yes*
CT Angiography	yes	yes
<i>syngo</i> Dental CT	yes*	yes*
<i>syngo</i> Neuro Perfusion	yes*	yes*
Automated Bone Removal	yes*	yes*
<i>syngo</i> Fly Through	yes*	yes*
Radio Therapy Planning	n.a.	yes*

\* Optional

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