The Most Economical CT of its Class.

SOMATOM Perspective
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SOMATOM Perspective
The Most Economical CT of its Class
Service providers in healthcare are increasingly facing economical challenges. At the same time, demand for flawless healthcare has intensified. These two factors make the efficient use of medical devices crucial to success in clinical practice. Siemens’ answer is the SOMATOM Perspective, a high-end CT scanner that delivers economical benefits without compromising clinical results.

Its innovative technologies improve diagnoses while reducing overall dose values, for example with Siemens’ raw-date based iterative reconstruction SAFIRE. The unique eMode allows users to operate the scanner in a way that is not only extremely patient- and user-friendly but also financially efficient.

In addition to providing excellent image quality at very low doses, consistent use of the eMode relieves the system of unnecessary wear, thus increasing the scanner’s life cycle.

The SOMATOM Perspective therefore helps institutions improve their financial performance while expanding their clinical portfolio and enhancing patient and user comfort. Put simply, the SOMATOM Perspective is the most economical CT scanner in its class.
Product Benefits
Manage your financial performance

The SOMATOM Perspective is designed to reduce costs, thus allowing more medical institutions to afford enhanced patient care.

Excellent image quality
The successful diagnosis and treatment of patients is largely determined by image quality. Medical staff need the best possible information to provide effective and efficient care. In this area, the SOMATOM Perspective sets a new standard. It provides the answers clinicians need while optimizing total cost of ownership – from the initial investment and runtime costs to innovative service solutions and improved workflow efficiency.

Efficient scanner usage with eMode
The unique eMode reduces wear and increases the scanner’s life cycle. With a single click, the scanner can be operated in a highly patient-friendly and financially efficient way. The potential for a longer life cycle is just one of the many economical advantages the SOMATOM Perspective offers. The eMode service contract, for example, offers additional economic benefits.
Economical scanner concept
Choosing SOMATOM Perspective also means choosing Siemens as a trusted partner. CT integrates reliable performance with innovations allowing it to be adjusted to users’ demands. The scanner can be fully upgraded onsite, growing with customers’ demands from 64- to 128-slice configuration.

Optimized total cost of ownership
The SOMATOM Perspective's sleek design and thin gantry only takes up 18 m² (194 sq.ft.) of floor space. Its installation is uncomplicated and often takes less than two days. As the SOMATOM Perspective requires less operating power, it also reduces the scanner's heat dissipation. Therefore it also requires less cooling, consequently reducing the overall power consumption: 71 kVA of electricity for only 7 kW of heat dissipation.

Next to the clinical requirements, the SOMATOM Perspective also addresses the workflow needs of technologists as well as the financial demands of business administrators.
Routine high-speed imaging
Detection of small fractures or bleeding in an acute care scenario is a challenge in CT imaging. Thanks to the combination of the unique Siemens SureView concept and a 38.4 mm detector width, trade-offs between scan speed and image quality are no longer necessary – and long scan ranges at sub-millimeter collimation are no longer difficult. Thus, SureView’s spiral image reconstruction algorithm facilitates challenging and long scans in clinical routine.

Dedication to low dose
In addition to excellent image quality, the SOMATOM Perspective offers an impressive spectrum of dose reduction features. The UFC Detector, for example, lowers radiation dose thanks to its short afterglow and fast decay behavior. CARE Dose4D™ adapts tube current to patient size in real-time for dose-efficient scanning. The SOMATOM Perspective also comes with CARE Dose4D pediatric modulation curves for scanning children.

Widen your clinical portfolio
The SOMATOM Perspective offers a wide range of features that help make even challenging exams clinical routine.
**Latest generation iterative reconstruction**

The SOMATOM Perspective has been designed to the outstanding diagnostic detail. It uses information from up to 128 slices with its unique Interleaved Volume Reconstruction (IVR). Adding the raw-data-based iterative reconstruction method SAFIRE (Sinogram Affirmed Iterative Reconstruction) delivers up to 60% dose* reduction and even superior image quality. It is easily incorporated into daily routine thanks to an excellent reconstruction speed of up to 15 images per second.

**Powerful cardio package**

For the complex procedures of cardiac imaging, the SOMATOM Perspective offers a variety of solutions. iTrim (Iterative Temporal Resolution Improvement Method), for example, makes possible a temporal resolution as low as 195 ms. In addition, there is the FAST Cardio Wizard, which provides step-by-step guidance towards higher reliability and reproducibility. The most suited arterial phases are automatically identified by ECG Check and Cardio BestPhase.

* In clinical practice, the use of SAFIRE may reduce CT patient dose depending on the clinical task, patient size, anatomical location, and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task.

The following test method was used to determine a 54 to 60% dose reduction when using the SAFIRE reconstruction software. Noise, CT numbers, homogeneity, low-contrast resolution and high contrast resolution were assessed in a Gammex 438 phantom. Low dose data reconstructed with SAFIRE showed the same image quality compared to full dose data based on this test. Data on file.
Ease your working day

The SOMATOM Perspective offers a streamlined workflow to ease the examination procedures for both staff and patients.

Streamlined workflow
To avoid unnecessary interruptions in the daily routine, the SOMATOM Perspective provides support during the entire scanning procedure. Patient positioning, often one of the most time-consuming steps in the exam process, is simplified with innovative features like the integrated storage box and the predefined buttons on the gantry control panel. The intuitive syngo® user interface further aligns procedures with the demands placed on staff.

Fast procedures in daily routine
Saving time, both at the onset of an exam and during reconstruction, enables staff to spend more time with patients and allows more scans per day. The SOMATOM Perspective includes Fully Assisting Scanner Technologies (FAST) that automate time-consuming procedures. Additionally, WorkStream4D, virtually eliminates manual reconstruction steps. Oblique and double-oblique reconstructions with up to 20 images per second are immediately available, thus making examinations faster.
Illumination Moodlight
The most striking design element of the SOMATOM Perspective is the Illumination Moodlight LED panel. It provides a more comfortable scanning environment and can be easily adjusted to the operator’s or the patient’s personal preference. The Illumination Moodlight changes color dynamically throughout the day or may be set to a single color that harmonizes best with the environment.

Integrated display panel*
The gantry front display shows current scan parameters such as kV, mA, scan time, table position, gantry tilt, and ECG trace – a great advantage during cardio exams.

Storage box
The convenient storage box holds all the basic CT positioning accessories. With accessories close at hand, patient positioning is faster and easier.

Slim design
The slim gantry design increases patient comfort while offering easy access for interventional procedures.

A streamlined workflow is a lot more than just throughput. It implies that both staff and the CT system are set for maximum efficiency in every case.

* Optional
Added Benefits with syngo.via

Regardless of volume or disease, syngo.via helps prepare cases, eases interdisciplinary collaboration, and helps facilitating a faster, more reliable diagnosis.

**syngo.**.via for sustainable care
As the number of chronic disease patients rises, the demand for high-quality and efficient care is increasing. syngo.via, Siemens’ state-of-the-art imaging software, creates an exciting experience in efficiency and ease of use. syngo.via helps foster sustainable care by equipping physicians with workflows and applications for evaluating images from multiple modalities. In cardiovascular CT, for example, it makes possible a rule-out of coronary artery disease in less than a minute.

**Automatic Case Preparation**
syngo.via assists in the analysis of individual cases, prepares images, suggests an optimized workflow, and offers guidance when needed. For example, when a cardiac case is opened, the Automated Case Preparation has already pre-processed the images and displays them in the appropriate layout together with the right evaluation tools. Evaluation of the coronary vessels, the functional parameters, and the prepared calcium score can start immediately.

**Image networking**
syngo.via speeds up the way users connect and share information with clinical partners and patients – even on the go.* syngo.via’s client-server-based nature supports a smooth, teamwork-like sharing of tasks, just as it is required in 3D labs and larger radiology departments. Images can be shared among multiple users at once, providing a sound basis for joint preprocedural planning.
Prerequisites include: internet connection to clinical network, DICOM compliance, meeting of minimum hardware requirements, and adherence to local data security regulations.

**Functions tailored to any clinical field**

Every syngo.via includes standard functionality for general 2D, 3D, and 4D multi-modality reading. To complement this standard configuration, Siemens offers the CT Clinical Engines. They represent new dimensions in diagnostic possibilities and workflow efficiency. CT Clinical Engines are fine-tuned bundles for specific diagnostic procedures that contain the most innovative scanner hardware for acquisition and highly advanced software applications for evaluation.

**Oncology imaging**

Combining CT spatial resolution with fast and affordable acquisition technology, the SOMATOM Perspective makes the perfect fit for radiological assessment in oncology. Oncology imaging is all about reliably finding the tumor measuring it, and identifying all its metastases. After initial diagnosis, the follow-up comparison of all cancerous findings at different points in time is part of the patient monitoring.

**CT Oncology Engine**

Oncology imaging demands fast acquisition to eliminate motion artifacts. In addition, X-ray exposure must be minimized, especially when numerous follow-up CT scans may have to be performed. Advanced iterative image reconstruction reduces the need for additional doses without compromising diagnostic information in any way. Combined with the CT Oncology Engine, it is an ideal way to facilitate reliable quantification for oncological diagnoses.

*Prerequisites include: internet connection to clinical network, DICOM compliance, meeting of minimum hardware requirements, and adherence to local data security regulations.*
Clinical Images
Neurology – non-contrast cerebral spiral scan. Axial images demonstrate excellent soft tissue contrast resolution. No clinical findings.
Acute Care – pulmonary spiral scan with contrast media. Axial, MPR, and VRT images reveal detailed information to the sub-segmental pulmonary embolisms in great details.

collimation: 64 x 0.6 mm
scan time: 4 s
scan length: 305 mm
rotation time: 0.6 s
tube settings: 110 kV, 75 mAs
CTDvol: 5.59 mGy
DLP: 241.46 mGy cm
eff. dose: 3.38 mSv
Oncology –
high resolution pulmonary scans.
Axial and MPR images show excellent spatial resolution for pulmonary structures. A solid, irregular nodule is clearly depicted in the right upper lobe suggesting a lung tumor. Fibrosis and ground glass opacifications are also visualized in the left lung.
Acute Care –
high-resolution scan. Axial and MPR images reproduce excellent spatial resolution for bone structure. A calcaneal fracture is clearly seen.
Cardiology –
coronary CT Angiography. A VRT image depicts an LAD stenosis with calcified plaques.

collimation: 64 x 0.6 mm
scan time: 6 s
scan length: 105 mm
rotation time: 0.48 s
temporal resolution: 195 ms
tube settings: 130 kV, 213 mAs
heart rate: 52 bpm
CTDvol: 23.43 mGy
DLP: 377.49 mGy cm
eff. dose: 5.28 mSv
Vascular imaging – run-off CT Angiography. VRT and MIP images present great vascular details and long scan coverage. The aorta and its branches are heavily calcified.

Radiology of Stauferklinikum, Mutlangen, Germany

collimation: 64 x 0.6 mm
scan time: 33 s
scan length: 1174 mm
rotation time: 0.6 s
tube settings: 110 kV, 150 mAs
CTDvol: 11.12 mGy
DLP: 1393.08 mGy cm
eff. dose: 7.71 mSv
3D Intervventional imaging – interventional procedures, such as lung nodule biopsies can be navigated in all three dimensions.

- Collimation: 64 x 0.6 mm
- Scan time: 0.92 s
- Scan length: 60 mm
- Rotation time: 0.6 s
- Tube settings: 130 kV, 70 mAs
- CTDIvol: 7.87 mGy
- DLP: 147.67 mGy cm
- Eff. dose: 2 mSv
Bariatric imaging – an abdominal scan of an obese patient. Axial and MPR images clearly demonstrate multiple hepatic lesions, despite the presence of ascites. VRT image shows the vascular structures of the abdominal aorta.

collimation: 64 x 0.6 mm
scan time: 6 s
scan length: 239 mm
rotation time: 0.6 s
tube settings: 110 kV, 166 mAs
CTDInvol: 12.33 mGy
DLP: 390.46 mGy cm
eff. dose: 5.8 mSv
Core Technologies
SAFIRE delivers excellent clinical results with up to 60% dose reduction or superior image quality at a reconstruction speed suitable for daily routine.

**SAFIRE**

- More powerful dose reduction than image-based methods
- Well-established image impression
- Superior image quality
- Fast reconstruction in image and raw-data space
- Improved workflow with variable settings

**Standard Filtered Back Projection**

- Ultra-fast reconstruction without iterations
- Well-established image impression
- Limited dose reduction

**SAFIRE**

- Raw data recon
- Image data recon
- Image correction
SAFIRE
Sinogram Affirmed Iterative Reconstruction (SAFIRE) brings the full dose-saving potential of iterative reconstruction into clinical practice. New image reconstruction systems (IRS) provide enough computational power to deliver a reconstruction performance of up to 15 images per second, thus making SAFIRE suitable for everyday use. After initial reconstruction with weighted filtered back projection (WFBP), a series of iterative reconstruction loops are performed.

Image validation
In the first loop, the CT images are retransferred to raw data and visualized in the so-called sinogram, which models all relevant geometrical properties of the CT scanner. By comparing this synthetic raw-data with the acquired data, deviations are identified. A further iteration loop compares the images with homologous reference data. This procedure can be regarded as validating (or affirming) the current images. An updated image is then reconstructed, using the detected deviation.

60% reduced dose*
In each iteration, a dynamic raw-data-based noise model is applied that makes possible reduction of image noise without noticeable loss of sharpness. This optimization process makes even better use of the diagnostic information contained in the raw data. Using multiple iterations, geometrical imperfections are corrected and image noise is reduced incrementally. Thus, SAFIRE enables a radiation dose reduction of up to 60% or improved image quality in regards to contrast, sharpness, and noise.

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iTRIM

iTRIM delivers outstanding clinical efficacy using a novel CT image reconstruction algorithm to enhance temporal resolution.

The Iterative Temporal Resolution Improvement Method (iTRIM) is designed to improve the temporal resolution of cardiac CT imaging for systems not offering the highest rotation speeds. iTRIM provides a superior temporal resolution compared to conventionally reconstructed CT images, while maintaining the same overall image impression. This iterative image reconstruction algorithm improves the temporal resolution by 20% and effectively reduces motion artifacts.
Dealing with motion artifacts
iTRIM is based on the observation that the presence of motion artifacts does not significantly change the histogram of a CT image. This information is used to reconstruct an image from less than half a turn of data. First, a partial cardiac scan is performed with weighted filtered back projection (WFBP), which results in a temporal resolution equivalent to 180° of CT data. Then, an iterative reconstruction algorithm is started, using only a subset of the full 180° cardiac dataset.

Improved temporal resolution
In regions that exhibit motion, the iTRIM image is used as the final image, whereas in static regions the WFBP image is used. While iTrim maintains the same noise level and overall image quality, the reduction in motion artifacts is clearly visible and was also objectively validated in a clinical study.* The temporal resolution of the iTRIM reconstruction technique may enhance the temporal resolution by 20 %. On the SOMATOM Perspective, iTRIM can obtain a temporal resolution as low as 195 ms.

Reconstructions using a cardiac WFBP (left) and the iTRIM algorithm (right). The results using iTRIM show significantly reduced motion artifacts compared to the regular reconstruction using WFBP.

eMode

eMode responds to the demand for more efficiency by operating the scanner in an outstanding patient-friendly and cost-effective way – at a single click.

Well-balanced scanner usage
Scanning in eMode enables the optimum correlation of dose, image quality, and efficiency. All routine standard protocols are efficiently fine-tuned. If the software solution detects an efficiency conflict, eMode gives a recommendation to use the single click functionality to optimize parameter settings, thus avoiding that the system is utilized inefficiently at peak or system limit values.
Siemens service offerings
Siemens UPTIME Services focuses on real-time remote monitoring and preventive maintenance, enabling increased system availability, optimized performance, and workflow efficiency. A service contract, including Utilization Management (UM) and tube coverage for the SOMATOM Perspective, allows users to take full advantage of eMode benefits.

Detailed utilization information
The SOMATOM Perspective usage will be monitored 24/7 via Siemens Remote Service (SRS) and every scan will be tracked and summarized in the UM reports. UM will provide exact information detailing the CT performance indicators, including how much eMode was utilized.

Service Benefits*
1. syngo Remote Trainer
2. Preventive maintenance out of prime working time
3. syngo Remote Assist
4. eMode service contract adjustments

* Individual service benefit availability is subject to country-specific offerings.

www.siemens.com/perspective-emode
Customer Services

A range of innovative service solutions that raise quality and productivity in healthcare.

eMode service benefits*
The system will be analyzed every 12 months in order to determine the eMode usage: if eMode was used for at least 80% of the scans, customers are entitled to select one of the valuable eMode service benefits. Users can significantly profit from these benefits and leverage the efficiency potential of their scanners.

1. syngo Remote Trainer
   Users may gain expertise in new clinical areas or become more familiar with any application chosen.

2. Preventive maintenance
   eMode usage benefit may be applied to preserve uninterrupted workflows by opting for overnight maintenance services.

3. syngo Remote Assist
   One-on-one remote assistance exactly when needed for any difficulty encountered.

4. eMode service contract adjustments
   The service contract price may be actively optimized for each coming year, thus reflecting the advantages of consistent eMode usage.
Siemens Performance Plans
Service and maintenance are highly important to prevent unscheduled downtimes. Siemens Performance Plans are designed to help run operations smoothly and thus to improve workflow – with predictable costs, lower risks, and higher efficiency. Modules can be combined with a Performance Plan Pro, Plus, or Top and an individual solution with substantial benefits. Siemens Virus Protection, for example, offers top-level defense against viruses.

Education
Know-how is the key to success. With the extensive Siemens portfolio of education and training programs, healthcare practitioners can deepen their knowledge and clinical expertise. The portfolio offers a wide range of choices:

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

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