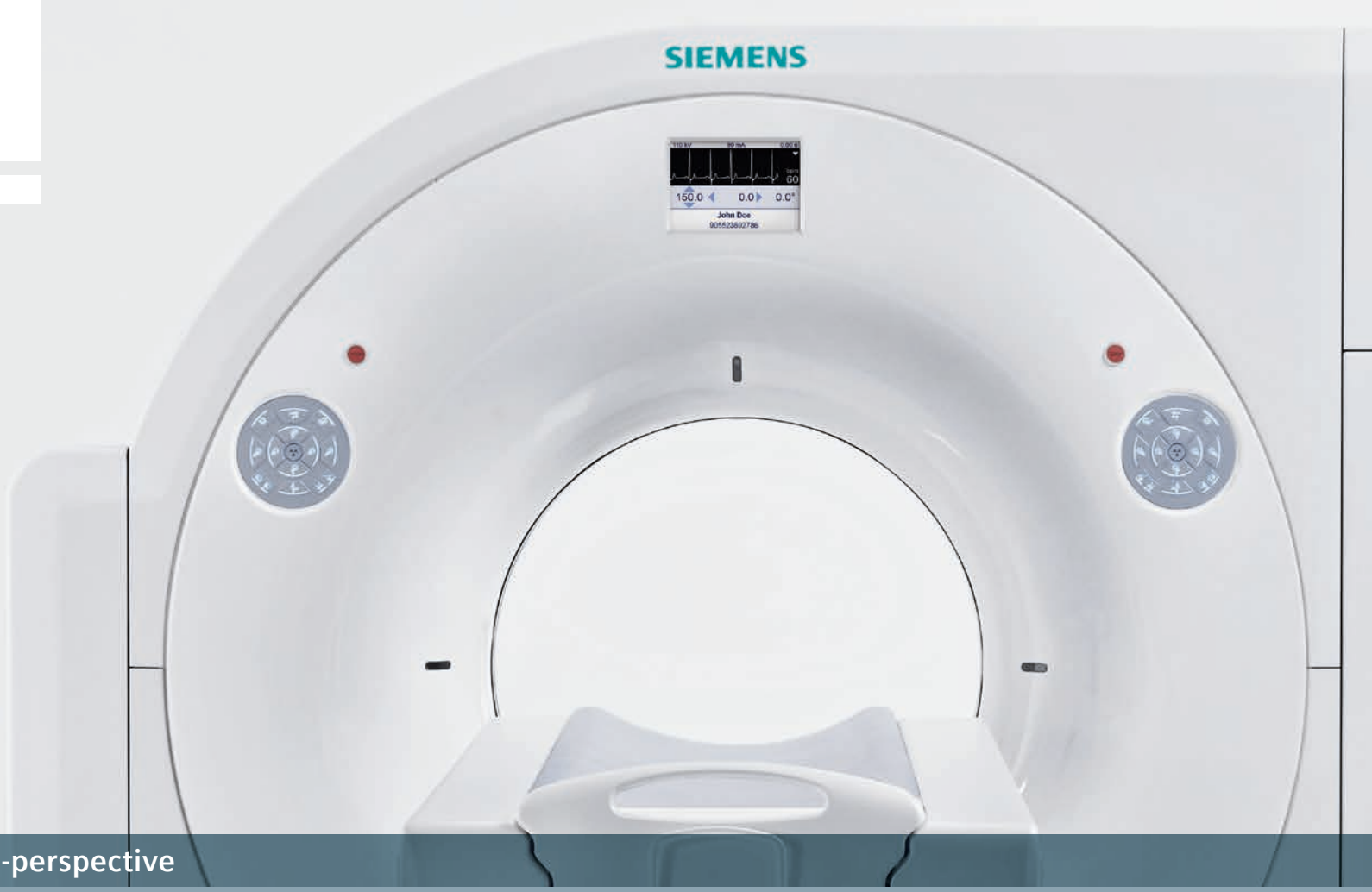
SIEMENS



siemens.com/somatom-perspective

SOMATOM Perspective

International version. Not for distribution in the US.

“Open new opportunities” VS. “Close doors to growth”

Second best is not an option.


SIEMENS
SOMATOM
Perspective

SOMATOM Perspective

“Open new opportunities” VS. “Close doors to growth”
Second best is not an option.

Healthcare service providers are increasingly facing rising costs and shrinking budgets. 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 has the ideal answer to these challenges: SOMATOM Perspective, a CT scanner applicable for all clinical fields that delivers economical benefits without compromising on patient care.

Equipped with innovative Siemens technology, such as the raw-data based iterative reconstruction SAFIRE*, SOMATOM Perspective enables better diagnosis while reducing dose – without sacrificing image quality.

SOMATOM Perspective also improves cost efficiency. The unique eCockpit extends the scanner’s lifespan by preventing unnecessary wear and tear, and reduces overheads by minimizing energy consumption. Plus, SOMATOM Perspective is available in four upgradable configurations, giving healthcare facilities the possibility to tailor the investment to their needs and to grow accordingly.

In short, SOMATOM Perspective helps to enhance patient care and improve financial performance – opening new opportunities for hospitals and clinics.

* 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.

Benefits

Widen your clinical portfolio

SOMATOM Perspective covers a wide range of clinical fields and makes even challenging exams routine.

Image quality

High-quality, detailed images are essential for accurate diagnoses, particularly when it comes to small structures – for example, when evaluating fractures. SOMATOM Perspective is equipped with Interleaved Volume Reconstruction (IVR), a technology that enhances spatial resolution along the patient's longitudinal axis by increasing the number of data points. For this, IVR generates up to 128 slices during the image reconstruction. This makes it possible to visualize very small structures, such as fine fractures.

The right dose

Multiple follow-up scans and intraoperative imaging are becoming standard in clinical practice – so minimizing patients' and medical professionals' radiation exposure is more important than ever. In addition, low-dose exams make facilities more attractive for referring physicians. SOMATOM Perspective offers a number of impressive dose-reduction features, one particularly innovative feature is the Sinogram Affirmed Iterative Reconstruction (SAFIRE). It makes it possible to reduce dose by up to 60%*.

iMAR – iterative Metal Artifacts Reduction

Improves diagnostic confidence by reducing metal artifacts – even in challenging cases like dental fillings, spine implants, and pacemakers.
iMAR is based on the Adaptive Sinogram Mixing. It combines a strong metal artifact removal method in areas with severe artifacts and a soft correction in areas with less severe artifacts.
The result is an outstanding image quality with metal artifacts removed while valuable information remains.

SOMATOM Perspective is based on a brand-new system platform that supports a wide range of clinical fields to open new opportunities for hospitals and clinics.

CT-guided interventions

There is a growing need for CT image guidance in minimally invasive interventions. SOMATOM Perspective is perfectly suited for guided biopsies, drainages and spinal injections. It enables 2D CT guidance and CT fluoroscopy to scan continuously, and makes it possible to view images in near real-time to hit the target on the first try. The wireless tableside i-Control provides full control of table movement and software functions. This level of usability is unprecedented on the market and gives Siemens a definitive edge in CT-guided intervention.

Single Source Dual Energy

Metal artifacts can present a major challenge when imaging hip implants or complicated fractures for post-surgery diagnosis. This is where Single Source Dual Energy technology comes in. It adds valuable quantitative information to the morphology of conventional CT scans to significantly reduce metal artifacts. Single Source Dual Energy technology can also be used in other clinical fields, such as evaluating kidney stones and verifying gout diagnoses. And best of all, the examination is as easy to set up as a regular spiral scan.

Full cardio functionality

Multiple features are available for streamlining and enhancing complex cardiac imaging procedures. iTRIM (Iterative Temporal Resolution Improvement Method), for example, improves the temporal resolution to as low as 195 ms to reduce motion artifacts in cardiac imaging. The FAST Cardio Wizard provides step-by-step guidance for higher reliability and reproducibility. Moreover, ECG Check and Cardio BestPhase automatically identify the most suitable arterial phases.

* 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.

Manage your financial performance

SOMATOM Perspective is designed to reduce costs across the entire lifecycle, allowing more medical institutions to enhance patient care.

The most economical CT of its class

When choosing a CT scanner, there is much more to consider than just the initial investment. Running costs, added up over the hardware's lifetime, must also be factored in when calculating the return on investment. SOMATOM Perspective was designed for cost-effective installation and everyday operation. With its slim gantry and sleek design, SOMATOM Perspective takes up just 18.5 m^2 (199 ft^2) of floor space. Installation is simple, and often takes less than two days. As it only requires 70 kVA, there is no need for power upgrades – allowing you to use existing CT electricity sources. The low power requirement reduces the scanner's heat dissipation to just 8.5 kW. This means it requires less cooling, reducing overall electricity consumption by up to 50% compared to a conventional CT scanner.

In addition to clinical requirements, SOMATOM Perspective also addresses financial demands of business administrators.

Efficient operation with eCockpit

Today's medical facilities face increasing pressure to cut costs while maintaining or boosting standards of care. For CT departments, this means minimizing runtime costs while delivering better clinical diagnoses. This is where SOMATOM Perspective's unique eCockpit suite comes in. eCockpit is a bundle of new features that support highly economic scanner usage and reduce overhead costs. The entire working day was taken into account, from start-up to scanning to scan breaks. eStart gradually warms up the tube after extended periods of non-use (such as overnight), reducing wear and tear associated with cold starts of the tube. eMode automatically helps to ensure the optimum balance between dose, efficiency, and image quality – and further extends the scanner's lifespan. eSleep minimizes electricity consumption while the scanner is not in use, for example overnight or during breaks, avoiding increases in operating costs.

Future-proof investment

Healthcare facilities operate in a rapidly changing and often unpredictable financial environment – so flexibility is a must. Choosing SOMATOM Perspective means being prepared for today and tomorrow. The scanner is available in four upgradeable configurations: from the versatile 16-slice to the powerful 128-slice version for more advanced applications. It can be fully upgraded on-site, at any time – making it a future-proof investment that can grow with changing needs and open new opportunities.

Ease your working day

SOMATOM Perspective offers a streamlined workflow to ease examination procedures for both users and patients.

Expediting the daily routine

Efficient workflows are key in today's medical facilities. To this end, all SOMATOM Perspective configurations feature Fully Assisting Scanner Technologies (FAST) to automate time-consuming processes. In the daily routine, FAST Planning enables one-click positioning of the scan and recon range, ensuring a more reproduceable, faster and more standardized workflow. This reduces the risk of rescanning due to incorrect positioning. In addition, this feature can be used in critical clinical situations where there is no time for extensive manual CT preparations.
FAST Spine helps streamline another highly time-intensive task: the preparation of anatomically aligned spine reconstructions. The software detects and labels vertebrae within a predetermined scan area, and calculates their position for anatomically correct image reconstruction. This delivers significant time savings while reducing the risk of mislabeling associated with manual preparation.

A streamlined workflow is about more than just throughput. It also provides maximum efficiency of both staff and the CT system, for every case.

Illumination Moodlight™

Making examinations less stressful, particularly for children and claustrophobic patients, helps optimize workflows and boost throughput. SOMATOM Perspective includes the Illumination Moodlight – an LED panel integrated into the sleek, modern gantry. The color can be easily adjusted to the operator's or the patient's preference, providing a more comfortable scanning environment. The Illumination Moodlight can change color throughout the day, or may be set to a single tone that harmonizes with the room.

Integrated display panel

The display panel on the front of the gantry shows current scan parameters such as kV, mA, scan time, table position, gantry tilt, and ECG trace – a major benefit during cardio exams. In addition, it displays the patient's name for better communication.

Storage box

Having accessories close at hand makes patient positioning faster and easier. The convenient integrated storage box holds all basic CT positioning accessories.

Slim design

SOMATOM Perspective boasts a very slim gantry: just 68 cm (26.8 inches) deep. This streamlined design increases patient comfort and provides easy access during interventional procedures.

Added benefits of post-processing

The post-processing software *syngo*.via from Siemens helps prepare cases, enhances interdisciplinary collaboration, and facilitates faster, more reliable diagnoses.

syngo®.via for sustainable care

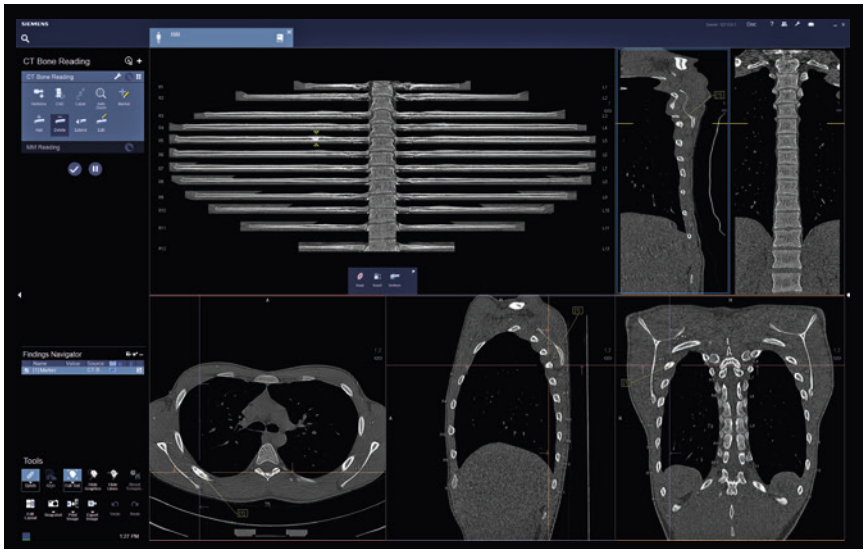
As the number of chronic disease patients rises, the demand for high-quality and efficient care is increasing. *syngo*.via, Siemens' state-of-the-art imaging software, provides an excellent user experience and boosts efficiency. *syngo*.via helps foster sustainable care by equipping physicians with workflows and applications for evaluating images from multiple modalities – also including Computed Tomography.

Automated 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, 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 configuration supports task sharing within teams, just as 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.



***syngo*.CT Bone Reading –** rib and spine assessment redefined (left).

CT Oncology Engine – single-click oncological quantification (right).

Functions tailored to any clinical field

syngo.via includes standard functionality for general 2D, 3D, and 4D multi-modality reading. To complement this standard configuration, Siemens offers additional specialized applications – available either single or bundled as the CT Clinical Engines. Engines are fine-tuned for specific diagnostic procedures, comprising the most innovative scanner hardware and highly advanced software applications. SOMATOM Perspective optionally features the CT Acute Care Engine, the Cardio-Vascular Engine, the CT Neuro Engine, and the CT Oncology Engine.

Oncological imaging

One of the most common CT use cases is oncological imaging. Here, SOMATOM Perspective and *syngo*.via are an ideal combination. They make it possible to reliably find the tumor, stage it, and conduct follow-up comparisons of all cancerous findings at different time points. Besides semi-automated RECIST and volume measurements, the CT Oncology Engine even allows quantification beyond size. Advanced HU Statistics provides quantification of tumor tissue, identifying hypodense areas that could be an indicator of tumor necrosis and potential therapy response (right image above). In addition, *syngo*.CT Bone Reading delivers revolutionary visualization of the bony structures that need to be assessed in every routine chest and abdominal CT scan. The ribs and spine are displayed “rolled” onto a 2D image plane (left image above), for simpler reading. In short, SOMATOM Perspective and the CT Oncology applications provide quantitative information for making well-informed decisions.

* Prerequisites include: internet connection to clinical network, DICOM compliance, meeting of minimum hardware requirements, and adherence to local data security regulations.

Clinical images

collimation:
64 x 0.6 mm

scan time:
5.1 s

scan length:
433 mm

rotation time:
0.6 s

tube settings:
130 kV, 90 eff. mAs

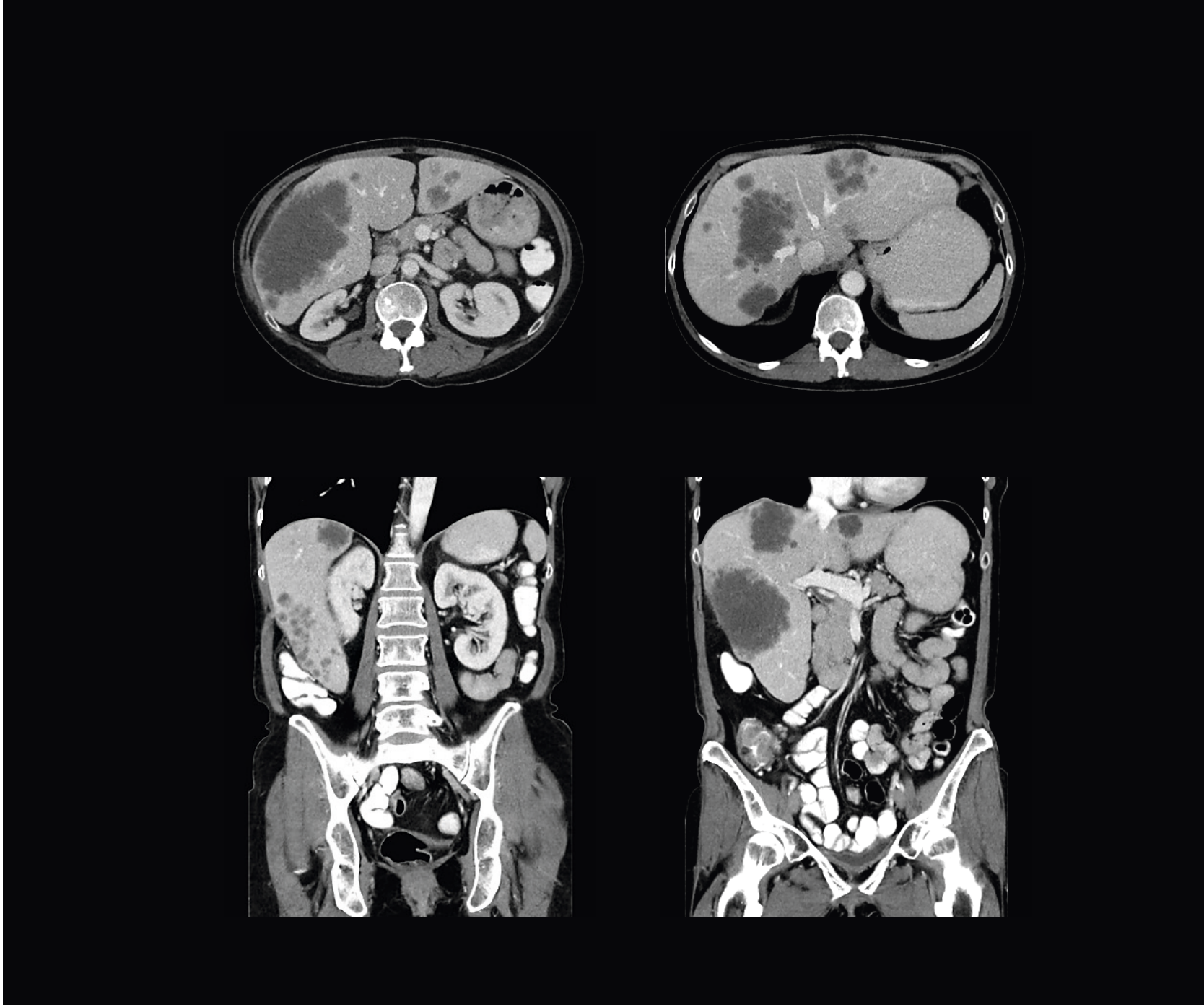
CTDIvol:
5.51 mGy

DLP:
260.22 mGy cm

effective dose:
3.9 mSv

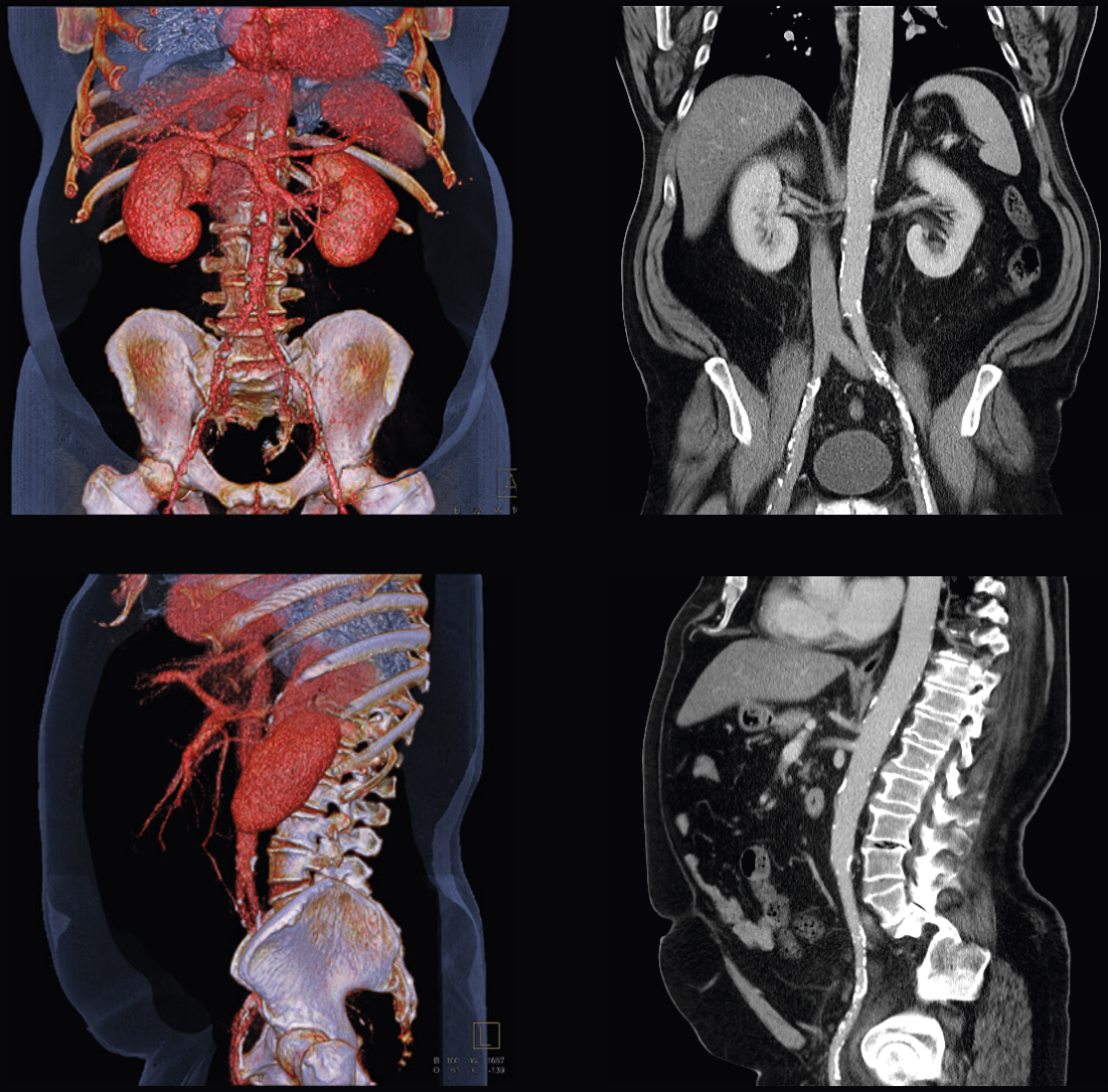
scanned with:

eMode



Oncological CT – abdominal contrast scan
Axial and MPR images show multiple, irregular, hypodense lesions with peripheral enhancement in the liver suggesting metastases.

Courtesy of Radiology Department of Israelitisches Krankenhaus, Hamburg, Germany



collimation:
64 x 0.6 mm

scan time:
15 s

scan length:
488 mm

rotation time:
0.6 s

tube settings:
110 kV, 198 eff. mAs

CTDIvol:
14.61 mGy

DLP:
822.65 mGy cm

effective dose:
12.34 mSv

Routine CT – abdominal contrast scan of an obese patient (BMI 42.32, 148 kg)
VRT and MPR images demonstrate excellent soft tissue contrast despite the obesity. Calcified plaques in the abdominal aorta and bilateral iliac arteries are also clearly shown.

Courtesy of Institut Sainte Marie, Osny, France

collimation:
64 x 0.6 mm

scan time:
6 s

scan length:
141 mm

rotation time:
0.48 s

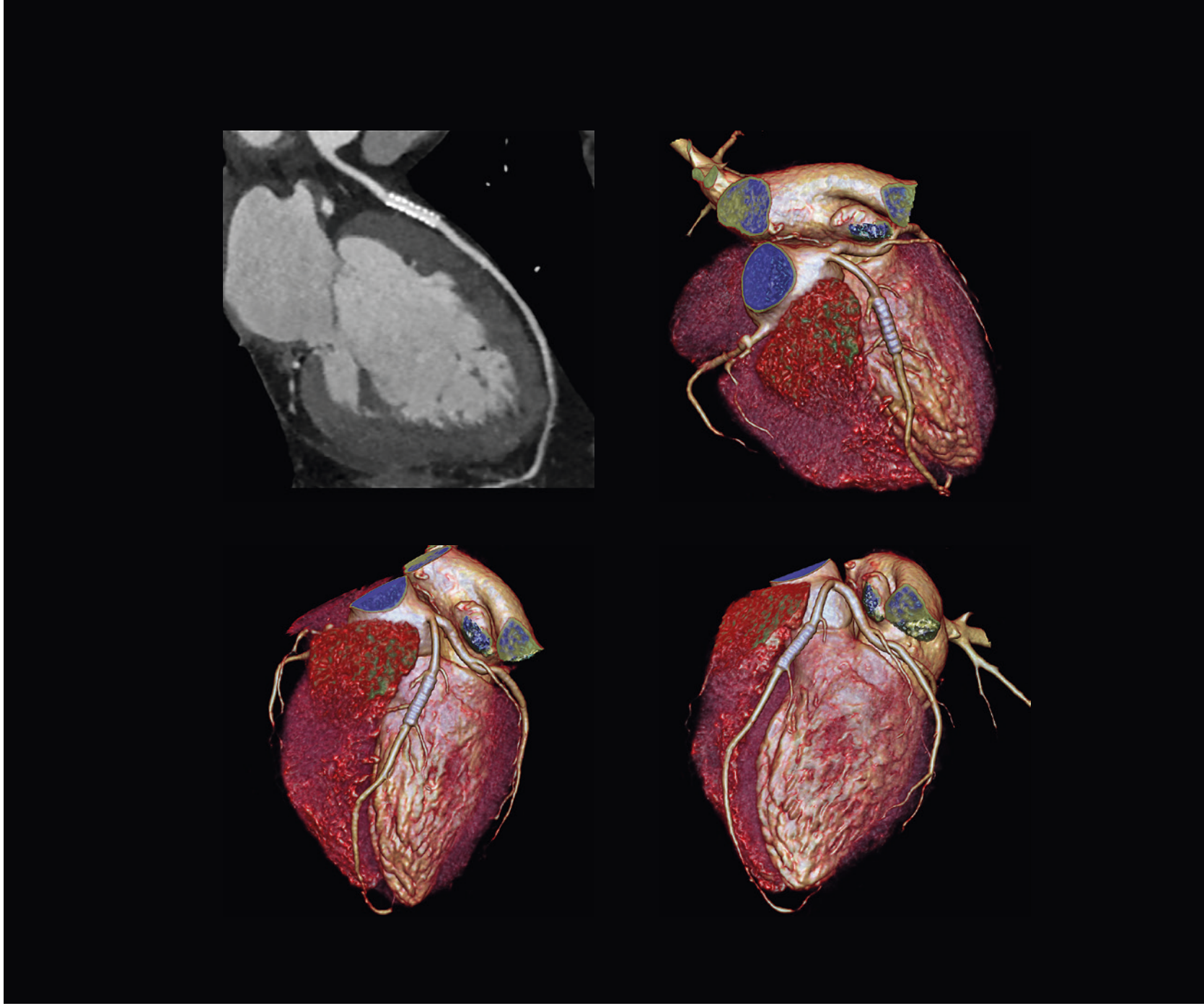
tube settings:
130 kV, 115 eff. mAs

heart rate:
54 bpm

CTDIvol:
12.80 mGy

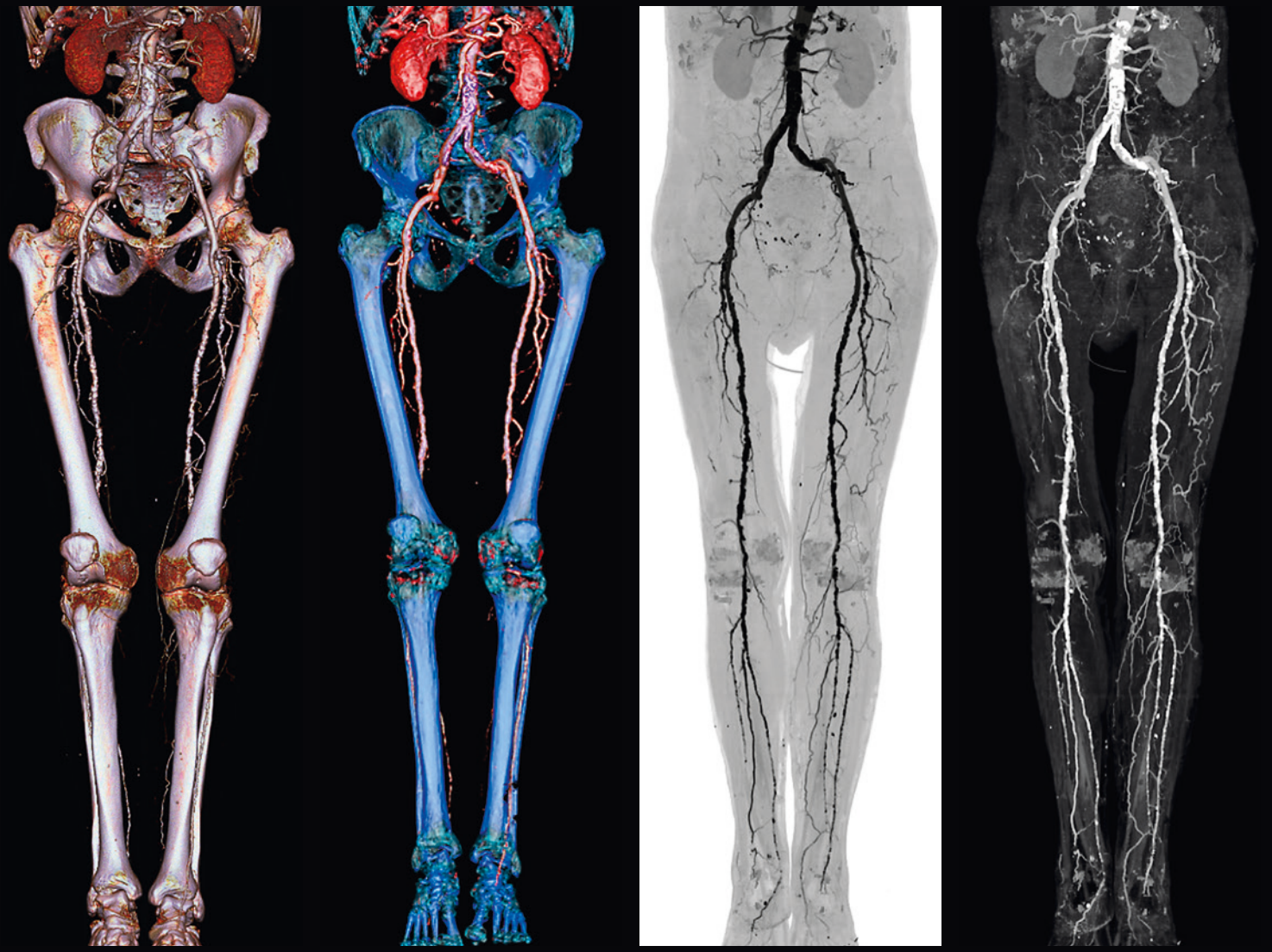
DLP:
256.77 mGy cm

effective dose:
3.59 mSv



Cardiac CT –
ECG gated spiral scan
VRT and curved MPR images show a patent stent in the mid LAD.

Courtesy of SAMS Hospital, Lisbon, Portugal



collimation:
64 x 0.6 mm

scan time:
33 s

scan length:
1,174 mm

rotation time:
0.6 s

tube settings:
110 kV, 150 eff. mAs

CTDIvol:
11.12 mGy

DLP:
1,393.08 mGy cm

effective dose:
7.71 mSv

scanned with:

eMode

Vascular CTA –
runoff CT angiography
VRT and MIP images present a heavily calcified aorta and its branches in great detail.

Courtesy of Radiology Department of Stauferklinikum, Mutlangen, Germany

collimation:
32 x 0.6 mm

scan time:
19 s

scan length:
160 mm

rotation time:
1.5 s

tube settings:
130 kV, 234 eff. mAs

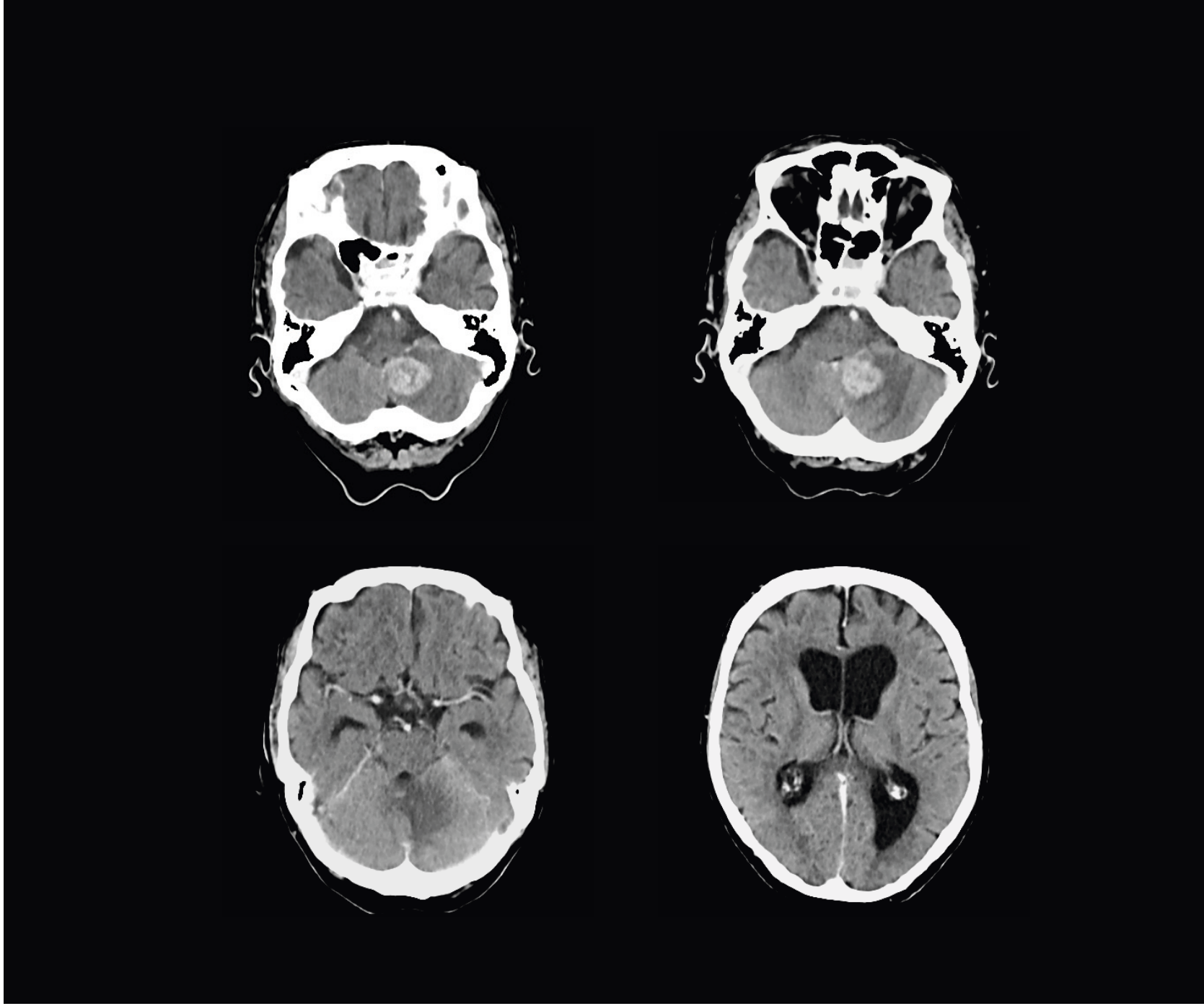
CTDIvol:
49.37 mGy

DLP:
892.67 mGy cm

effective dose:
1.87 mSv

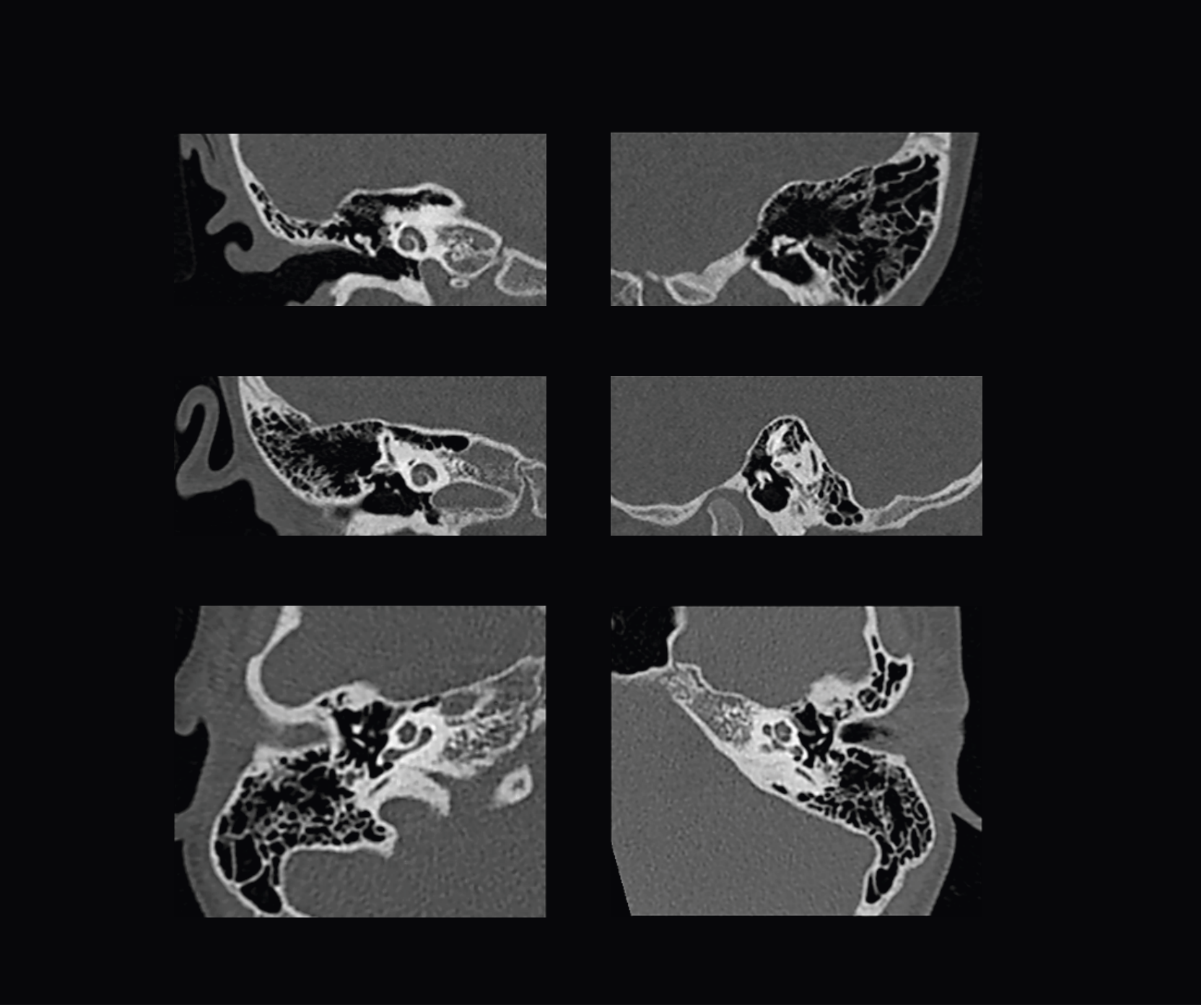
scanned with:

eMode



Neurological CT – cerebral contrast tilted spiral scan
Axial images show an enhanced mass in the left lobe of the cerebellum. The mass expands, distorts, and compresses the brainstem and the fourth ventricle.

Courtesy of Radiology Department of Israelitisches Krankenhaus, Hamburg, Germany



collimation:
32 x 0.6 mm

scan time:
5 s

scan length:
34 mm

rotation time:
1.5 s

tube settings:
130 kV, 79 eff. mAs

CTDIvol:
19.16 mGy

DLP:
390.02 mGy cm

effective dose:
1.25 mSv

scanned with:

eMode

Pediatric CT –
temporal bone HR spiral scan
MPR images present the normal structures of the middle and inner ears in great detail using IVR.

Courtesy of Institut Sainte Marie, Osny, France

collimation:
16 x 1.2 mm

scan time:
14 s

scan length:
421 mm

rotation time:
0.6 s

tube settings:
110 kV, 112 eff. mAs

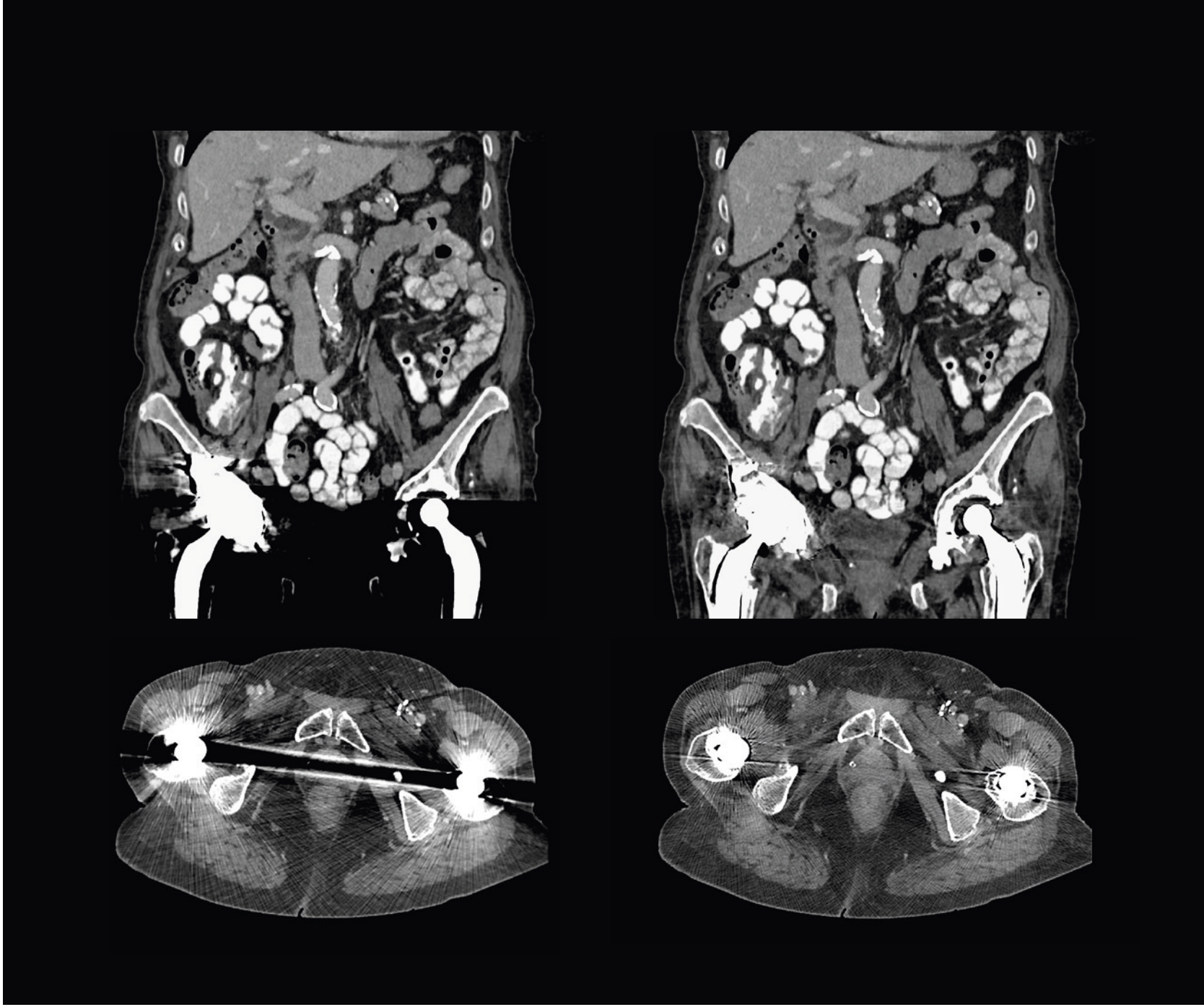
CTDIvol:
7.92 mGy

DLP:
357.85 mGy cm

effective dose:
5.37 mSv

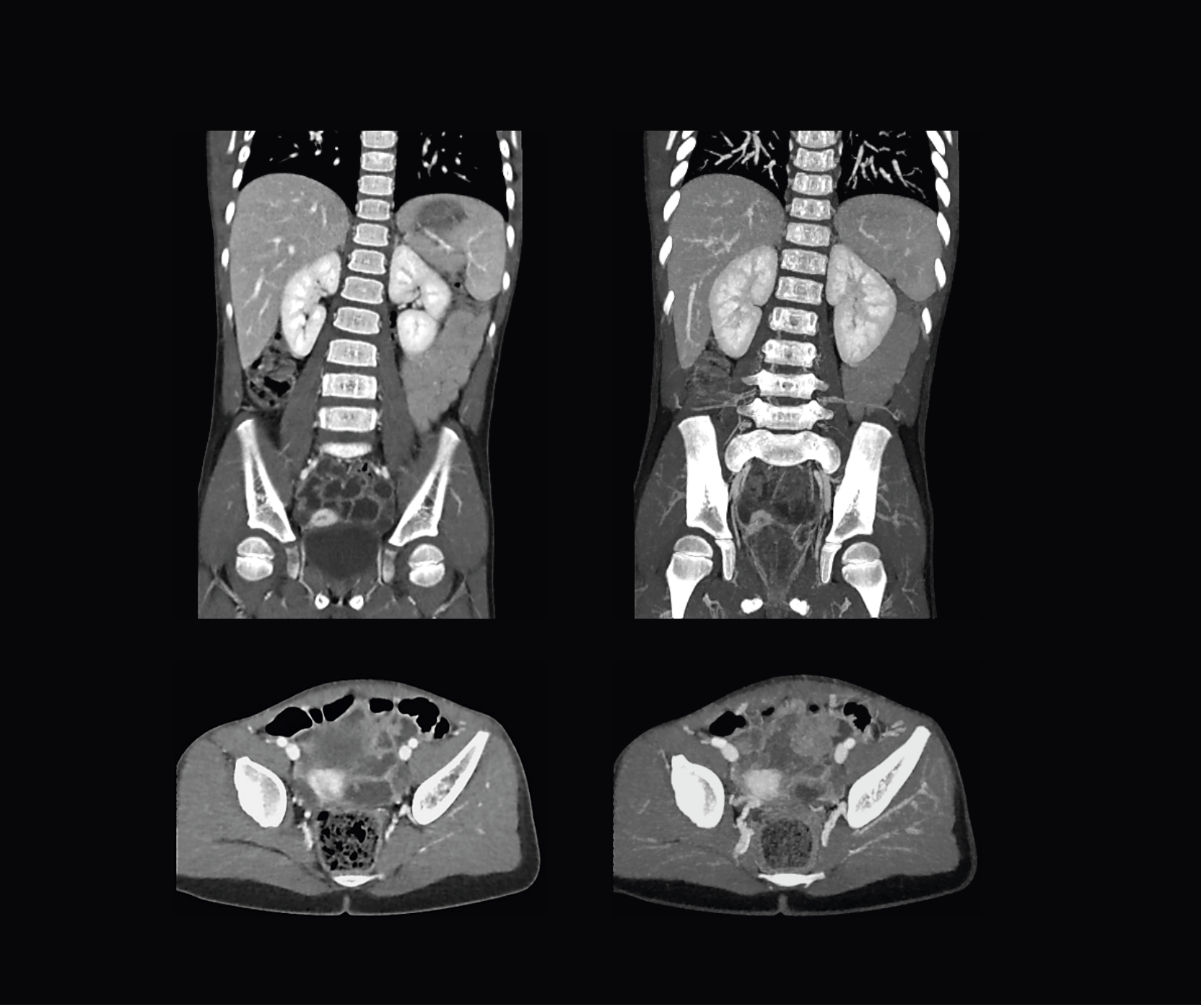
scanned with:

eMode



iMAR – iterative Metal Artifact Reduction removes or mitigates artifacts
Two hip prostheses where iMAR clearly reduces metal artifacts to evaluate the lower pelvis.

Courtesy of Clinique de Meudon, Meudon la Fôret, France



collimation:
64 x 0.6 mm

scan time:
3 s

scan length:
294 mm

rotation time:
0.6 s

tube settings:
80 kV, 33 eff. mAs

CTDIvol:
0.93 mGy

DLP:
40.26 mGy cm

effective dose:
1.93 mSv

scanned with:

eMode

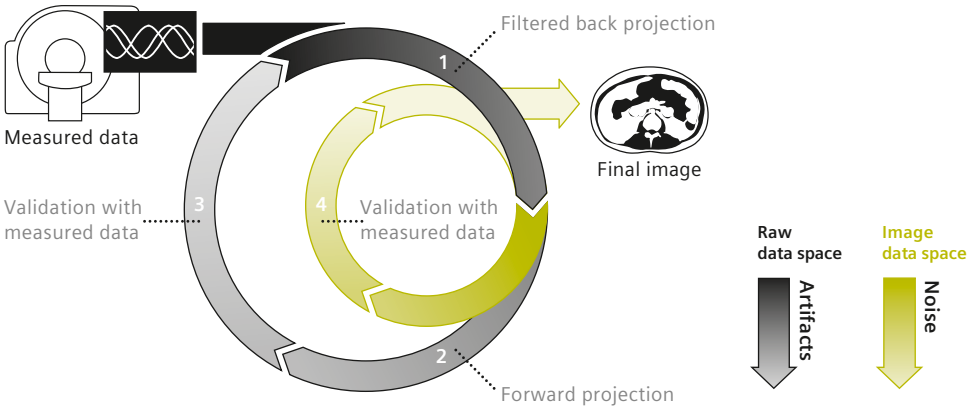
Pediatric CT – abdominal and pelvic contrast spiral scan
MPR images show an enhanced lesion in the pelvis, and MIP images demonstrate the lesion's feeding and draining vessels.

Courtesy of Institut Sainte Marie, Osny, France

Core technologies

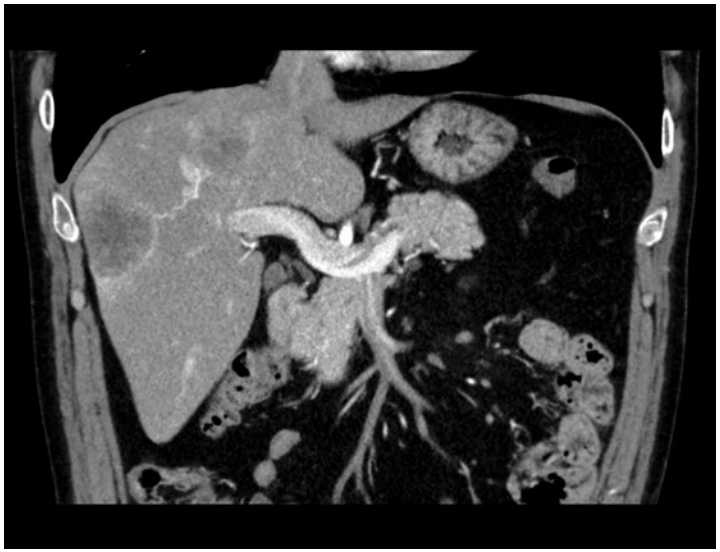
SAFIRE

SAFIRE improves image quality or reduces dose by up to 60% – at speeds suitable for routine scanning.

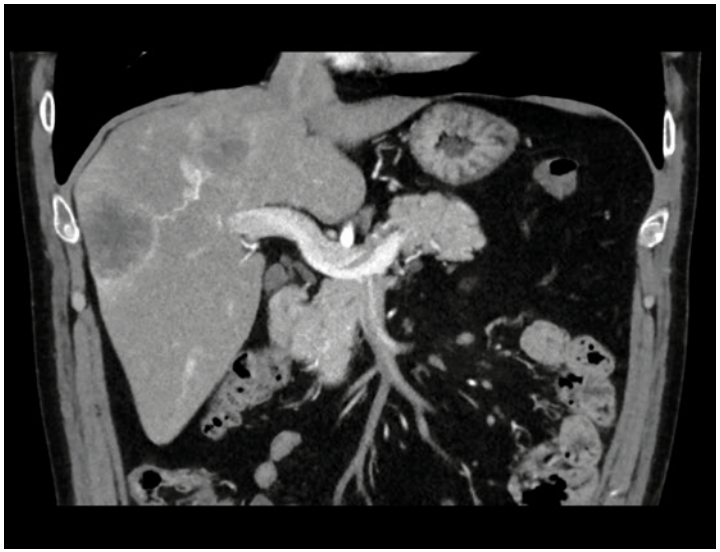


Best image quality at the right dose

SAFIRE* brings the full dose-saving potential of iterative reconstruction to clinical practice. The new, powerful SOMATOM Perspective image reconstruction system (IRS) can process up to 15 images per second, making SAFIRE suitable for everyday use. Dose can be reduced by up to 60% as an image-improvement process is launched right after the scan to reduce noise and artifacts. Iterative loops are performed in the image and the raw data space.



Without SAFIRE



With SAFIRE

SAFIRE significantly improves image quality.

Artifact cancelation

The process starts with an image reconstruction in the raw data space by a filtered back projection (1). The resulting image is converted again into a sinogram with a forward projection (2) to validate it again with the measured data (3). During this step, artifacts still present in the sinogram are detected and removed.

Noise cancelation

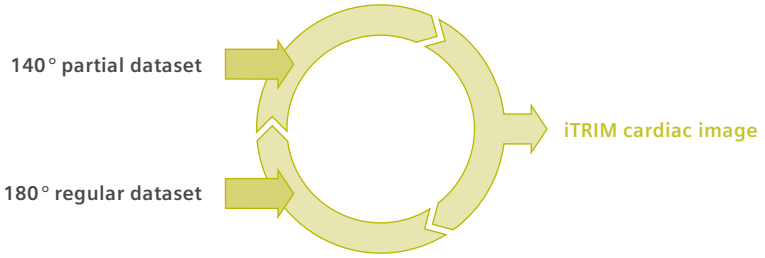
In the image data space the image from the filtered back projection is also validated (4) with the measured data to lower noise. At the end of the process, a high-quality diagnostic image is produced, with excellent contrast, sharpness and noise levels – despite a potential initial dose reduction.

* 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.

iTRIM

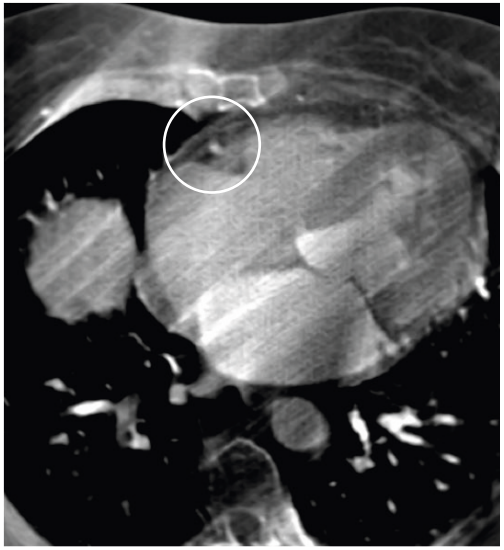
iTRIM uses a novel CT image reconstruction method to improve temporal resolution of cardiac images by 20%.

iTRIM utilizes a histogram constraint and raw data iterations to enhance the temporal resolution of cardiac CT images.

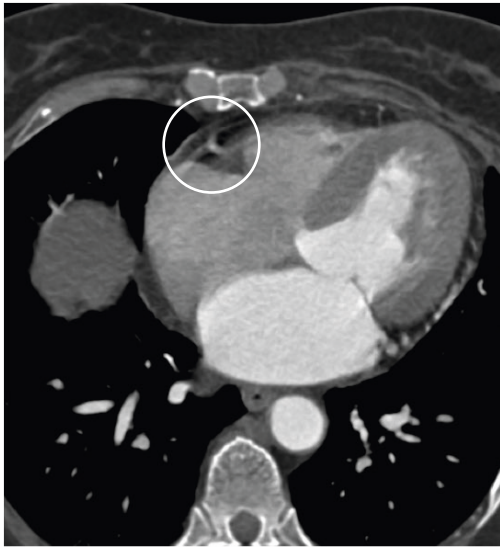


Enhanced cardiac imaging

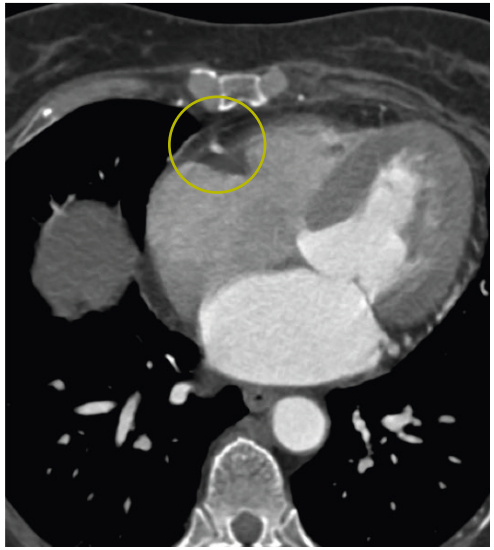
The Iterative Temporal Resolution Improvement Method (iTRIM) delivers a superior temporal resolution compared to conventionally reconstructed CT images, while maintaining the same overall image impression. It improves the temporal resolution by 20%, and effectively reduces motion artifacts.



140° partial dataset



180° regular dataset



iTRIM

The results using iTRIM show significantly reduced motion artifacts compared to the conventional reconstruction.

Minimized motion artifacts

iTRIM uses a full 180° in combination with a partial 140° cardiac dataset for image reconstruction. The regular 180° dataset has the necessary information for a completed cardiac image but may exhibit motion artifacts. On the other hand the 140° dataset has a better temporal resolution and achieves sharper delineation and edges in areas with higher motion in the image.

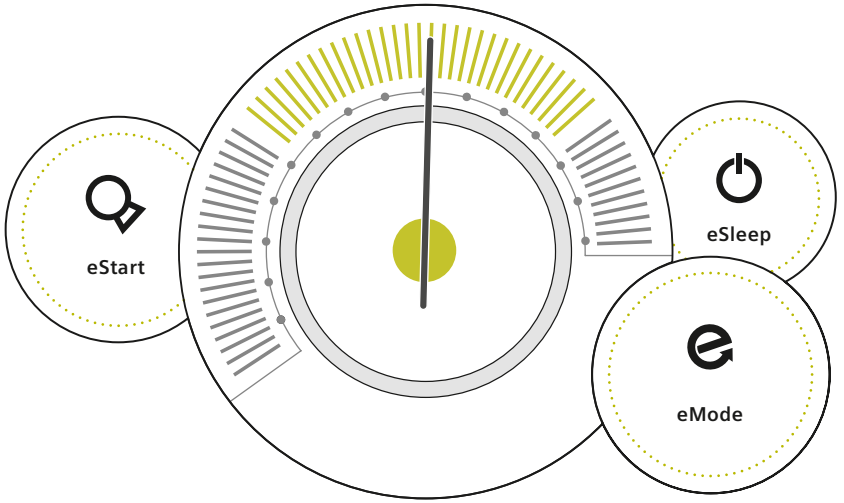
Improved temporal resolution

In regions that exhibit motion, the 140° image is used as the final image – as opposed to the full 180° image for static regions. The iTRIM reconstruction technique maintains the same noise level and overall image quality, while significantly reducing motion artifacts. This has been objectively validated in a clinical study*. iTRIM can dramatically improve temporal resolution – to as low as 195 ms.

* Apfaltrer P, Schoendube H, Schoepf UJ, et al. Enhanced temporal resolution at cardiac CT with a novel CT image reconstruction algorithm: Initial patient experience. Eur J Radiol. 2012 Nov 5. pii: S0720-048X(12)00484-6.

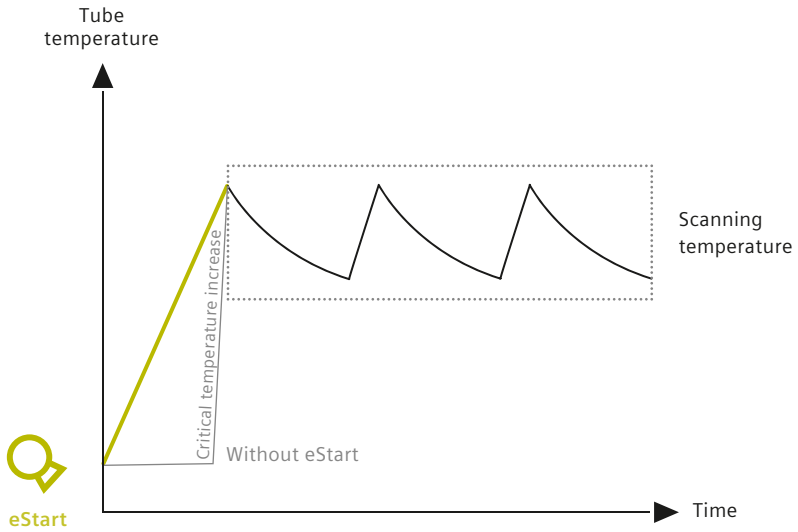
eCockpit

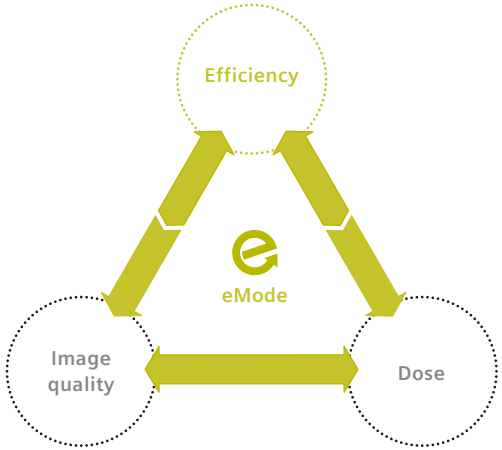
The eCockpit suite extends the scanner's lifespan, keeps operating costs in check, and seamlessly integrates into your daily routine.



The unique eCockpit features eStart, eMode and eSleep

eCockpit
The unique eCockpit suite, standard on all SOMATOM Perspective scanners, enables more cost-efficient operation. The entire working day of a CT system was taken into consideration, from start-up to scanning to scan breaks. The features eStart, eMode and eSleep extend the scanner's lifespan by preventing unnecessary wear and tear, and reduce overhead costs by minimizing energy consumption. And thanks to a high degree of automation, the features can be easily integrated into everyday workflows.





eStart

The pioneering eStart feature gently warms up the tube after extended periods of non-use. That may be every morning for high-throughput facilities, or prior to each scan in smaller hospitals. This reduces deterioration associated with cold starts, extending the tube's lifespan. For urgent cases, for example in traumatology, it is of course possible to start the scan without eStart – saving time where it counts.

eMode

The easy-to-use eMode enables effective and patient-friendly operation by striking the right balance between dose, image quality, and efficiency. Once the user has prepared a scan protocol and entered all required information, eMode analyzes the parameters in real time and instantly fine-tunes the scan. This ensures that the system is not operated at peak or system limit values, reducing wear and tear of all moveable parts while maximizing image quality.

eSleep

eSleep minimizes electricity consumption while the scanner is not in use, keeping operating costs in check. SOMATOM Perspective automatically enters eSleep mode following extended periods of non-use, such as at night or during staff lunch breaks. What's more, the system rapidly returns to scan-ready mode when needed, allowing users to resume their normal routines in no time.

Service offerings

A range of innovative service offerings raise quality and help manage financial performance.

Customer Services

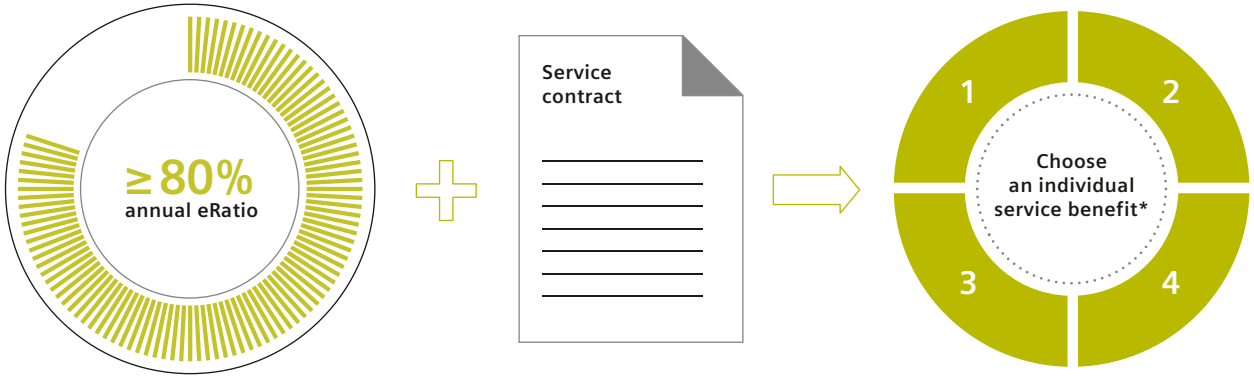
Customer Services efficiently delivers high-quality care anytime, anywhere around the globe. This enables customers to provide high-quality healthcare today and tomorrow, and to get the most out of their investment. Customer Services delivers smart, sustainable investment protection and predictable total cost of ownership (TCO). What's more, custom-tailored service offerings are available for specific customer needs.

Siemens Performance Plans

Service and maintenance are highly important for preventing unscheduled downtimes. Siemens Performance Plans are designed to help run operations smoothly and thus to improve the workflow – with predictable costs, lower risks, and higher efficiency. Modules can be combined with a Performance Plan Pro, Plus, or Top, or an individual solution with substantial benefits.

High speed service processes

System malfunctions can be anticipated even before they occur and expert high speed service processes can be initiated keeping the system running at peek performance. The X-ray tube is a vital component of CT systems. Proactive tube monitoring on SOMATOM Perspective supports the Siemens Guardian Program™ for improved tube surveillance: Software sensors on the X-ray tube monitor the tube in real time and also supply tubeusage information. This enables roactive detection of tube parameter deviations.



Receive service benefits by using eMode and eStart (= eRatio).

Service benefits with eRatio

With a Siemens Service contract customers receive additional service benefits*. The system is analyzed every 12 months to determine the eRatio usage: if eMode and eStart were used at least 80% of the time, customers are entitled to select one of the valuable service benefits. Users can significantly benefit from this option – subject to country-specific offerings – and leverage the efficiency potential of their scanners.

Siemens Remote Services

Customer Services offers innovative service offerings via the secure remote system management platform Siemens Remote Services. Utilization Management, for example, monitors scanner usage 24/7, and tracks and summarizes every scan in a report that provides exact information, detailing CT performance indicators such as system utilization and dose information, and also the use of eMode and eStart (eRatio).

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

* Service benefits are subject to country-specific offerings. Please get in touch with your local Siemens contact to find out more.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