

SIEMENS



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# Symbia T Series

Diagnostic Excellence

Answers for life.



# Symbia T Series Diagnostic Excellence





# Inno

## The Siemens Molecular Imaging Leadership

### Today's Reality

For more than 130 years, Siemens Healthcare has been a recognized leader in medical innovation. From the first electromedical devices in 1896 to the latest SPECT hybrid technologies, we have a long history of pioneering technological achievements that have helped make the impossible possible. We have always believed that even the farthest technical horizons were temporary and could be surpassed with consistent dedication to improved healthcare. This visionary approach, backed by the largest R&D budgets in the medical imaging industry, has made Siemens an undisputed innovation leader in molecular imaging.

### Return on Innovation

Driven to make a difference, the core of Siemens Molecular Imaging is based on the assumption that achieving the highest technical performance is only important when it meets the needs of our customers and the patients they serve. To gain a deep understanding of our customers' needs and the environments they work in, we collaborate closely with leading medical experts worldwide. This cooperation is the driving force behind our innovative solutions and services. From the earliest stages of research, product development and design, our customers' advice and recommendations help determine our focus. As a result, our products offer the highest possible return on innovation.



# novation

From the beginning, one of the most frequent demands of our customers has been to improve diagnostic decision making to increase confidence. At the same time, healthcare organizations face the mandates of improving patient safety and increasing productivity, while ensuring the highest quality and cost-efficient patient care.

With a focus on fulfilling our customers' clinical, workflow and financial needs, our goal is to deliver innovations that consistently meet the following criteria:

- Lead the way in technological and medical advancement
- Maximize workflow efficiency
- Make state-of-the-art nuclear medicine affordable

## **Symbia T Series**

Introduced in 2004 as the world's first diagnostic SPECT/CT system, the Symbia™ T Series has been a successful addition to the Siemens Molecular Imaging portfolio, making up about 50% of Siemens SPECT sales worldwide.

In 2012, the Symbia T Series reached another important milestone with 1,100 installations. This growth is attributed to the benefits of Siemens high-performance, proprietary technologies. Siemens Molecular Imaging is focused on helping customers leverage their investment to expand their return on innovation.

# Symbia T Series

## Diagnostic Excellence

Today's healthcare institutions have increasingly diverse patient needs, greater budget limitations and the need for higher system utilization. As a result, greater efficiency and more accurate diagnostic solutions are becoming increasingly important in Molecular Imaging, where the dual mandate to reduce patient radiation exposure and increase throughput has a direct effect on patient well-being, clinical workflow and the bottom-line. This is especially true for cardiac studies—the number one nuclear medicine procedure performed worldwide. Unclear images, insufficient lesion localization and low specificity are issues common to SPECT systems that require confirmation from other imaging modalities. In addition, remote access to patient data has become a key requirement in physician mobility. These challenges require a multi-purpose system that provides solutions on several levels.

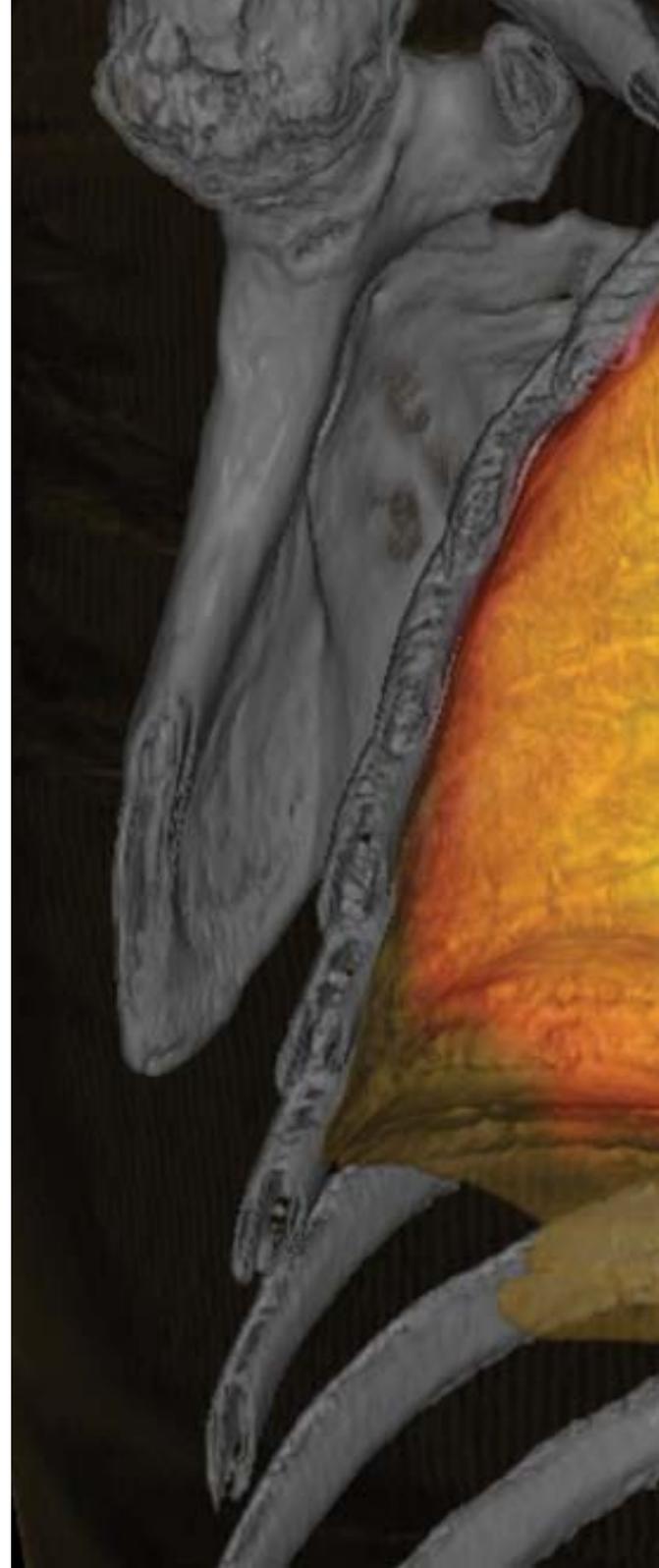
Symbia T Series is the first SPECT system with a diagnostic CT for precise anatomical localization and accurate attenuation correction, giving physicians the image quality and specificity they need for diagnostic excellence. The system delivers a combination of applications that reduce radiation exposure and increase throughput. For example, Siemens offers the world's only ultra-fast cardiac imaging solution: IQ•SPECT. The introduction of automated processes, such as Automated Quality Control and Automated Collimator Changer, saves time, reduces potential equipment damage and streamlines workflow. To accommodate diverse patient needs, the fully-integrated Symbia T Series enables SPECT, SPECT/CT and CT-only procedures. On-demand access to patient data with Symbia.net offers physicians image viewing and processing wherever they are. Symbia T Series provides high-quality imaging for excellent patient care, and is a solution to the pressing clinical and business needs of healthcare institutions worldwide.



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# High-Definition SPECT•CT





Data courtesy of Cleveland Clinic,  
Cleveland, Ohio, USA

# High-Definition SPECT•CT

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## High-Definition SPECT•CT

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Minimum Dose and  
Maximum Speed

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Full Automation

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Seamless Integration

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Customer Care

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Nuclear medicine has been previously regarded as “unclear medicine” due to lack of anatomic information. High image quality with both functional and anatomical information as well as reliable attenuation correction is vital to help physicians make sound decisions.

Symbia T Series combines HD detectors, innovative bed design, AUTOFORM® collimator technology, advanced iterative reconstruction algorithms and diagnostic multislice CT, to offer physicians high-quality SPECT•CT images to assist in clinical decision making.

# Return on Innovation

## Clinical Return

- Enhance confidence with diagnostic SPECT•CT
- Achieve best-in-class image quality with industry-leading NEMA sensitivity of 202 cpm/ $\mu$ Ci\*

## Workflow Return

- Complete two exams on one system with integrated SPECT and diagnostic CT
- Perform rapid SPECT imaging with high-sensitivity AUTOFORM collimators

## Financial Return

- Accommodate a larger patient population with the versatile combination of SPECT and diagnostic CT
- Increase referrals with advanced SPECT•CT applications

\* Based on competitive literature available at time of publication. Data on file.

## How it works

# High-Quality Crystals

### High-Definition SPECT•CT

Minimum Dose and  
Maximum Speed

Full Automation

Seamless Integration

Customer Care

NaI(Tl) crystals are hygroscopic (affected by moisture) and temperature sensitive, so they must be grown in hermetically-sealed assemblies.

Siemens is the only equipment manufacturer that grows its crystals in-house. This proprietary process produces high-quality crystals that maximize performance through enhanced radiation resistance, high transparency and minimal afterglow to increase photon visibility through scintillation.



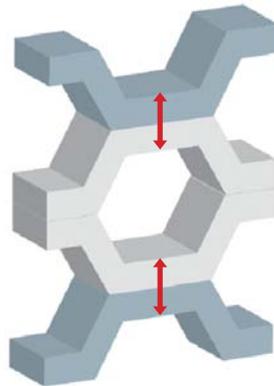
## How it works

# AUTOFORM Collimators

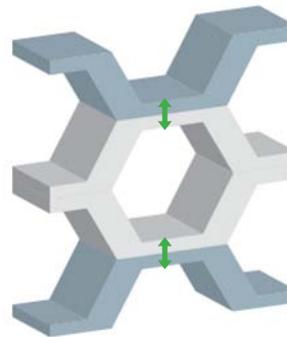
Conventional collimators have uneven septa wall thickness, which decreases sensitivity and increases the dose or scan time needed to acquire a valuable image.

Siemens is the only equipment manufacturer that designs and produces its collimators in-house. AUTOFORM collimators use a proprietary design that provides uniform septa wall thickness. The proprietary collimator design offers the industry's highest sensitivity,\* with up to 26% more counts, while maintaining image resolution.

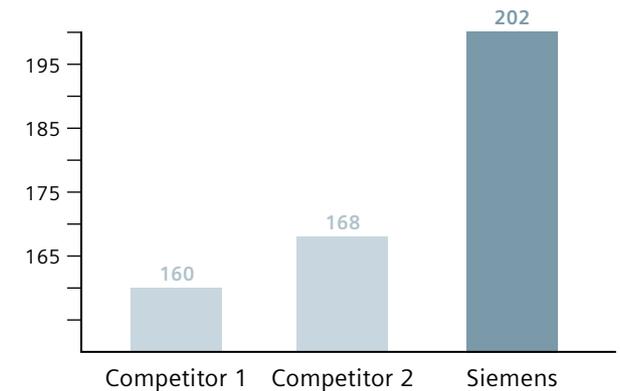
Conventional Collimators



AUTOFORM Collimators



NEMA Planar LEHR System Sensitivity (cpm/uCi @ 10 cm)



\* Based on competitive literature available at time of publication. Data on file.

## How it works

# Best-in-Class CT

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### High-Definition SPECT•CT

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Minimum Dose and  
Maximum Speed

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Full Automation

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Seamless Integration

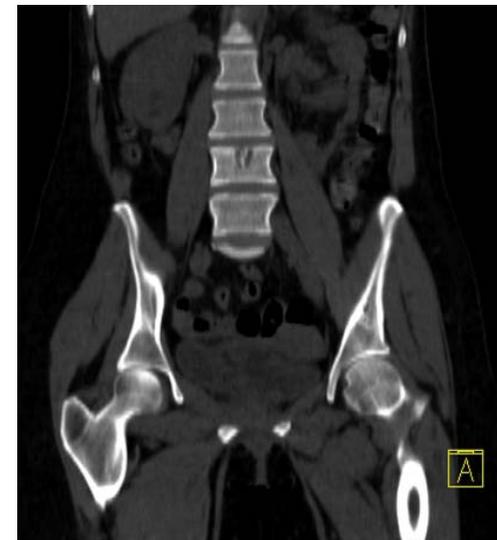
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Customer Care

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The majority of conventional SPECT/CT systems do not offer true and stand-alone diagnostic CT capability. Image quality concerns, such as the amount of noise, slice thickness, and low and high contrast resolution, are related to the physical characteristics of the CT system. A hybrid system that uses a "dental tube," can result in CT images that are not of diagnostic quality.

Symbia SPECT•CT scanners feature an integrated diagnostic CT that provides consistent image detail through an imaging chain that precisely balances the tube, detector and supporting electronic technologies, as well as compact system geometry. With the smallest focal spot size in its class and fine detector collimation, such as 6 x 0.5 mm and 16 x 0.6 mm, the Symbia T Series integrated CT provides the clarity and sharpness required for visualization of the smallest diagnostic detail.



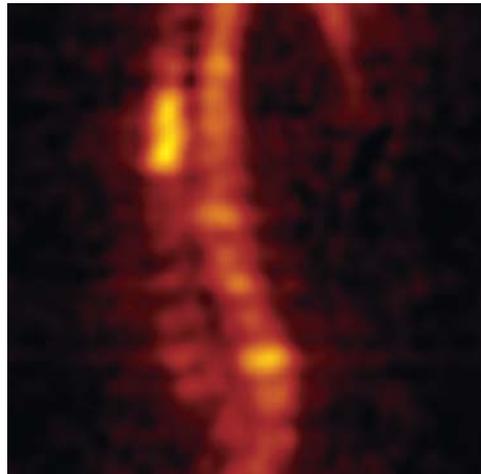
## How it works

# Flash Reconstruction

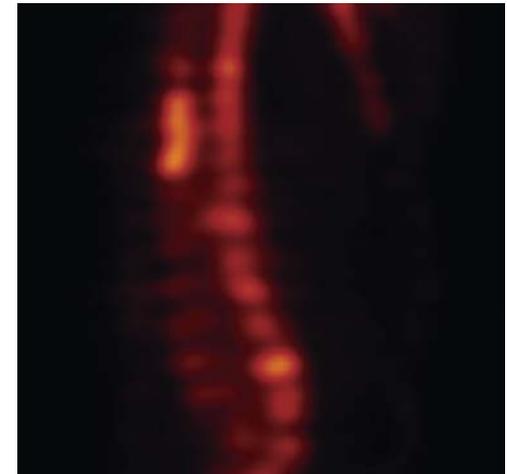
Inaccurate image reconstruction impacts image quality and can result in both false positives and false negatives. Most reconstructed images are created using algorithms that do not account for the physical characteristics of the image acquisition system.

Symbia SPECT•CT scanners with Flash reconstruction use a measured 3D collimator beam model in the iteration process. Correct modeling of the collimator distributes the activity over the slices for more accurate reconstruction. With Flash, the spatial resolution of the collimator is modeled to maintain the precise shape of the lesion. As a result, images are reconstructed with more counts in the correct volume, increasing image contrast.

Conventional Filtered Back Projection



Flash Reconstruction



Data courtesy of:  
MD Anderson Cancer Center,  
Houston, Texas, USA

Precise focal uptake in bilateral L2 vertebral pedicles in a patient with breast carcinoma are related to osteolysis, which is likely related to the metastases shown on the volume-rendered SPECT•CT image.

Data courtesy of:  
Centre Hospitalier Universitaire  
de la Cavale Blanche,  
Brest, France



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### High-Definition SPECT•CT

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Minimum Dose and  
Maximum Speed

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Full Automation

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Seamless Integration

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Customer Care

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Extensive skeletal metastases are demonstrated by a volume-rendered whole-body SPECT•CT study.

Data courtesy of:  
St. Teresa's Hospital,  
Hong Kong, China

# Minimum Dose and Maximum Speed





# Minimum Dose and Maximum Speed

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High-Definition  
SPECT•CT

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**Minimum Dose and  
Maximum Speed**

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Full Automation

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Seamless Integration

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Customer Care

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Two challenges in healthcare today are the mandates to improve patient safety and increase productivity. From a patient care and economic perspective, each is critically important. With conventional systems, clinicians have to choose between minimum dose to protect patients or faster scanning for greater productivity.

Symbia T Series offers innovative imaging solutions where the lowest dose can be used, while still scanning patients faster than ever before. With half dose and double speed clinicians can improve patient safety, reduce costs and increase utilization.

# Return on Innovation

## Clinical Return

- Reduce injected dose by offering up to 75% lower dose when performing cardiac studies with IQ•SPECT
- Perform low-dose CT attenuation correction with SPECT•CT

## Workflow Return

- Combine SPECT, CT and calcium scoring into one scan
- Triple throughput with IQ•SPECT 4-minute cardiac imaging

## Financial Return

- Save on system costs with the only general purpose system that features ultra-fast cardiac imaging
- Increase referrals with a 5-minute complete cardiac work-up



# IQ•SPECT

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High-Definition  
SPECT•CT

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**Minimum Dose and  
Maximum Speed**

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Full Automation

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Seamless Integration

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Customer Care

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## Overview

Routine cardiac studies can take up to 20 minutes, limiting the number of patient scans. To achieve the desired image quality, patients are often injected with high doses that increase radiation exposure.

Siemens IQ•SPECT is the only technology that performs ultra-fast cardiac imaging with a general purpose camera. Its unique collimator design, cardio-centric image acquisition and advanced reconstruction technology acquires four-times more counts than conventional methods for the highest quality images independent of age, body shape or size. With IQ•SPECT, physicians can perform a myocardial perfusion imaging study in just 4 minutes using the standard dose, 8 minutes using half the standard dose or 16 minutes using one-quarter of the standard dose.

Key features of IQ•SPECT include:

- **SMARTZOOM** collimation
- Cardio-centric acquisition
- Advanced reconstruction



IQ•SPECT

# SMARTZOOM Collimation

High-Definition  
SPECT•CT

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Maximum Speed

Full Automation

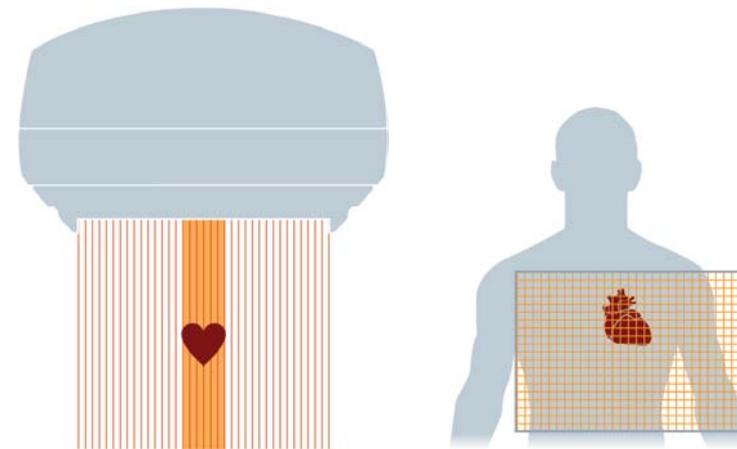
Seamless Integration

Customer Care

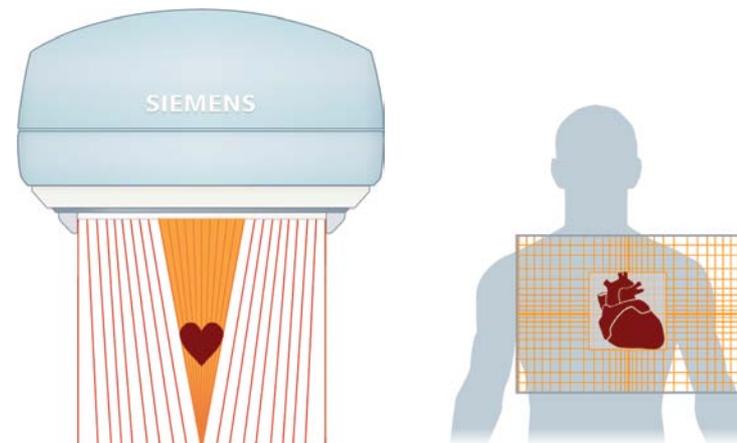
In nuclear medicine studies, image quality is limited by the number of detected photons. When imaging a small organ, such as the heart, much of the large-field-of-view detector on a conventional gamma camera is not used. Using a conventional parallel-hole collimator to acquire the necessary number of counts for optimal cardiac image quality requires either longer exams or higher injected dose.

Siemens **SMARTZOOM** collimators employ the magnifying properties of a cone-beam collimator near the center of the field of view and eliminate truncation at the edges of the field of view similar to a parallel-hole collimator. The unique position and shape of each hole in the collimator, also referred to as a vector map, is measured in the Siemens factory and stored with the collimator for use during reconstruction. The result is up to four-times more sensitivity.

Conventional Collimation



SMARTZOOM Collimation



IQ•SPECT

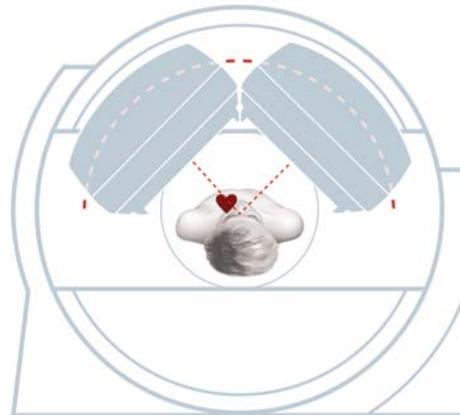
# Cardio-Centric Acquisition

Conventional scanners use parallel-hole collimators and orbit around the center of the gantry. Detectors rotate in close proximity to the patient, often causing feelings of claustrophobia.

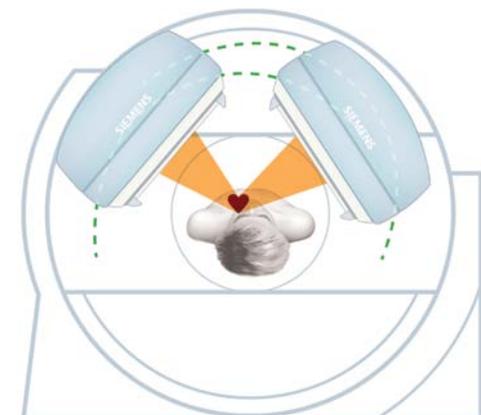
IQ•SPECT positions the heart in the center of the collimator field of view and aligns the detectors at a 28 cm radius for a cardio-centric orbit. IQ•SPECT uses the flexibility of the Symbia gantry to position each detector at an optimal distance to maximize sensitivity. Combined with advanced reconstruction, IQ•SPECT allows selection of optimized protocol options:

- 4 minutes, standard dose
- 8 minutes, half dose
- 16 minutes, quarter dose

Conventional Iso-Centric Orbit



IQ•SPECT Cardio-Centric Orbit



## IQ•SPECT

# Advanced Reconstruction

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Most conventional reconstruction algorithms do not fully account for detector motions, deflections of the gantry, collimator hole size and shape, and distance from the patient to the detectors. This may result

in artifacts and truncation that can affect image quality. For example, gravitational deflections of the detector heads during gantry rotation can potentially degrade tomographic resolution.

The advanced IQ•SPECT reconstruction method is a proprietary implementation of a conjugate-gradient iterative reconstruction algorithm. The algorithm is optimized to accurately reflect the measured geometry of the **SMARTZOOM** collimators and the cardio-centric orbit of the detectors. A 3D measurement of gantry deflection allows correction of image distortions from gantry motion. Measurements of size, shape and pointing direction for all 48,000 holes in the **SMARTZOOM** collimator provide accurate image reconstruction.

### Filtered Back Projection



### Conventional Iterative Reconstruction



### IQ•SPECT Advanced Reconstruction



## How it works

# CT Dose Monitoring

Increasing regulations to monitor patient safety put pressure on healthcare providers to reduce patient radiation exposure. This requires close monitoring of the radiation dose given to each patient over the course of several studies. Siemens integrated solutions provide tools that generate reports and monitor patient radiation exposure.

A DICOM-structured report allows extraction of dose values per study (CTDIvol, DLP) and of patient data. During scan setup, a CT dose alert feature warns the user when predefined dose thresholds will be exceeded. The CT dose monitoring feature requires the user name and password of the responsible physician, as well as a clinical reason, if the user attempts to exceed predefined dose thresholds.

## Dose Alerts and Monitoring



## How it works

# Low-Dose CT AC

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Maximum Speed**

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In hybrid imaging one of the most commonly used CT protocols is attenuation correction. High-end SPECT/CT scanners that incorporate CT systems with a higher number of slices may require more energy, potentially exposing the patient to higher levels of radiation. Additionally, conventional SPECT/CT scanners do not allow selection of lower X-ray tube voltages for attenuation correction scans.

Siemens high-end 16-slice CT system delivers up to 74% less radiation to the patient during attenuation correction and the user can adjust X-ray tube voltages to further reduce dose exposure. For the three most common nuclear medicine attenuation correction procedures, Siemens CT technology delivers the lowest dose compared to conventional scanners.

	Conventional SPECT/CT*	Symbia T16	% Lower CT Dose
<b>Whole-Body</b>	4.35 mGy @ 120 kV	1.20 mGy @ 130 kV	<b>72%</b>
<b>Cardiac Perfusion</b>	1.59 mGy @ 120 kV	1.56 mGy @ 130 kV	<b>2%</b>
		0.40 mGy @ 80 kV	<b>74%</b>
<b>Parathyroid</b>	4.35 mGy @ 120 kV	1.80 mGy @ 130 kV	<b>58%</b>

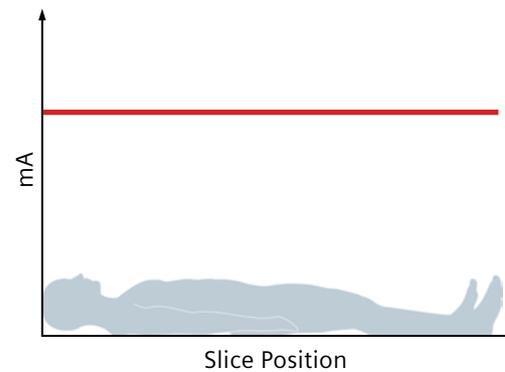
## How it works

# CARE Dose4D

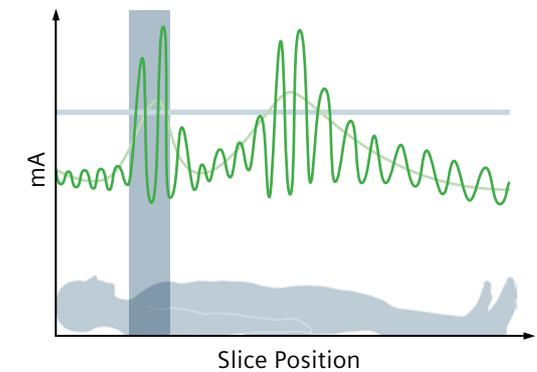
Patient safety is a key concern when performing CT scans due to the associated radiation dose. Most conventional CT systems use constant mAs, regardless of the targeted organ, exposing patients to additional radiation.

With Siemens CARE Dose4D™ real-time dose modulation is applied throughout the study and is automatically adapted to each patient. The target organs receive only the required dose, while minimizing radiation exposure to other critical organs. This reduces radiation exposure by up to 68% compared to conventional scanners.\*

Constant mA Radiation



CARE Dose4D



\* Based on competitive literature available at time of publication. Data on file.

## How it works

# Ultra-Fast Ceramic CT Detectors

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Minimum Dose and  
Maximum Speed

Full Automation

Seamless Integration

Customer Care

Conventional CT systems use ceramic scintillator material that has an extended afterglow, resulting in longer scans and higher radiation exposure. Siemens Ultra-Fast Ceramic (UFC) detectors have a short afterglow, for up to 30% less radiation exposure than conventional CT systems.\* The short afterglow is made possible by patented UFC technology that excels in fast decay behavior. The detectors' luminous efficiency and optimized wavelength allow optional evaluation of the applied X-ray dose according to the patient's anatomy.

During X-ray conversion, the ceramic scintillator glows. The faster it becomes "dark" again, the sooner it converts new radiation (i.e. changes in X-ray attenuation) to light without secondary effects.

Conventional Detectors



UFC CT Detectors



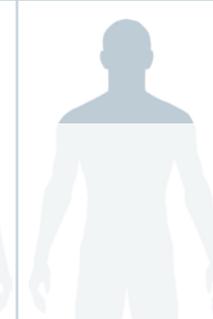
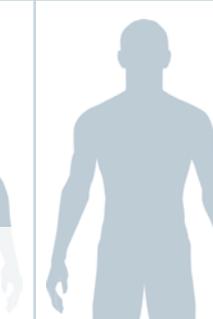
UFC detectors offer fast rotational speeds of less than 0.4 seconds. Only fast-decay scintillators absorb and transmit information from multislice projections for higher temporal resolution.

## How it works

# SureView Spiral Algorithm

The introduction of multislice CT paved the way for a new era of clinical applications. While this technology has many advantages, it is also limited by the increased complexity of image acquisition, reconstruction procedures and algorithms.

Siemens SureView fast spiral image reconstruction software offers intuitive scan protocols that only require definition of the scan range, mAs, scan time and slice width. All other parameters are automatically calculated for consistent image quality.

Conventional 2-row	Conventional 4-row (800 ms rot)	Symbia T, T2 with SureView	Conventional 8-row	Symbia T6, T16 with SureView
Slice: 2.5 mm Rot: 800 ms Pitch: 1.5	Slice: 2.5 mm Rot: 800 ms Pitch: 3	Slice: 2.5 mm Rot: 800 ms Pitch: 4	Slice: 2.5 mm Rot: 500 ms Pitch: 5	Slice: 2.5 mm Rot: 600 ms Pitch: 11
				
Vol. Coverage <b>18 cm in 38 s</b>	Vol. Coverage <b>36 cm in 38 s</b>	Vol. Coverage <b>48 cm in 38 s</b>	Vol. Coverage <b>95 cm in 38 s</b>	Vol. Coverage <b>140 cm in 38 s</b>

IQ•SPECT images acquired in only 4 minutes versus 16 minutes with LEHR. Post-CT AC IQ•SPECT images show correction of anterior wall attenuation effects.

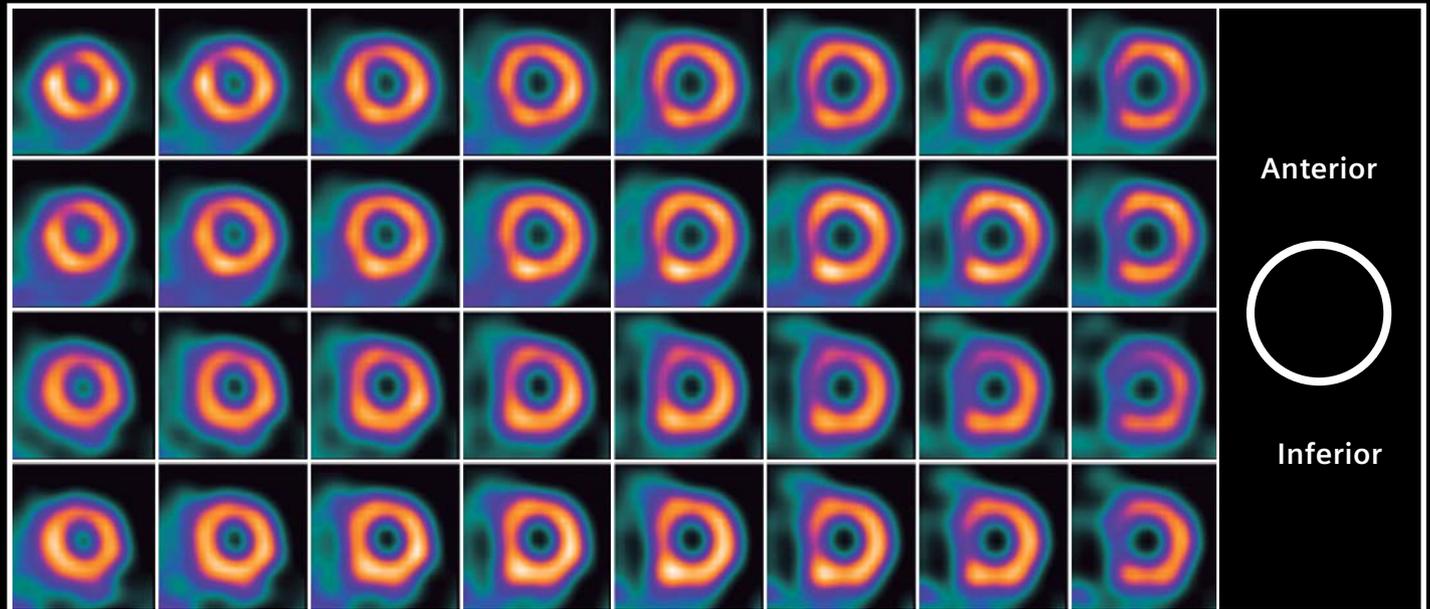
- High-Definition SPECT•CT
- Minimum Dose and Maximum Speed**
- Full Automation
- Seamless Integration
- Customer Care

**LEHR**  
(no CTAC)

**LEHR**  
(CTAC)

**IQ•SPECT**  
(no CTAC)

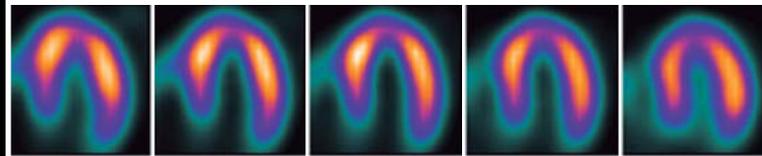
**IQ•SPECT**  
(CTAC)



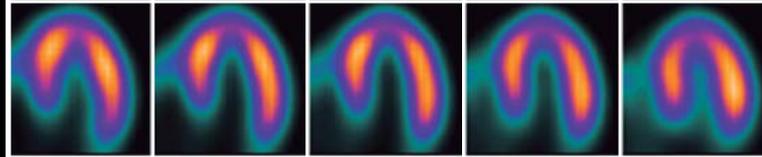
Anterior

Inferior

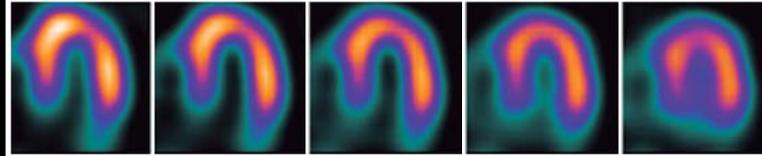
LEHR  
(no CTAC)



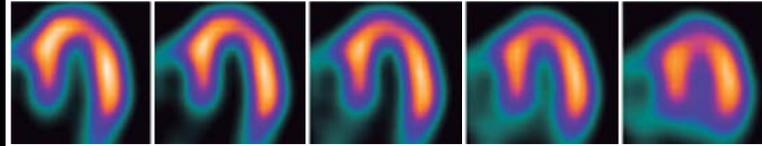
LEHR  
(CTAC)



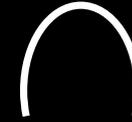
IQ•SPECT  
(no CTAC)



IQ•SPECT  
(CTAC)



Apex

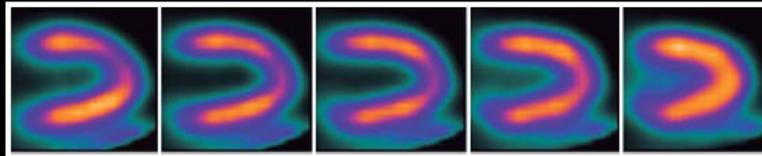


Base

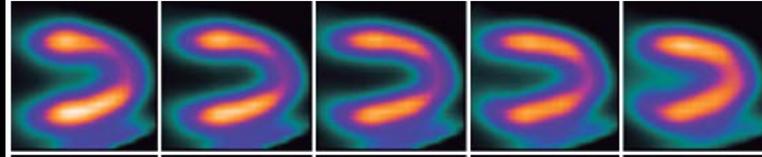
<sup>99m</sup>Tc MIBI Stress MPI in a 59-year-old female patient shows normal perfusion at peak stress. LEHR (16 minutes) and IQ•SPECT (4 minutes) images show comparable image quality and tracer distribution

Data courtesy of:  
University of Michigan,  
Ann Arbor, Michigan, USA

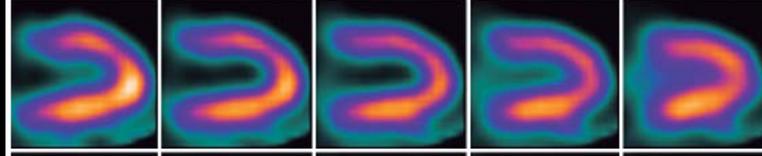
LEHR  
(no CTAC)



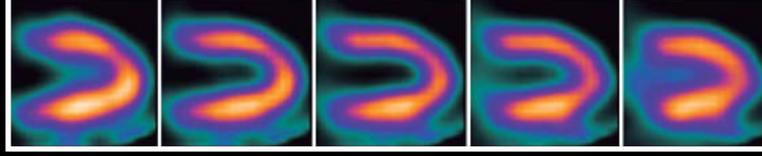
LEHR  
(CTAC)



IQ•SPECT  
(no CTAC)



IQ•SPECT  
(CTAC)



Anterior



Inferior

# Full Automation



**SIEMENS**

**Symbia**  
TruePoint SPECT-CT

# Full Automation

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High-Definition  
SPECT•CT

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Minimum Dose and  
Maximum Speed

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**Full Automation**

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Seamless Integration

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Customer Care

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Time affects all aspects of daily imaging, from patient comfort to staff productivity. With increasing patient demand and decreasing reimbursement levels, efficiency is essential.

With Automated Quality Control (AQC), Automated Collimator Changer (ACC), Autocontour and WorkStream4D™, the automated features offered on the Symbia T Series help clinicians achieve previously unattainable imaging speeds to support faster patient studies and increased patient volumes.

# Return on Innovation

## Clinical Return

- Optimize SPECT resolution by reducing detector-to-patient distance with Autocontour
- Produce consistent image reconstructions with WorkStream4D

## Workflow Return

- Run AQC overnight so the system is ready to scan each morning
- Eliminate manual collimator exchanges and collimator carts with ACC

## Financial Return

- Reduce the risk of equipment damage with automated features
- Reduce scan times and maximize patient throughput by minimizing manual procedures



## How it works

# Automated Quality Control

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Maximum Speed

**Full Automation**

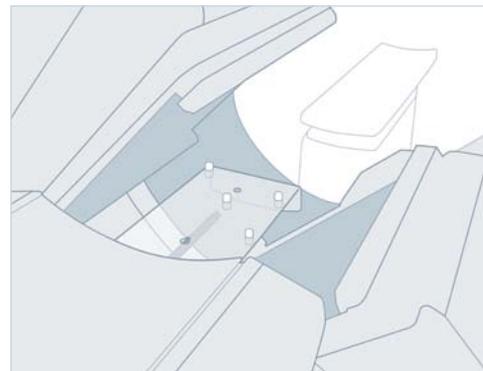
Seamless Integration

Customer Care

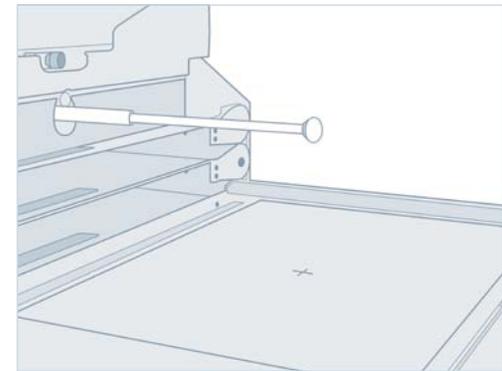
Scanners require regular quality control (QC) tests to validate calibration of the detectors. For conventional scanners, quality control is performed manually, and typically requires 20 minutes to an hour for daily QC, and about six hours for monthly QC. Because the tests require preparation and handling of open radioactive sources, the process must be rotated among the staff to avoid overexposure. Dose spillage adds further risk to the process.

With Siemens AQC, the process is performed automatically overnight, with a report provided for the technologist to review the next morning. Siemens AQC facilitates performance trending, eliminates the risk of open-source spillage and reduces staff radiation exposure.

Conventional Quality Control



Automated Quality Control



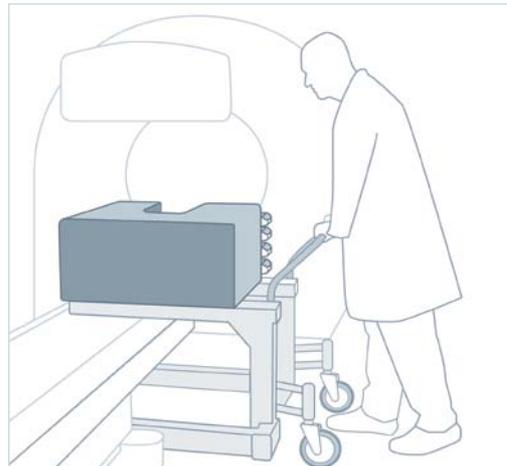
## How it works

# Automated Collimator Changer

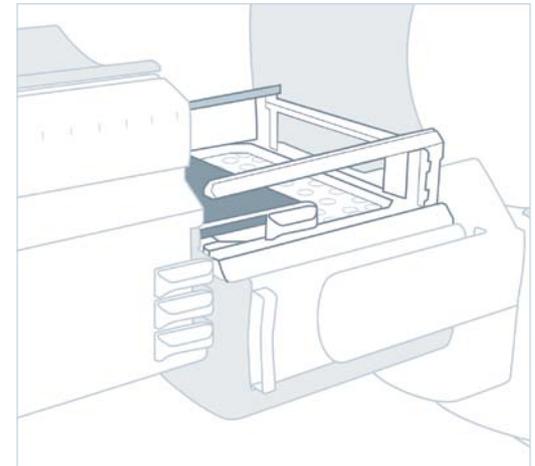
Conventional scanners require manual collimator exchange, which can increase the risk of technologist injury. Additionally, collimator exchange is often complicated and time consuming, which has forced many facilities to schedule scans around the collimator type or at convenient exchange times.

Siemens ACC automatically exchanges the collimators with a simple click so technologists gain about five minutes per exchange to perform other tasks.

Conventional Collimator Changer



Automated Collimator Changer



## How it works

# Autocontour

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High-Definition  
SPECT•CT

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Minimum Dose and  
Maximum Speed

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**Full Automation**

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Seamless Integration

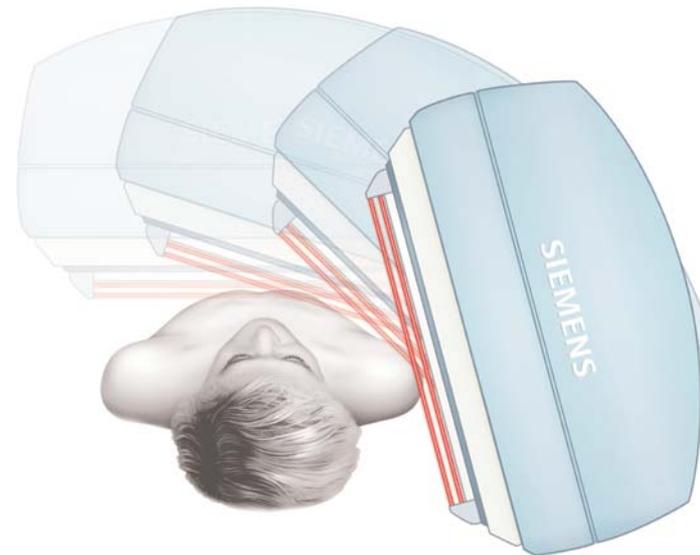
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Customer Care

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For ideal image quality, detector heads need to be positioned in close proximity to the patient to create images with the sharpest resolution. With conventional scanners, the technologist manually positions the detector heads as close as possible to the patient without risking contact. If the detector heads are not close enough, image resolution is lost. Conversely, if the detector heads are too close and come into contact with the patient the scan must be terminated.

Siemens Autocontour is fully automated and elegantly contours to the patient's body. Infrared sensors reduce detector-to-patient distance for optimal SPECT resolution and help prevent patient contact.



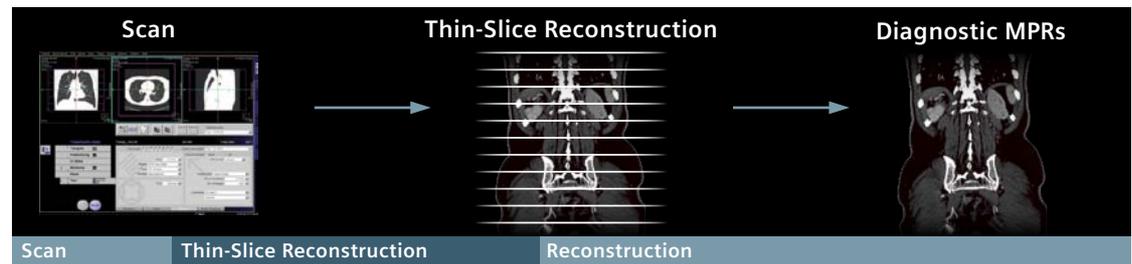
How it works

# WorkStream4D\*

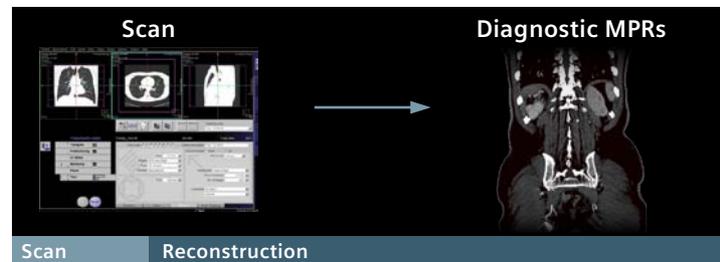
With conventional CT scanners, operators manually create the thin-slice reconstruction, which is time consuming and may produce inconsistent results.

Siemens WorkStream4D automatically reconstructs 16 images per second. Oblique and double-oblique reconstructions are immediately available, for faster exams, streamlined workflow and consistent results.

Conventional Reconstruction



WorkStream4D



\* Available for Symbia T16 only.

## How it works

# Symbia.net

High-Definition  
SPECT•CT

Minimum Dose and  
Maximum Speed

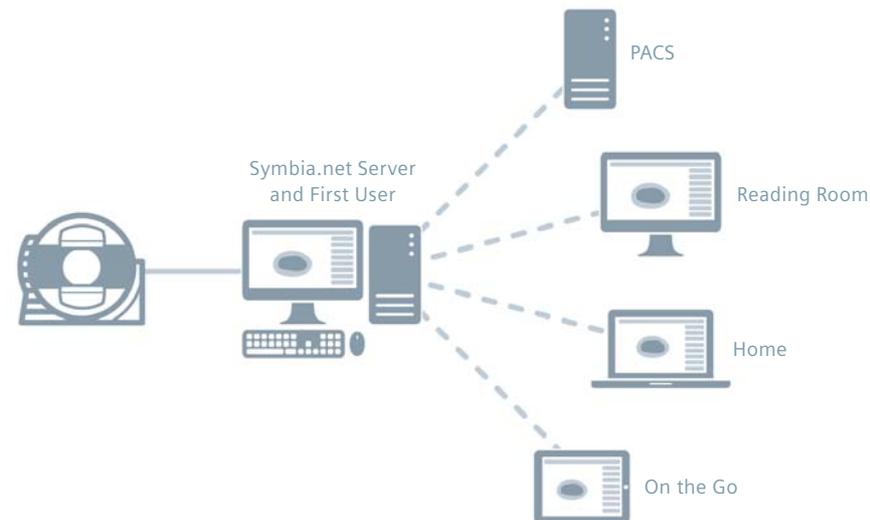
**Full Automation**

Seamless Integration

Customer Care

Today's physicians access patient information from multiple locations. Conventional thin-client solutions trade function for form, restrict full processing and limit the number of users.

Siemens Symbia.net provides flexible thin-client remote processing, and reading of nuclear medicine images and SPECT/CT data. The system is compatible with Mac, PC and iPad\* clients and saves space and cost by using existing equipment. With Symbia.net, physicians can read results from multiple locations and data can be accessed concurrently by up to five users. Installing users, functionality and software updates is easy.

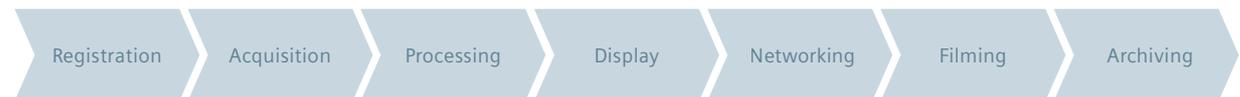


## How it works

# Automated Workflow

Conventional molecular imaging workflow systems process data through multiple routes before it is accessible to users. Siemens clinical workflow solutions automate and streamline all imaging workflows—from scanning and processing to reading and sharing. Tools include workflow design, worklist, flexible display and automatic cardiac processing. The system is intuitive and fully customizable. When combined with Symbia.net, Siemens automated workflow applications increase productivity and decrease cost without compromising quality of care.

Conventional Workflow

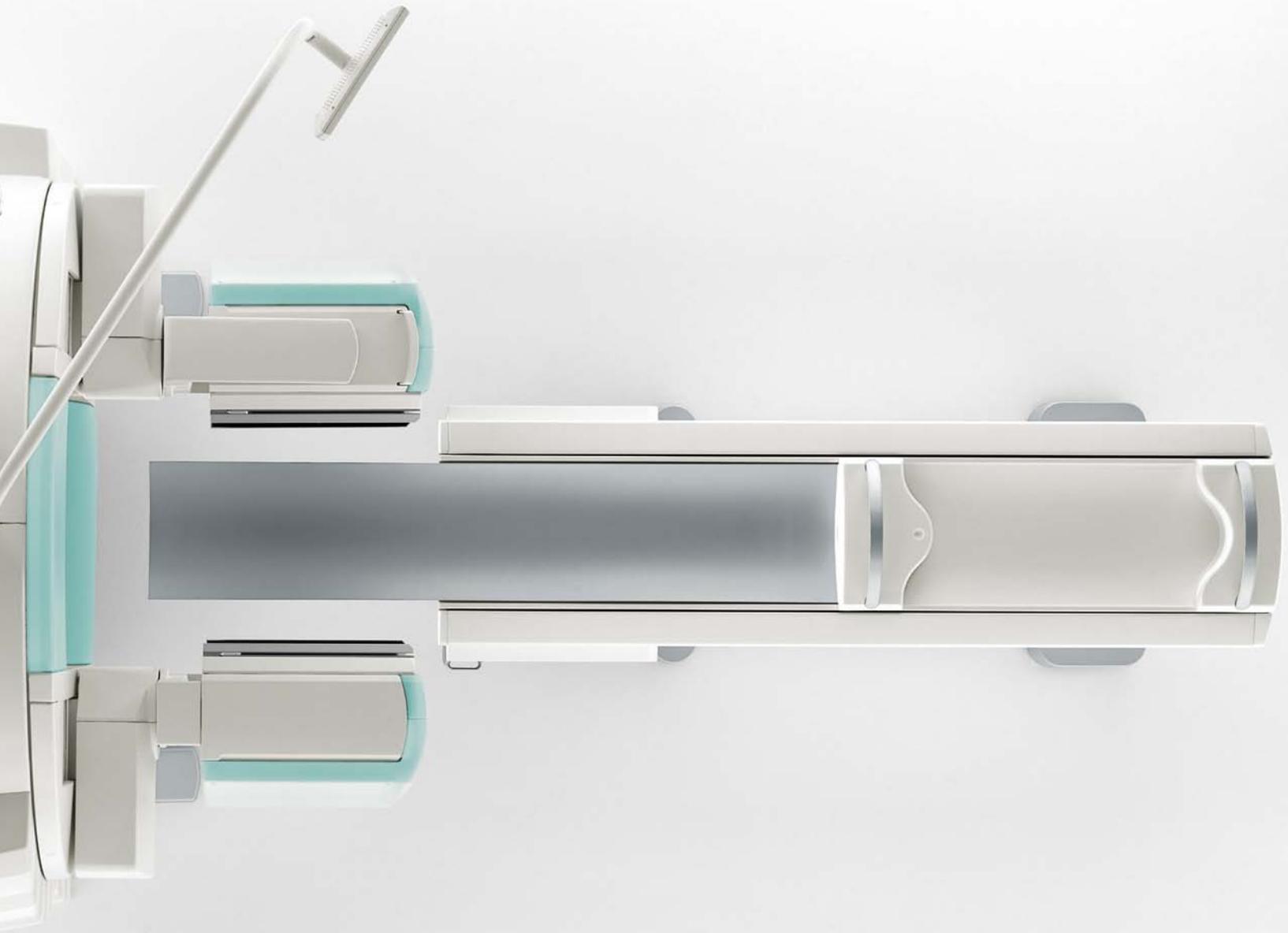


Automated Workflow



# Seamless Integration





# Seamless Integration

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High-Definition  
SPECT•CT

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Minimum Dose and  
Maximum Speed

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Full Automation

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**Seamless Integration**

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Customer Care

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To grow their business, customers need a system that can accommodate the wide variety of SPECT and CT patients and procedures. Conventional SPECT/CT systems do not integrate high-end CT, and the standard bore size cannot serve all patients. In addition, most conventional systems are not configured for day-to-day clinical situations, such as gurney or hospital bed imaging mode.

Symbia T Series is a multimodality solution that helps customers maximize patient referrals and throughput. The system provides clinical flexibility for use as a high-resolution CT with high-definition SPECT imaging, or as a stand-alone CT. Symbia T Series systems can accommodate a diverse patient population, including SPECT and CT studies for bariatric patients. The gantry is designed for convenient gurney and hospital bed imaging, eliminating patient relocation. Seamless integration and scalability allow customers to configure the system to meet their needs and the needs of their patients.

# Return on Innovation

## Clinical Return

- Increase clinical flexibility with SPECT, stand-alone CT or integrated SPECT•CT capabilities
- Enhance patient comfort and co-register SPECT and CT with compact system integration

## Workflow Return

- Combine SPECT and CT into one exam
- Access SPECT•CT cases anywhere, anytime with Symbia.net

## Financial Return

- Save time and space with the industry's smallest footprint diagnostic SPECT•CT system\*
- Expand clinical utilization by upgrading to a higher number of CT slices

\* Based on competitive literature available at time of publication. Data on file.

How it works

# Patient-Friendly Gantry Design

High-Definition  
SPECT•CT

Minimum Dose and  
Maximum Speed

Full Automation

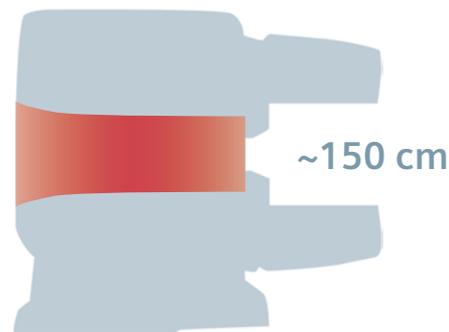
**Seamless Integration**

Customer Care

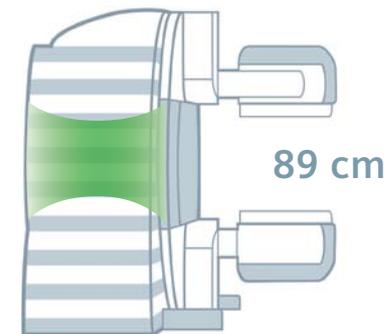
Conventional scanners have closed and confined gantries with straight-edge tunnels of up to 150 cm. This can be intimidating and claustrophobic for some patients, causing significant discomfort and making it difficult to remain still throughout the procedure.

Symbia T Series enhances patient comfort with an 89 cm tunnel that is 40% shorter than conventional scanner tunnels, and features a more open gradual funnel design.

Conventional Gantry Design



Siemens Patient-Friendly Gantry Design



## How it works

# e.media

Depending on the type of study being performed, nuclear medicine studies can take up to 45 minutes. It is important that the patient remains still during the scan, to avoid motion artifacts and scan restart, which can be difficult for pediatric or elderly patients, as well as those with chronic pain.

Symbia T Series e.media full-color touch screen features high-quality video and sound to promote patient comfort and provide entertainment during the procedure.



## How it works

# Detector Versatility

High-Definition  
SPECT•CT

Minimum Dose and  
Maximum Speed

Full Automation

**Seamless Integration**

Customer Care

To support the diverse clinical applications of nuclear medicine, flexible detector functionality is important to meet the needs of both physicians and patients. Conventional scanners are rigid and make it difficult to image patients in gurneys, hospital beds or wheelchairs. As a result, hospital staff must spend extra time transferring patients onto the scanner bed.

The progressive gantry design and versatile detectors featured on the Symbia SPECT•CT system allow more than 15 imaging configurations. The scanner bed can be moved to position patients in gurneys, hospital beds or wheelchairs within the detectors' field of view for optimal imaging.





Symbia  
Siemens PET/CT

SIEMENS

SIEMENS

## How it works

# Smallest Footprint\* Diagnostic SPECT•CT

High-Definition  
SPECT•CT

Minimum Dose and  
Maximum Speed

Full Automation

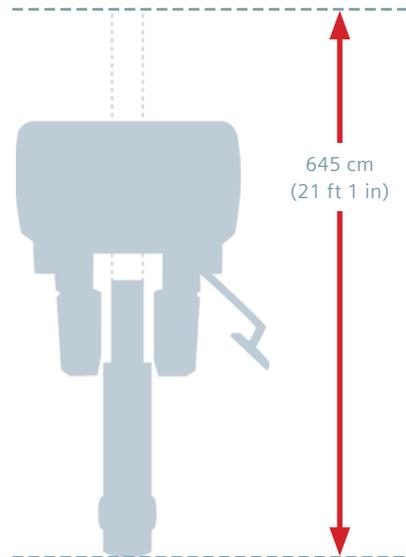
**Seamless Integration**

Customer Care

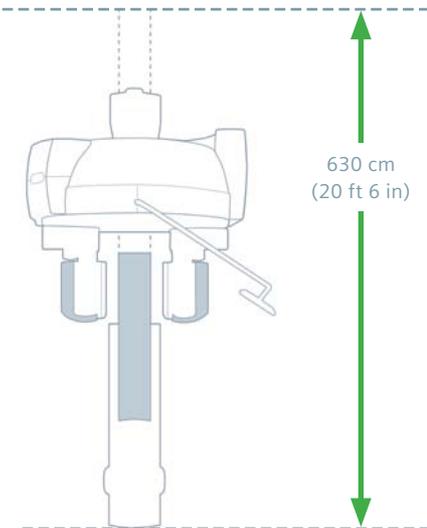
Most conventional SPECT/CT scanners have significant space requirements, which force healthcare institutions to either expand existing rooms or select a scanner based on size rather than performance.

Symbia T Series offers the smallest footprint of any diagnostic SPECT/CT on the market.\* Integrated CT improves access to high-quality diagnostic information, without the bulk. Symbia T2, T6 and T16 offer SPECT, CT and SPECT•CT capabilities in one room.

Conventional Scanner



Symbia T Series



## How it works

# Fast Spiral CT

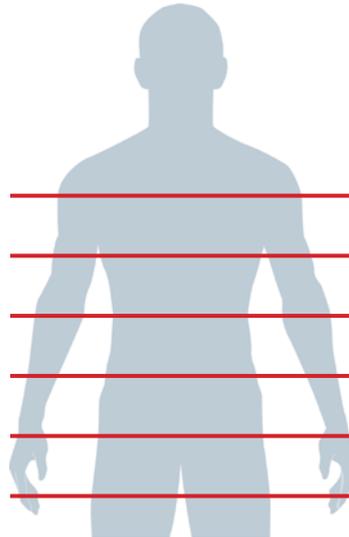
Conventional CT scanners may not detect certain lesions due to misregistration, which occurs when patient respiration varies during a scan, resulting in images that cannot be reconstructed.

Siemens Fast Spiral CT acquires scans within one breath hold to avoid most misregistration effects.

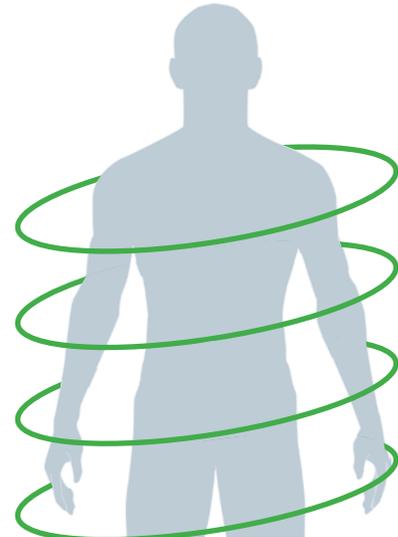
Fast Spiral CT benefits include:

- Scan a whole volume in one breath hold
- Reduce partial volume effects
- Reconstruct overlapping images without additional doses
- Obtain high-quality data for 3D-rendering

Conventional CT



Fast Spiral CT



## How it works

# Integrated ECG

High-Definition  
SPECT•CT

Minimum Dose and  
Maximum Speed

Full Automation

**Seamless Integration**

Customer Care

External ECGs on conventional scanners can be cumbersome to connect, use a cart that takes up valuable space and can increase the likelihood of equipment damage if cables are not properly stored.

With Symbia T Series, facilities can purchase an ECG that is fully integrated into the scanner bed, which allows fast patient connection, saves space and helps minimize risks presented by external cables.

Conventional ECG



Integrated ECG



## How it works

# Upgradability

Clinical and technological requirements in nuclear medicine are evolving rapidly. Conventional scanners are not able to accommodate the ever changing needs of healthcare facilities, physicians and patients.

Symbia T Series systems can be tailored to meet a facility's clinical, workflow and financial objectives. The integrated CT provides attenuation correction and can be upgraded to a 2-, 6- or 16-slice CT. Facilities can choose from a variety of exclusive solutions, such as IQ•SPECT, AQC, ACC, e.media and more.



### **Diagnostic SPECT•CT**

Symbia T16  
Symbia T6  
Symbia T2



### **Attenuation-Correction CT**

Symbia T

### **Available Options**

IQ•SPECT  
AQC  
ACC  
e.media  
Heartview CT+CS  
Pallets  
Extended Pivot

## Customer Care

# Dedicated to Your Success

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High-Definition  
SPECT•CT

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Minimum Dose and  
Maximum Speed

---

Full Automation

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Seamless Integration

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**Customer Care**

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Stay one step ahead and take full advantage of your Symbia SPECT•CT system with the Siemens Customer Care program. As a worldwide innovation leader in medical imaging, Siemens has applied this extensive experience to its molecular imaging solutions. Customers benefit from Symbia SPECT•CT capabilities and the innovative, flexible and comprehensive solutions that allow physicians to focus on delivering high quality patient care. The program helps maximize return on innovation throughout the entire life cycle of the system.

### **Updates and Upgrades**

Siemens Customer Care program provides solution updates and informs customers of the latest technological advancements. Workflow improvements, clinical applications and diagnostic functions are integrated into advanced technologies for equipment and IT. Siemens solutions support budget planning, system feature enhancements, access to new applications and lower cost upgrades.

### **Information and Communication**

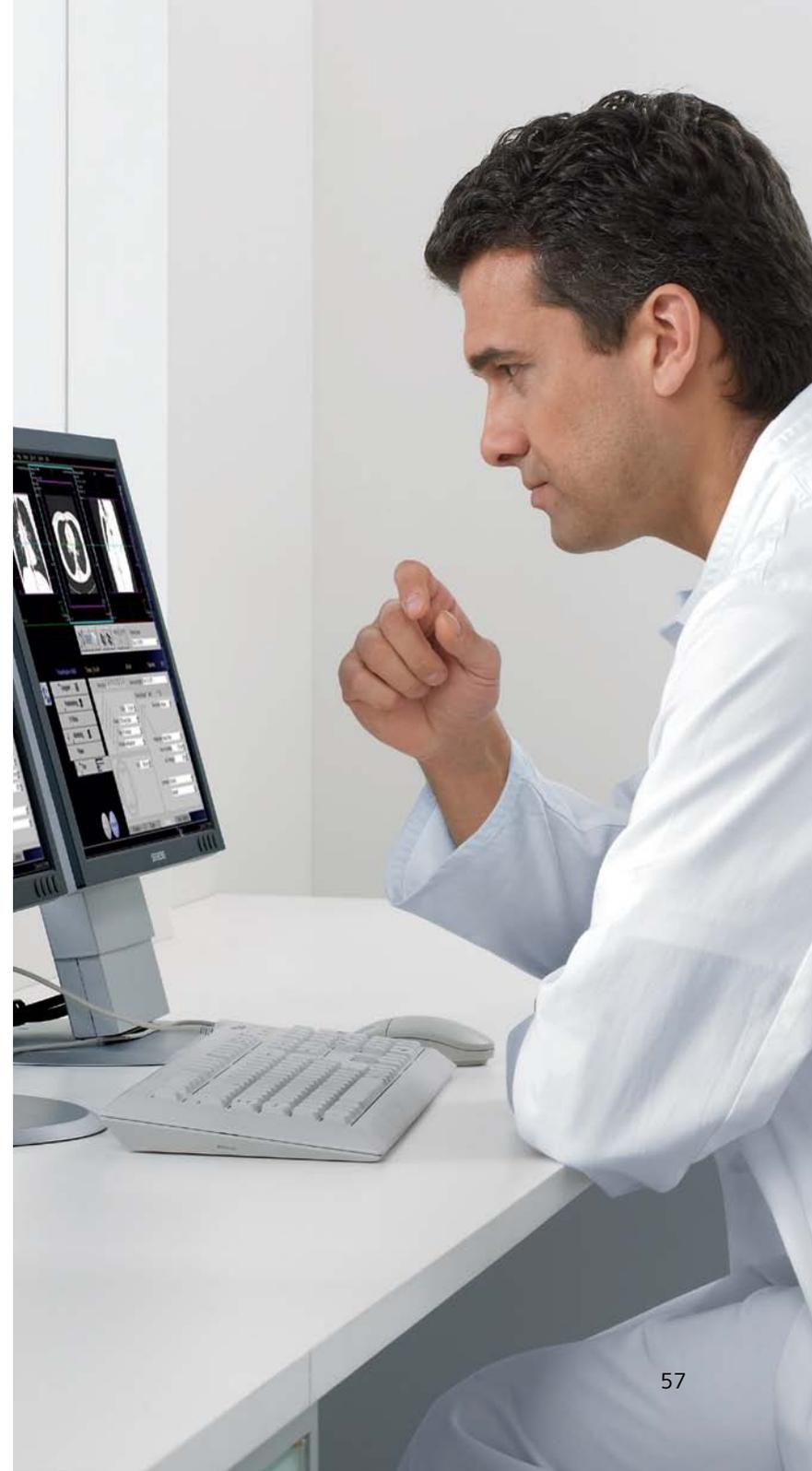
Siemens offers easily accessible information portals, monthly newsletters and a customer magazine *Imaging Life*. Siemens' customer portal, MI University 360, is a one-stop resource that helps customers maximize their investment by maintaining and increasing clinical and operational expertise.

### **Education and Training**

With an extensive portfolio of education and training programs, Siemens helps healthcare providers maximize the benefits of this advanced technology. Classroom trainings, hands-on workshops and seminars with renowned clinical experts offer a platform for valuable knowledge transfer that supports ongoing efforts to provide the best possible patient care.

### **Services and Support**

System availability, high-quality diagnostic information and optimized workflow are key factors in the success of the Symbia SPECT•CT service program. To meet performance expectations, programs such as Siemens Guardian Program™ monitors systems real-time to detect and address errors before problems occur, while also minimizing unplanned system downtime.



**Symbia**  
TruePoint SPECT-CT

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