Drive precision for all

SOMATOM Drive

International version. Not for distribution or use in the U.S.

siemens.com/somatom-drive

SIEMENS Healthineers

How can the challenges of tomorrow's healthcare be overcome?

The challenges faced in providing patients with the best possible care are seemingly countless, something which is also seen in the area of imaging, including CT. Patients' body types, ages, and medical conditions can vary considerably. So achieving fast, precise scans with uncooperative patients, those in altered mental states, or those with renal insufficiency, puts added pressure on everyone involved. Workflows need to be continually optimized for the best results, and of course there is the daily issue of staying competitive and on budget, all while expanding your services to stay ahead in an ever-changing healthcare landscape.

André Hartung,
Head of Business Line
Computed Tomography,
Siemens Healthineers,
Forchheim, Germany

"In every healthcare environment there is a constant demand for better outcomes at lower costs. To achieve this goal, speed, power, and precision are not luxuries; they are necessities in providing excellent patient care. Therefore, we developed SOMATOM Drive in collaboration with you. This Dual Source CT scanner is the perfect balance between speed and power, and delivers precise diagnostic results for virtually every patient by taking into account each patient's physical condition. SOMATOM Drive is also a direct expression of our aim to be your inspiring partner, by providing one of the best Dual Source CT scanners for the most successful CT business."

SOMATOM
Drive

Dual Source CT is the solution

How does Dual Source CT work?
Siemens Healthineers' unique Dual Source CT (DSCT) scanners are comprised of two data measurement systems, each consisting of one X-ray tube and one corresponding detector. Offset at ~90 degrees, this advanced technology enables the system to capture image data in half the time needed by conventional technologies. This significantly increases true temporal resolution and scan coverage speeds, which results in clear diagnostic benefits.

How does Dual Source CT make you more patient friendly and improve clinical workflow?
The increased speed and power of DSCT enables handling of unplanned patients and their individual situations. DSCT allows you to:

... scan without breath-hold and at lower doses

... scan without sedation whilst maintaining low dose levels

... scan at virtually any heart rate, without additional preparation methods

Therefore, DSCT provides a potential reduction in preparation time, less reliance on sedation or heart rate control, and greater flexibility in treating patients of different ages and body types. DSCT aims to create a higher patient throughput because processes can potentially be accelerated or even bypassed. It also offers a wide range of workflow advances which bring theoretical concepts into realized routine. Designed to powerfully enhance diagnostic quality and provide more precision, flexibility, and efficiency, SOMATOM® Drive is an exceptional new member of your radiological team – for all your patients, all your business needs, and, of course, your specific environment.

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SOMATOM Drive at a glance

Regardless of who walks through the door, your medical imaging institution is constantly pressured to provide state-of-the-art CT imaging – every day, every night, and at every single moment.

This is why Siemens Healthineers, with its unique Dual Source technology, is collaborating with you to expand technological possibilities, simplify complex procedures, and raise clinical standards. After all, patients don't always have an appointment, medical conditions often can't wait for specialized staff, and clinical trends are never constant.

In today's world, you need to be prepared to aid your patients, to cope with your environment, and to meet your business needs – while driving precision every step of the way.

Drive precision for your patients

SOMATOM Drive provides reliable diagnostic results across clinical disciplines, as well as a new quality of patient care. Accept more patients than ever before and master urgent care. This will improve the CT experience for everybody involved.

Drive precision for your environment

SOMATOM Drive lets you standardize your institution's quality of care to unseen levels. Promote optimum performance at all times by simplifying routines and accelerating workflows.

Drive precision for your business needs

SOMATOM Drive allows you to implement unprecedented system-management efficiency. Versatile and future-proof, this CT technology connects you to the CT practice of tomorrow, advancing new clinical fields and new technologies. SOMATOM Drive boosts your performance, empowers your routines, and expands your capabilities.

SOMATOM Drive provides reliable diagnostic results across all clinical disciplines and helps you achieve a new quality of patient care.

Drive precision for your patients

Master urgent care...

- by being able to handle unplanned patients in urgent situations, regardless of weight or size
- by avoiding motion artifacts even in critical situations with free-breathing CT imaging and the industry's fastest, most versatile scan mode
- by reducing the risk for trauma patients thanks to high-speed scanning of the chest without breath-hold and at a much lower dose
- by getting the patient in and out of the radiology department as quickly as possible, particularly in urgent cases, without compromising image quality

Because efficiency and precision are so essential, SOMATOM Drive with Dual Source technology is equipped with two Straton® MX Sigma X-ray tubes and the unique 10 kV Steps, which allow precise, superfast scans at low dose and according to each patient's individual needs.

Unplanned patients are not prepared, which can result in cardiac, breathing, or patient motion during the scan – but thanks to SOMATOM Drive's free-breathing CT imaging mode, even this challenge can be managed.

Establish a new quality of patient care

The number of challenging cases is increasing rapidly. From pediatric, uncooperative, overweight, or elderly patients to staff shortages, the list goes on and on. SOMATOM Drive provides dose and contrast media reduction without compromising image quality, thus improving the CT experience for everybody involved. Patient care has also been enhanced with SOMATOM Drive's new Tin Filter protocols featuring the very latest technology. It helps protect the patient significantly and has now been expanded into new imaging domains.

Accept more patients than ever before

The contrast media reduction potential of SOMATOM Drive aims to shorten preparation times as well as the time needed for after-care (e.g., post-hydration and monitoring), and to help you scan more patients than ever before. In addition, Dual Power 4 cm reduces contrast media volumes even further – which means that even patients with significant renal impairment can be scanned.

Case Study: Pediatrics

Children are usually unable to understand breathing instructions and often there is no time for sedation, or no immediate access to it. Their young age also makes them more dose-sensitive.

Patient challenges

Pediatric imaging presents a number of specific challenges, such as the patient not being able to understand breathing instructions, which can lead to reduced sharpness in lung imaging. Intubation means no breathing instructions, which can lead to motion artifacts in liver imaging. If there is no access to sedation, there can be motion artifacts throughout the scan. In the case that there is no time for sedation, motion artifacts can lead to reduced image quality. The young age of a patient means more dose sensitivity, which can cause long scan times for systems that don't have enough power to give lower doses, thereby increasing the potential for motion artifacts.

Breathing

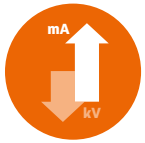
Movement during scan

Dose sensitivity

Solutions

Superfast Scanning **helps eliminate motion artifacts** without increasing the dose, while breathing artifacts are removed with precise dose and the systems fastest in-plane temporal resolution. This also helps dose-sensitive patients, who need very **low doses** – and it does so without limiting scan speed and temporal resolution.

Superfast Scanning



High Power

CARE kV

Thoracic CT without breath-hold. Patient with congenital malformations of the thoracic vessels.

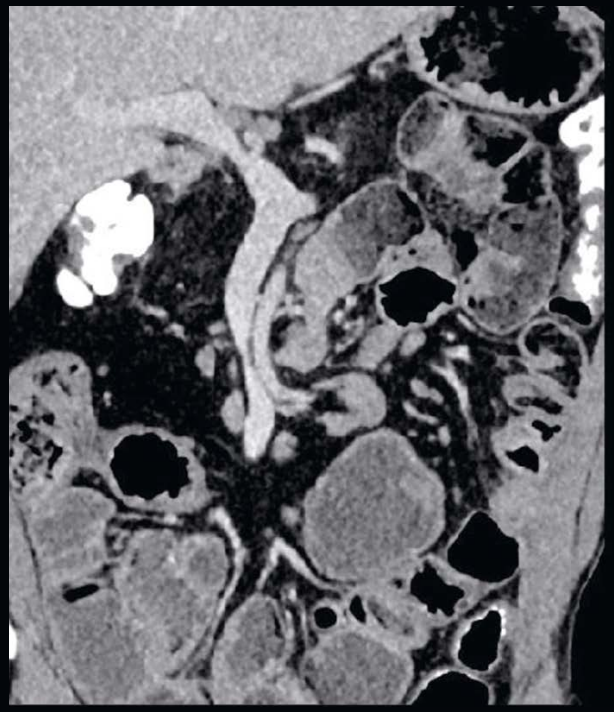
Superfast Scanning with 75 ms temporal resolution enables high image quality at low dose.

Courtesy of Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands

Thoraco-abdominal CTA. 9-year-old child, free breathing, Superfast Scanning at 80 kV.

High Power 80 enables 80 kV imaging at superfast scan speeds.

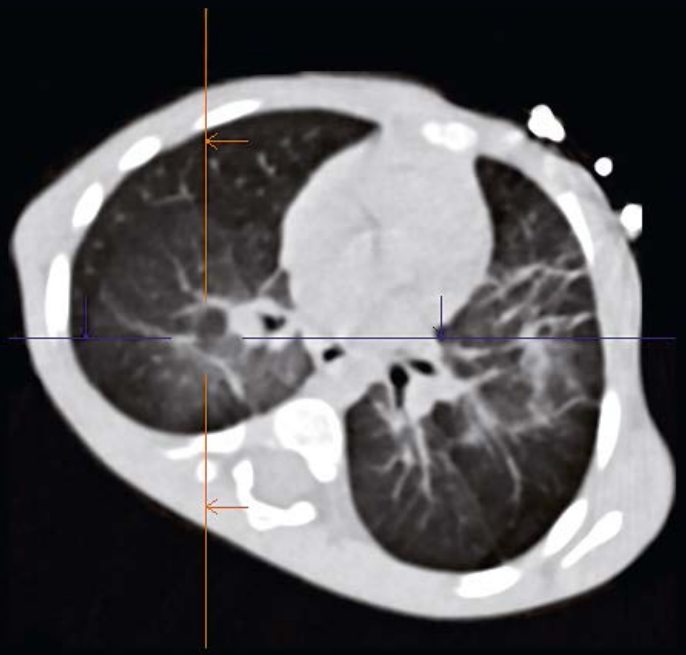
Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

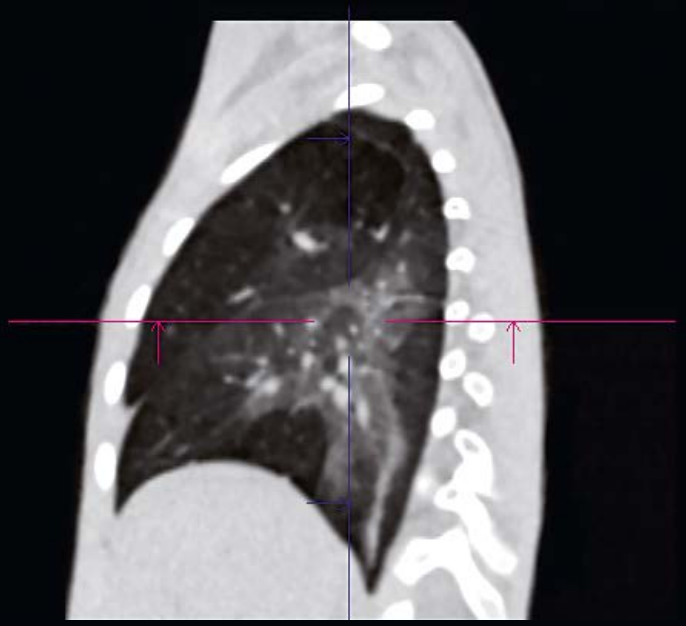


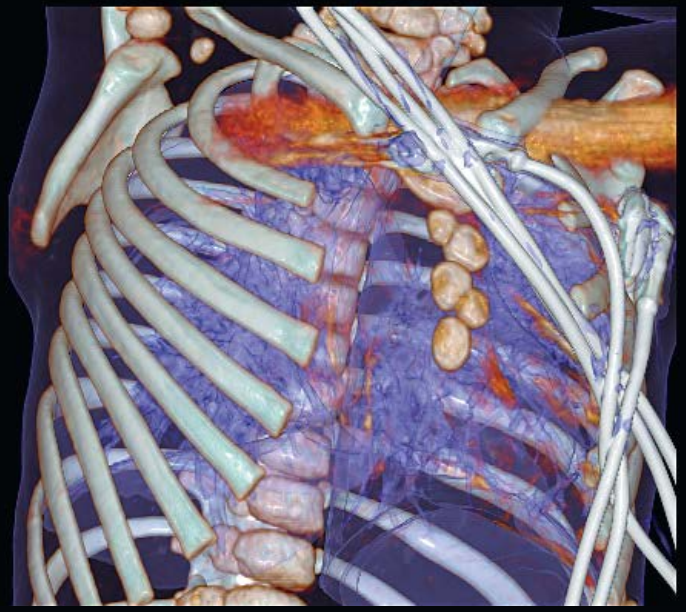
Low-dose, post-contrast abdomen. Bowel obstruction and abdominal vein stenosis.

High Power 80 enables low-dose, low-kV scanning, which is especially useful for patients who require ongoing follow-up studies.

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria







Low-dose thorax for evaluation of pneumonia. 22-month-old, 8 kg (18 lbs), free breathing, no sedation, patient rolling at time of scan.

70 kV CARE Child protocols can be performed with superfast scan modes for lower dose in highly sensitive patients – even with the patient motion seen in this case.

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

Case Study: Urgent Care

Urgent Care can take many forms. The obvious one that comes to mind is of course accident and emergency medicine. However, pre- and postsurgical patients, unplanned outpatients, and ward patients with a significant change in state can also come under the banner of Urgent Care.

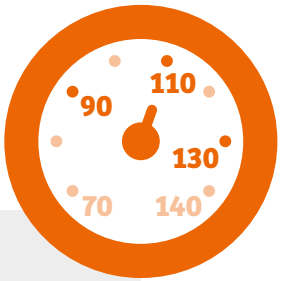
Patient challenges

Patients with severe injuries are usually in great pain, unconscious, or even in an altered mental state. Additionally, in trauma cases, neck collars and wounds affect the patient's positioning, which often results in movement and breathing during the scan.

Movement during scan

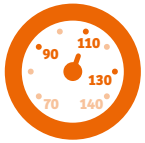
Breathing

Positioning not possible

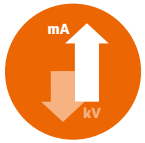


Solutions

To provide more patients with the most **precise dose values** for their situation, SOMATOM Drive's unique 10 kV Steps and CARE kV facilitate higher power at lower kVs. They also provide more **accurate kV settings**, which makes it even easier to **achieve the right dose for each individual patient.** So now you can scan patients at lower kVs more often.

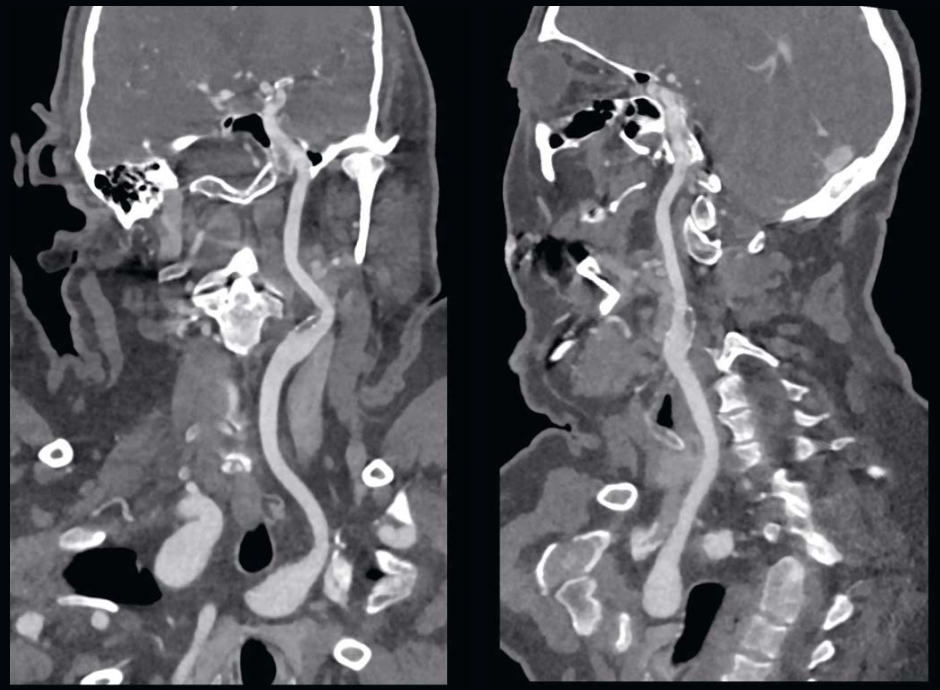


10 kV Steps



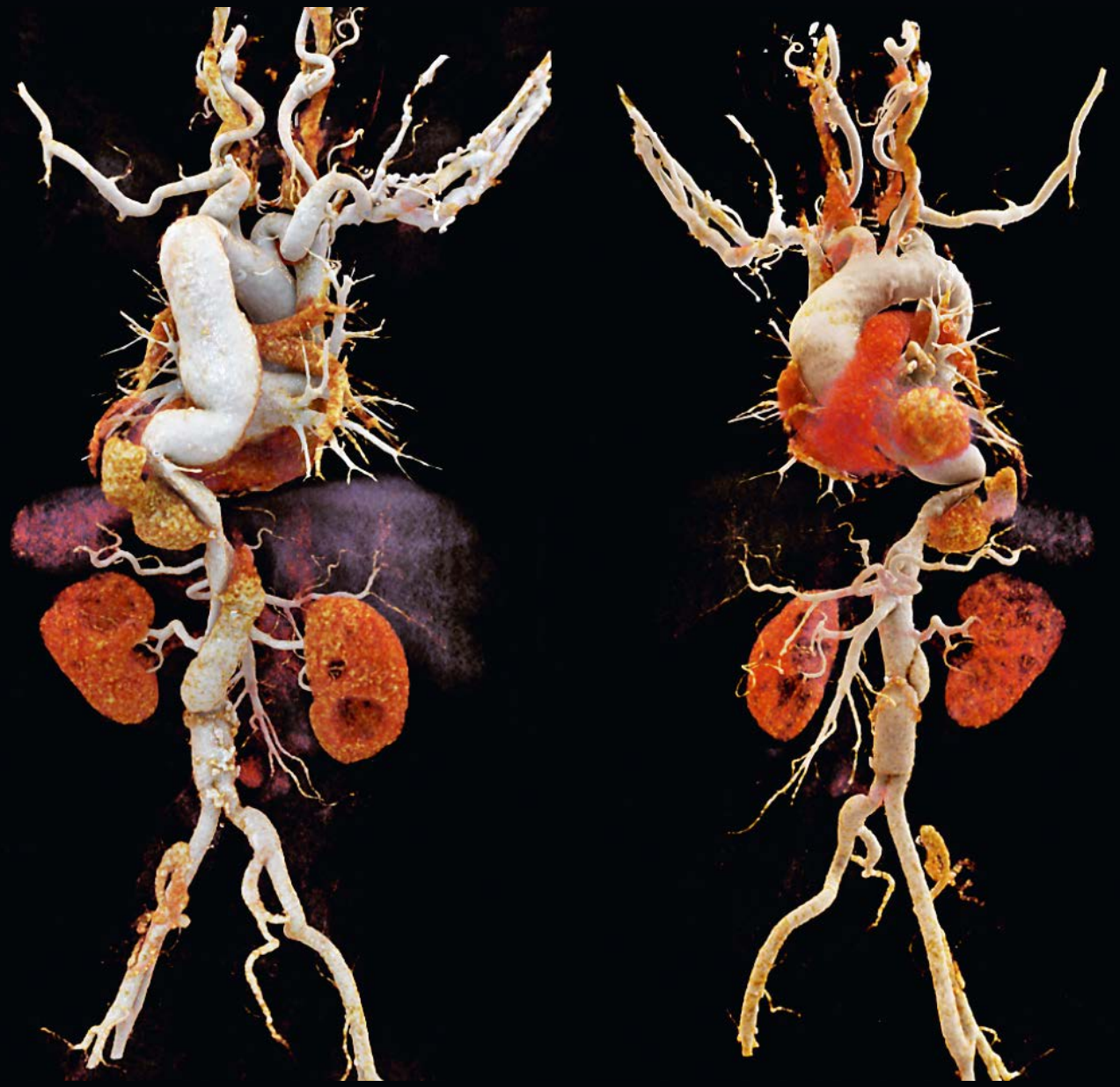
High Power

Superfast Scanning



80 kV head-to-pelvis CTA.
98 kg (216 lbs) patient.
Reveals no carotid dissection.
High Power 70 & 80 drives low-dose, low-kV imaging, and drives precision for all.

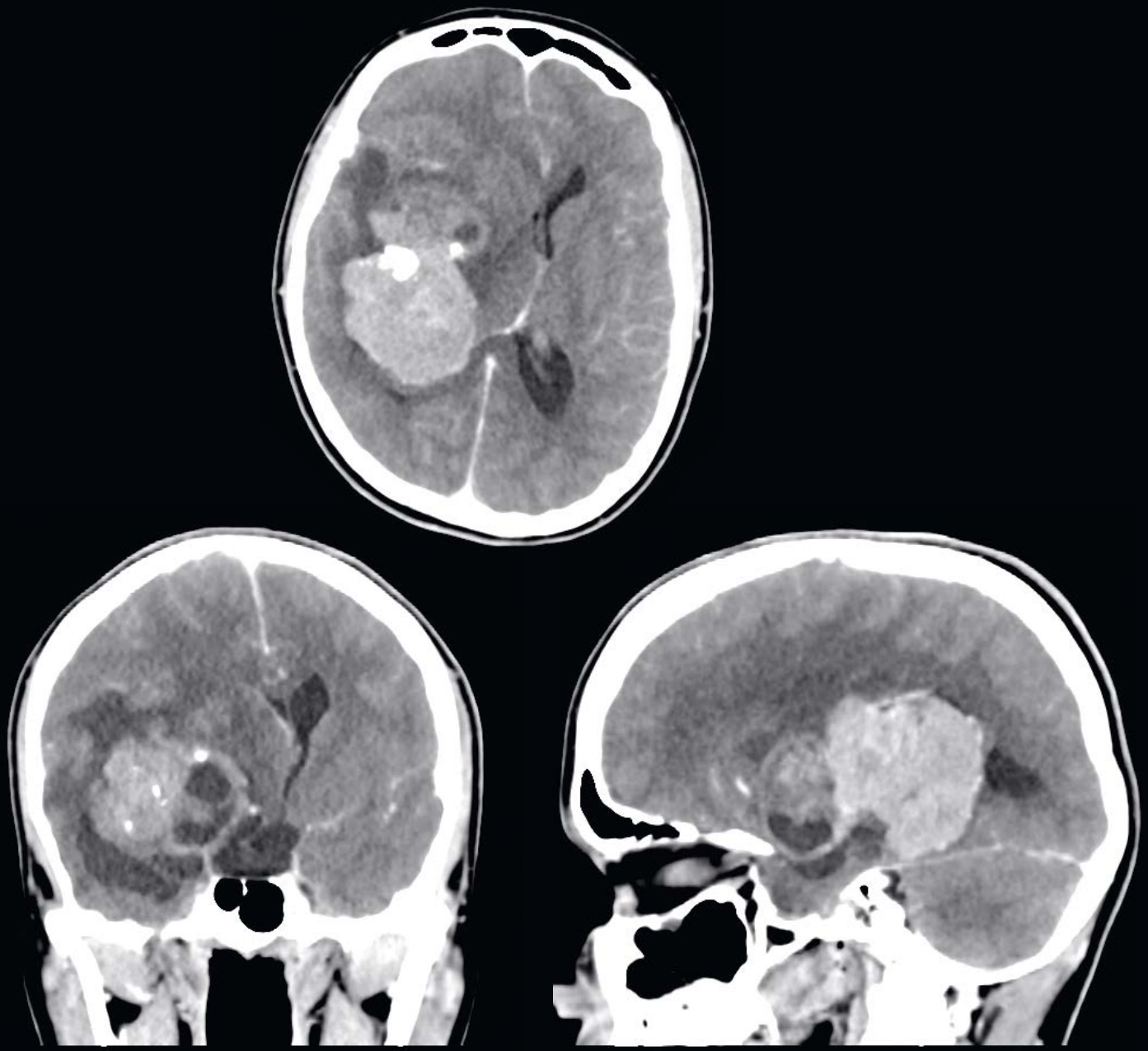
Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria



80 kV head-to-pelvis CTA. 98 kg (216 lbs) patient. Reveals a significant aortic aneurysm and dissection.

High Power 70 & 80 drives low-dose, low-kV imaging, and drives precision for all.

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria



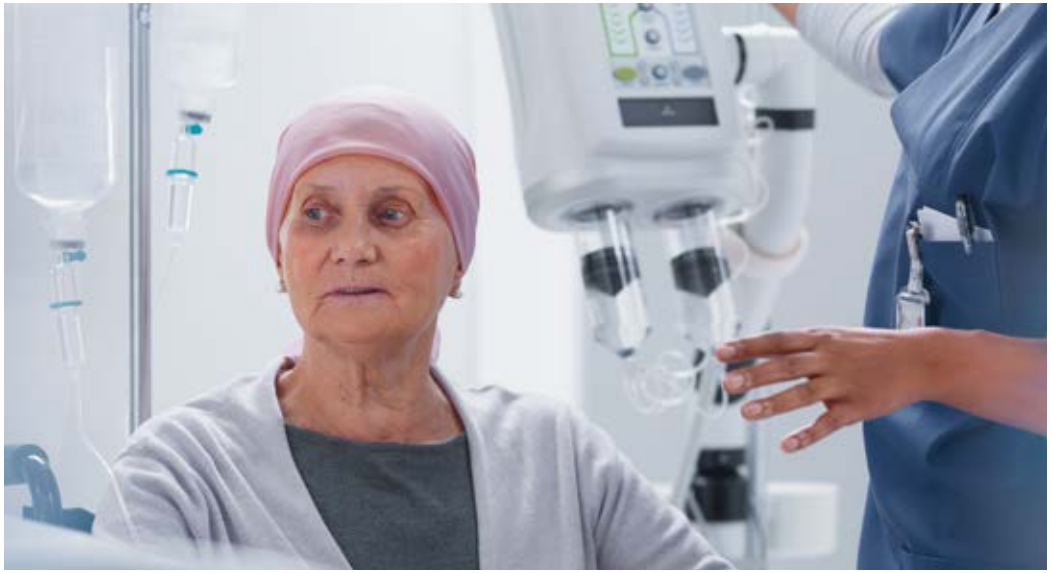
Urgent head scan at 90 kV. Reveals hemorrhage with midline shift and mass effect.

10 kV Steps enable more precise selection of kV for each patient.

Courtesy of Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands

Case Study: Critical Care

SOMATOM Drive can make a number of crucial differences in Critical Care – a particularly difficult field in which, more often than not, contrast media studies are contraindicated and prehydration is not possible. These patients need access to high-quality, consistent, post-contrast-media imaging, preferably without time-consuming and costly after-care procedures, e.g., monitoring and renal function tests.



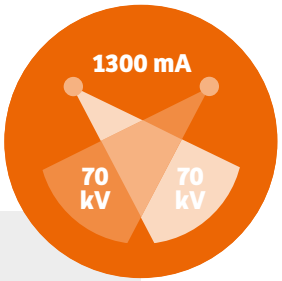
Patient challenges

High contrast media use is not possible in renally impaired patients, lower contrast media used without the right technology can affect image quality, and giving large volumes of contrast media can affect kidney function, so monitoring takes longer.

Scan not possible

Consistency

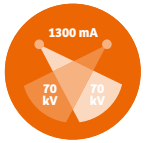
After-care



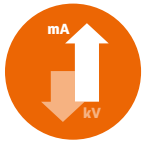
Solutions

SOMATOM Drive can significantly **boost your vascular imaging potential** because you can use the power of both X-ray tubes together to provide even higher power at low kV. This can achieve a potential **reduction in contrast media** for a wider range of patients, and particularly for renally impaired and contrast-media-sensitive patients.

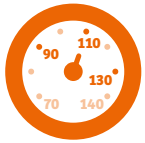
With SOMATOM Drive's Dual Power, you can **harness the full power of Dual Source CT**.



Dual Power



High Power



10 kV Steps

Vascular follow-up for patient with transplanted kidney.

Dual Power 4 cm enables low-kV imaging and low-contrast media volume < 50 mL.

Courtesy of Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands

Vascular CTA, patient with renal impairment. Abdominal aortic aneurysm with thrombosis.

80 kV imaging achieved with Dual Power 4 cm in obese patient.

Courtesy of Fakultni Nemocnice Plzen, Plzen, Czech Republic

Vascular CTA. Runoff. 76-year-old male. Claudication, right popliteal artery occlusion.

Low-kV imaging for all: 80 kV enables < 50 mL contrast media in a patient with renal impairment.

Courtesy of Fakultni Nemocnice Plzen, Plzen, Czech Republic

Case Study: Lung Imaging

Imaging of the thorax for lung-related pathologies is not a new concept. However, with reductions in dose and improvements in image quality, CT of the chest is heading into new areas, namely lung cancer screening.

Patient challenges

Patients who suffer from lung disease often have breathing difficulties and are quickly short of breath. This leads to unwanted motion during the scan and to imaging artifacts that can affect diagnostic quality. Additionally, lung cancer screening requires a low-dose acquisition, with no artifacts and consistent image quality.

Dose sensitivity

Breathing

Consistency

Solutions

SOMATOM Drive comes with two Tin Filters which allow high pitch and Superfast Scanning to be performed. This **reduces dose and motion artifacts**, which is especially important for lung cancer screening.

This unique Siemens Healthineers feature pre-filters and shapes the X-ray spectrum, removing low-energy photons, which supports improved image quality in non-contrast imaging, without increasing dose.

Tin Filter

Superfast Scanning

Long Dynamic Range

51-year-old patient, very short of breath. Low-dose, high-pitch thorax with Tin Filters (Sn140 kV) reveals lung lesion.

Spectrally shaped scans with Sn140 kV for low-dose lung imaging without apical artifacts, e.g., streaking.

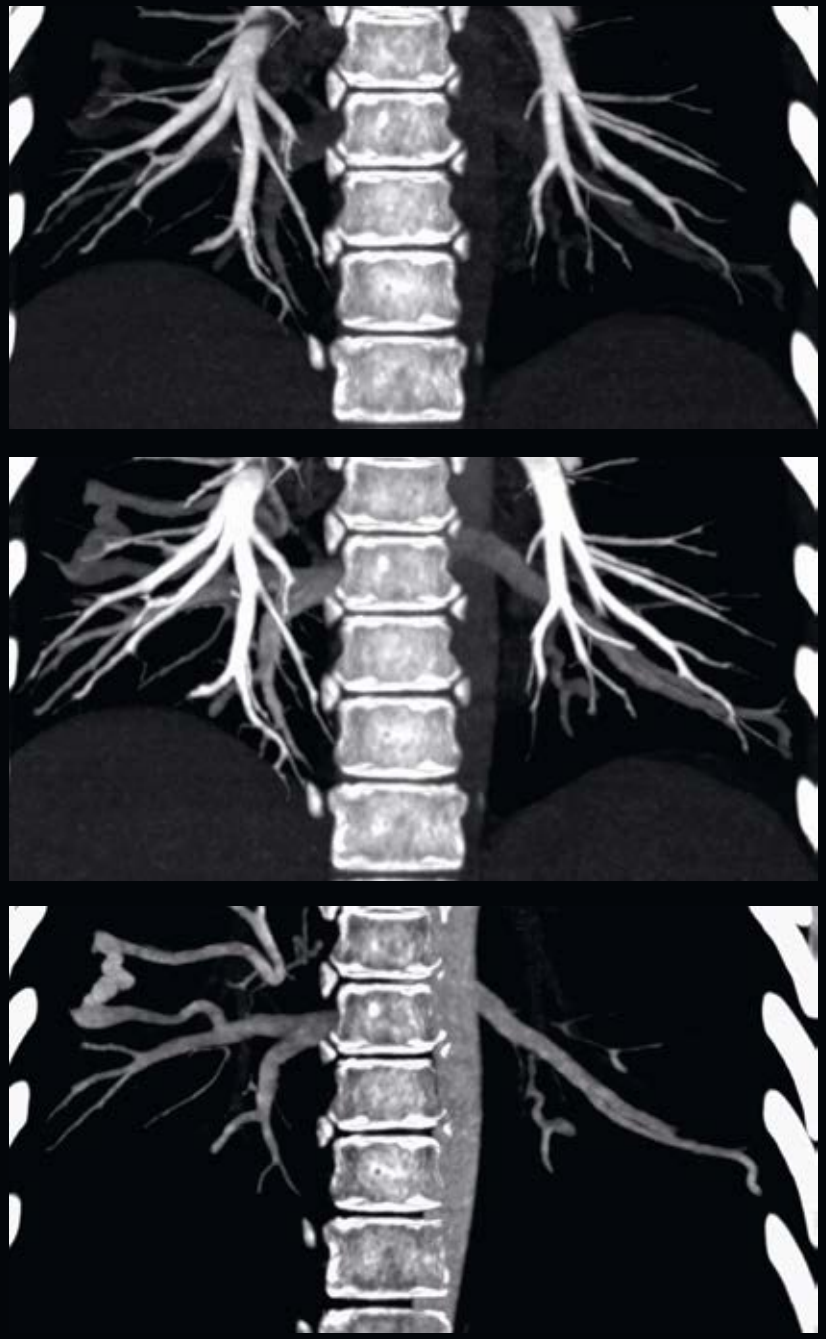
Courtesy of Fakultni Nemocnice Plzen, Plzen, Czech Republic

51-year-old patient, very short of breath. Low-dose, high-pitch thorax with Tin Filters (Sn140 kV) reveals lung lesion.

Note the image quality through the shoulder region. This is very important for apical lesions.

Spectrally shaped scans with Sn140 kV for low-dose lung imaging without apical artifacts, e.g., streaking, even in larger patients.

Courtesy of Fakultni Nemocnice Plzen, Plzen, Czech Republic



31-year-old female, average size. Low-dose thorax for planning and 4D pulmonary vessel evaluation reveals lung varices rather than an arteriovenous malformation.

For lung imaging, Adaptive 4D Spiral also offers a robust dynamic mode for vascular studies, which is especially useful in complex vascular cases as seen here.

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

Case Study: Cardiovascular Imaging

Cardiovascular imaging is considered to be one of the central pillars of diagnostic imaging, and CT plays its part here significantly. With the increase in referrals for these procedures comes an increase in the complexity of the patients needing scans.

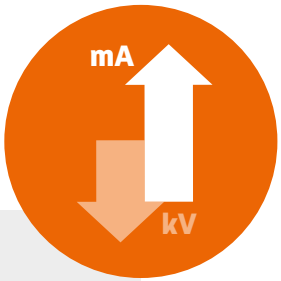
Patient challenges

Patients who suffer from cardiovascular diseases often present to the CT department with some level of urgency or anxiety. Often patients are not prepared or are unable to have heart-rate-control medication, and a significant number have complex heart rates, patterns, and anatomy.

Dose sensitivity

Heart pumping

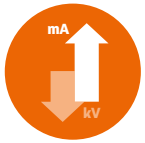
Consistency



Solutions

Dual Source CT offers a clear benefit when it comes to true in-plane temporal resolution. Not only does this **stop motion** in the coronaries, but lung and patient motion also. This is a major advantage when scanning the whole heart. When this is combined with High Power 70 & 80, the system reaches an even higher level of **dose precision for the patient**.

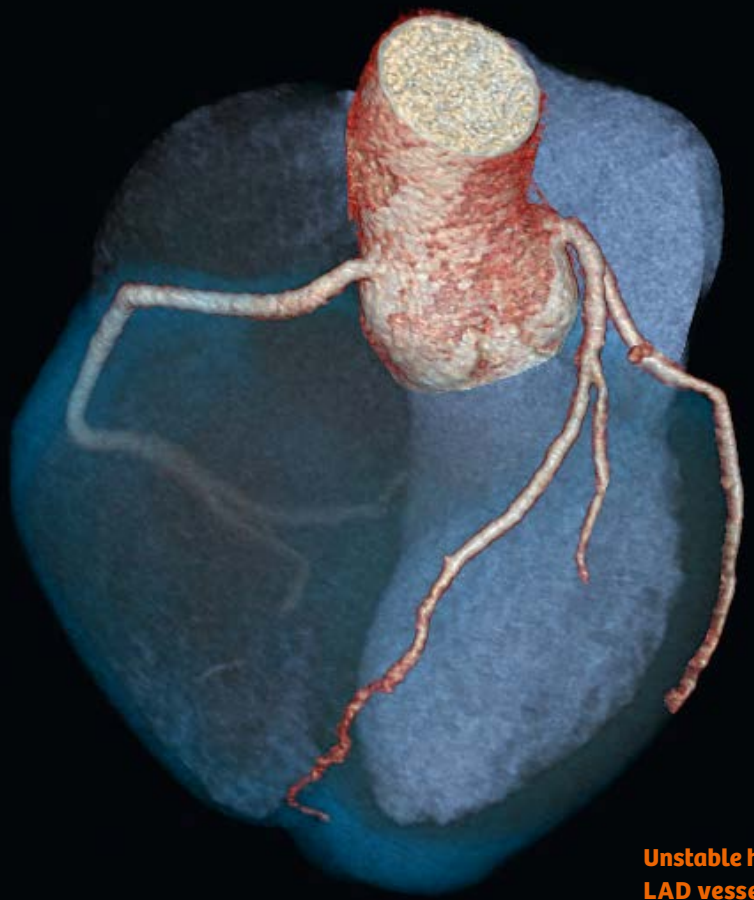
High Power allows the **combination of speed and power** required for high-quality, low-dose cardiothoracic imaging.



High Power

Superfast Scanning

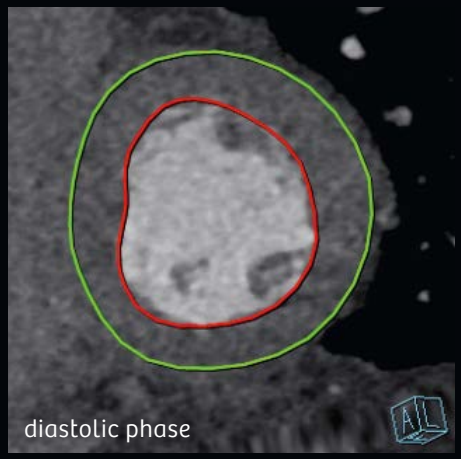
Dual Source

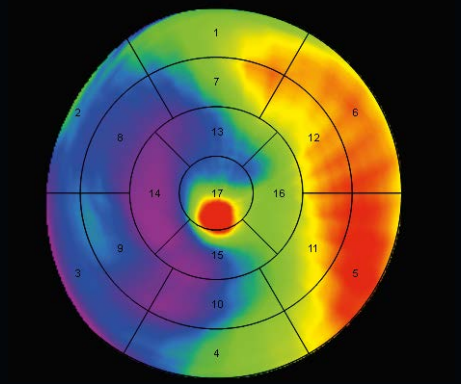


Unstable heart rate of 47-70 bpm. LAD vessel disease.

Precise patient dose selection and outstanding image quality utilizing Superfast Scanning (one heartbeat), High Power 80, < 50 mL contrast media at < 0.4 mSv.

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria





Coronary spiral CTA, 54 bpm. Full functional bypass scan, < 7 mSv with patent LIMA bypass graft.

Precise patient dose even with full functional study incl. valves & LIMA bypass graft at below 7 mSv. Long-range cardiac imaging without compromising image quality.

Courtesy of Fakultni Nemocnice Plzen, Plzen, Czech Republic

70-year-old male, 94 kg (207 lbs). Cardiac CTA, 50-64 bpm. Unstable HR. Coronary arteries normal. EF study.

High Power 90 kV scans for precise patient dose. EF studies at below 2 mSv.

Courtesy of Medscan Barangaroo, Sydney, Australia

Case Study: Orthopedics

Fractures and dislocations of extremities may require surgical interventions and ongoing follow-up to determine healing. This requires high-quality diagnostic images with low patient dose.

Patient challenges

Patients are often in a lot of pain, and therefore scan times should be as short as possible. In addition, repeat studies may be required over several weeks, months, or even years. The dose burden on the patient therefore increases significantly and a high interscan consistency is paramount. Consistent image quality and lowest reasonable dose are desirable to enable the best possible diagnostic outcome.

Image quality

Movement during scan

Dose sensitivity

Solutions

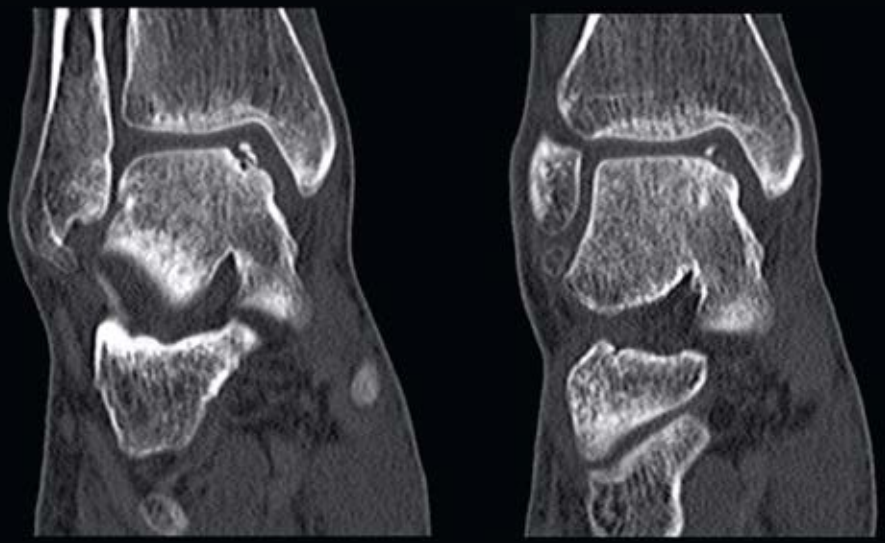
Imaging extremities with Tin Filters leads to a **significant dose benefit** over several examinations, bringing the dose of a CT scan to that expected of a routine X-ray.

Superfast Scanning along with FAST and CARE features in the DistinCT Imaging packages leads to a **reduction of motion artifacts** and **improved consistency** within and between examinations.

Tin Filter

DistinCT Imaging

Superfast Scanning



Extremity CT at X-ray dose levels. Ankle examination after sporting accident with Tin Filter (Sn100 kV).

Scans with Tin Filter reduce extremity CT dose to X-ray levels.

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

Extremity CT at X-ray dose levels. Ankle examination after sporting accident with Tin Filter (Sn100 kV).

Scans with Tin Filter reduce extremity CT dose to X-ray levels.

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

Extremity CT at X-ray dose levels. Hand examination after sporting accident with Tin Filter (Sn100 kV).

Scans with Tin Filter reduce extremity CT dose to X-ray levels.

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

Case Study: Bariatric Imaging

CT imaging often provides the referring physician with a clear basis for patient treatment planning. Therefore, it would be ideal to provide these services to every patient, regardless of aspects that have previously been considered as contraindications, such as patient size.

Patient challenges

Bariatric patients provide a challenge in many areas of the hospital, not least in radiology. Difficulties with positioning, and the need for additional efforts to maintain image quality are common issues, and the challenges are increasing.

Consistency

Image quality

Scan not possible

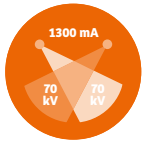
Solutions

SOMATOM Drive comes with a 78 cm bore and with Siemens Healthineers, unique field of view (FoV) features such as HD FoV and extended FoV, which **allow visualization of clinical anatomy** within the full bore.

Combine this with a table which supports high-quality clinical imaging for patients weighing up to 307 kg (676 lbs), and the full power of Dual Source, and you have the **solution for a growing patient population**.

78 cm bore

Multipurpose table

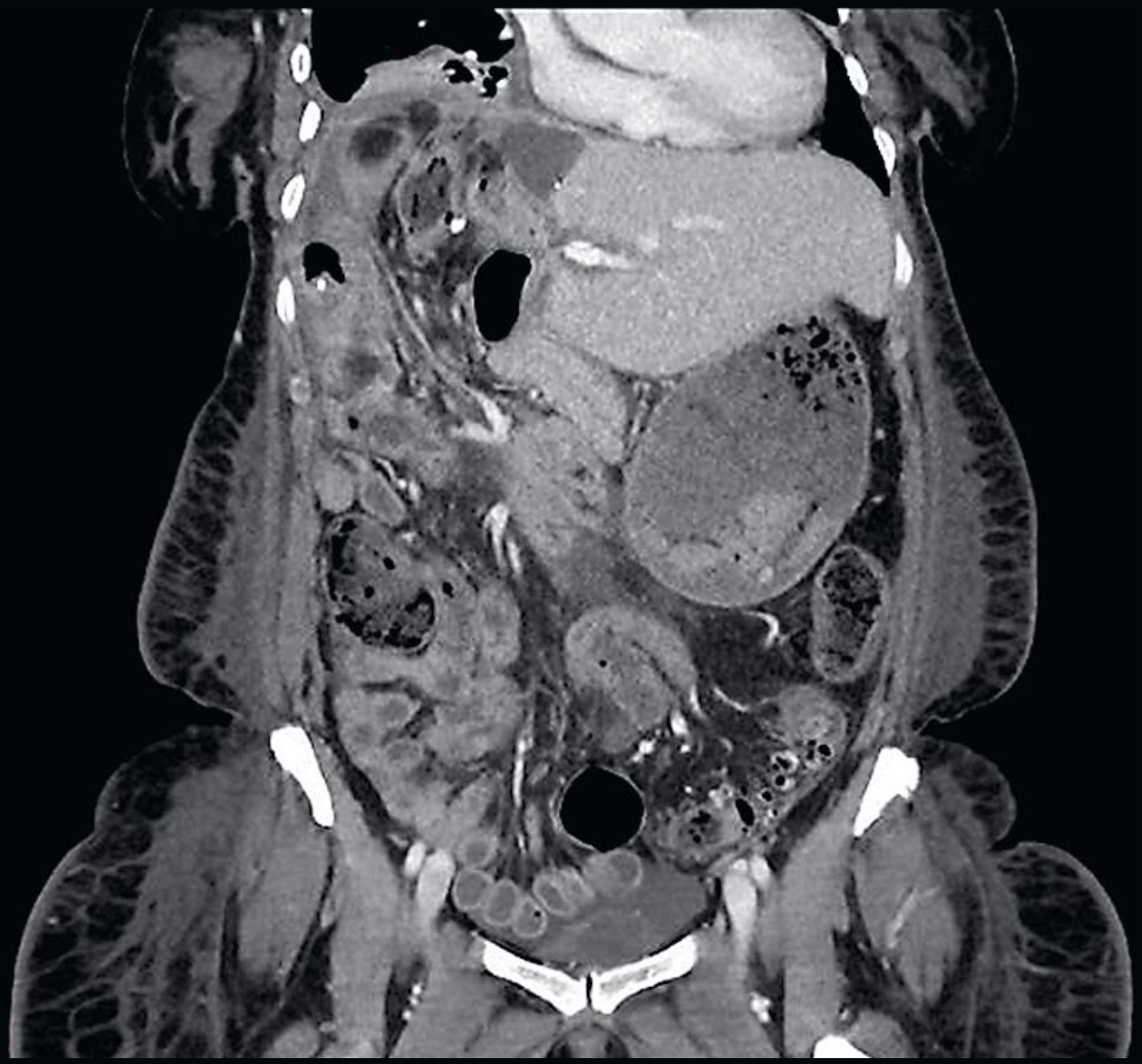


Dual Power

64-year-old obese patient, acute abdominal pain. Free fluid and abdominal lesions.

Combined with High Power 70 & 80 and 10 kV Steps, the wide bore and a table capable of supporting heavy weights enable high CT image quality in larger patients.

Courtesy of Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands



64-year-old obese patient, acute abdominal pain. Free fluid and abdominal lesions.

Combined with High Power 70 & 80 and 10 kV Steps, the wide bore and a table capable of supporting heavy weights enable high CT image quality in larger patients.

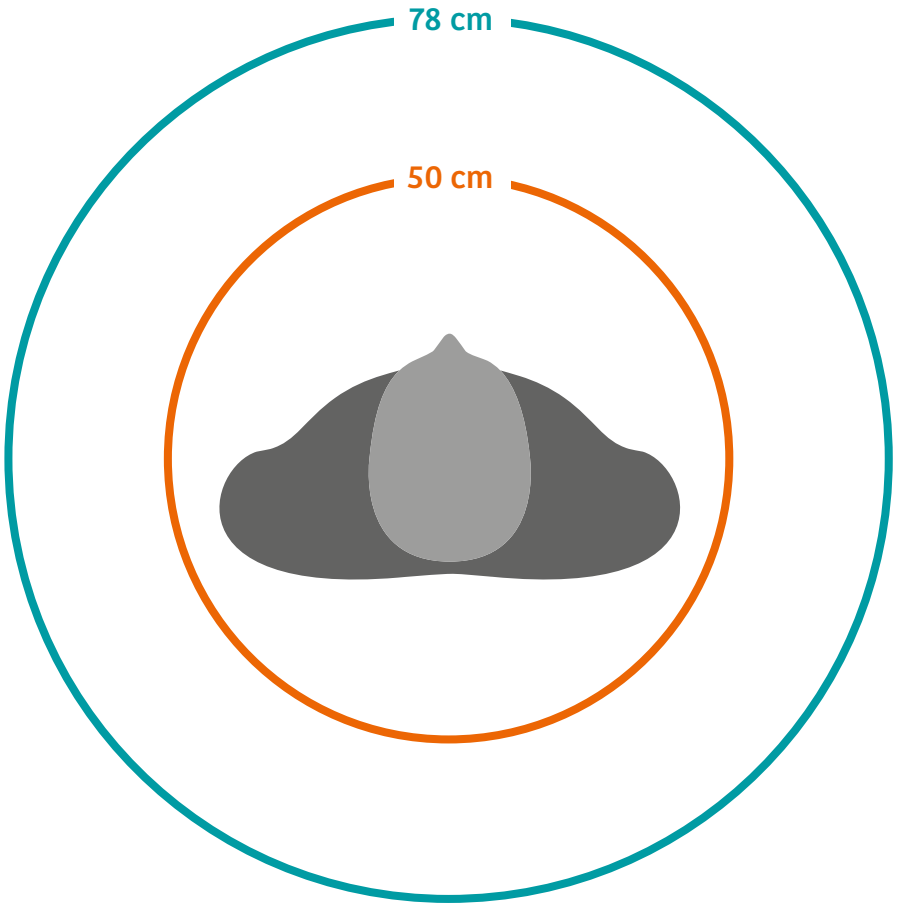
Courtesy of Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands

Enable visualization of up to 78 cm

78 cm extended field of view
Designed to enable visualization of the skin line of human body parts located outside of the standard field of view (complete bore size) Siemens Healthineers specifies HU accuracy to within +/-20 HU

50 cm scan field of view
Full reconstruction

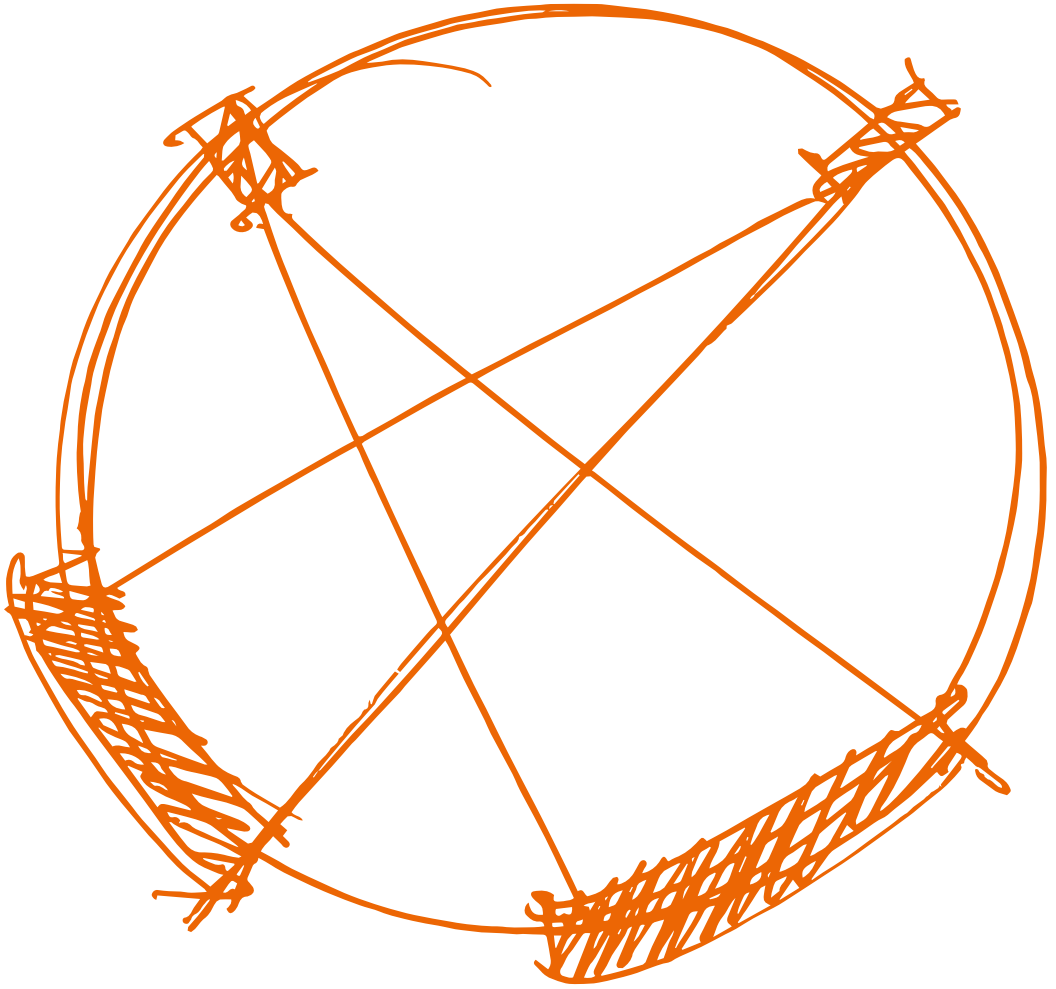
Combine with 307 kg/676 lbs and 200 cm table
Provide precision for a wider range of patients



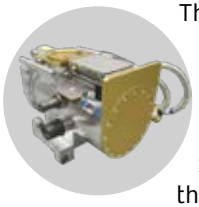
Precision in the imaging chain

SOMATOM Drive allows you to achieve clinical excellence without filtering your patients, to run your workflows regardless of your environment, and to keep your business focussed on the future. It offers the most original and most targeted imaging-chain innovations in its class.

- Unmatched Dual Source technology
- Powerful and accurate Straton® MX Sigma X-ray tubes and generators
- Highest level of detector intergration with Stellar^{Infinity} detectors boosted by intergrated IR
- Unique Siemens Healthineers' Tin Filter technology

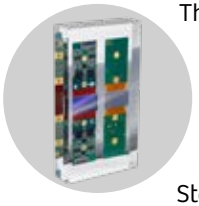


Straton® MX Sigma X-ray tubes and generators



The Straton® brand has been driving Siemens Healthineers' high-end CT scanners for a while, providing significant benefits in spatial resolution with its flying focal spot, its scan times, and its direct anode cooling. Straton® MX Sigma is a full redesign of the core aspects of this highly efficient and reliable tube. It boosts the power available at most kVs, maintains the focal spot size, and offers low-dose scanning with consistent image quality. The highly accurate Sigma generators provide the reliable kV input required to enable these features.

Stellar^{Infinity} detector modules

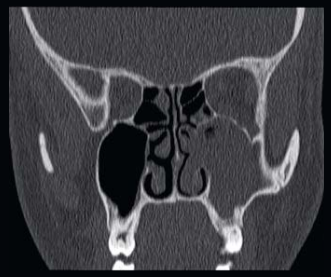


The Stellar^{Infinity} detector features the most modern integrated chip design in the Siemens Healthineers portfolio. In addition to using the unique Ultra Fast Ceramic (UFC) detector material and the successful integration process seen with the Stellar detector, the Stellar^{Infinity} detector goes one step further by miniturizing and integrating more components to significantly improve the efficiency of the detector system.

Integrated Iterative Reconstruction (IR)

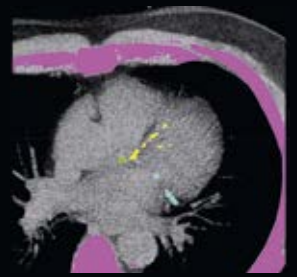
Standard iterative reconstruction protocols allow you to standardize care and provide low doses for all patients, including those in Acute Care. Integrating the iterative reconstruction algorithms to a higher degree optimizes dose and image quality, and goes beyond just software, with Advanced Data Coding techniques at the detector delivering images with reduced noise, and outstanding delineation and sharpness. With routine-ready performance, you are enabled to reduce dose, improve image quality, decrease preparation time and speed up after-care.

A new level of CARE: Tin Filters



Low-dose sinus exams

Low-dose lung exams



Low-dose calcium scoring exams (Agatston equivalent)

Low-dose spine exams

Low-dose virtual colonography exams

Low-dose extremity exams

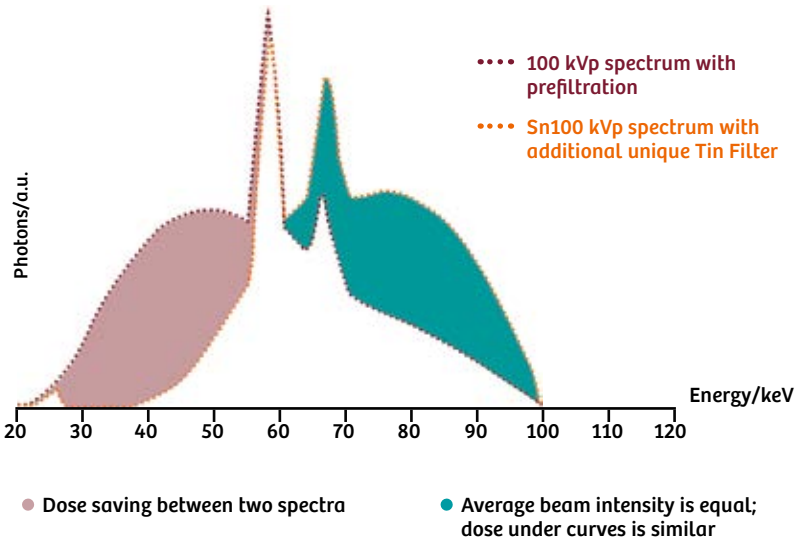
Courtesy of Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands

Courtesy of Medscan Barangaroo, Sydney, Australia

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

See more than ever before with tin-filtered scanning

CT gives you a better view of complex anatomy than conventional projection radiography. For example, when delineating small bony details, it's considered the "criterion standard."[1] Siemens Healthineers' unique Tin Filter technology minimizes or even eliminates dose differences between conventional X-ray and CT, enabling even larger use of CT.



Deploying a Tin Filter in front of the X-ray tube filters low-energy photons from the spectra. Tin's high atomic number means that it's very efficient and can deliver substantially hardened and effective spectra.

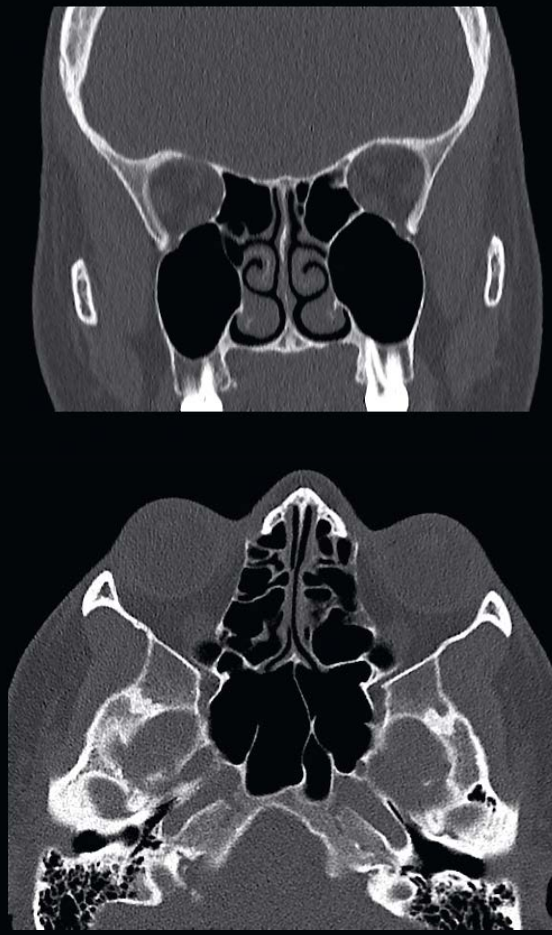
Unique combination of solutions

Tin-filtered scanning
powered by Siemens Healthineers' unique Tin Filter technology

+

High Power reserves
powered by 100-kW generator and Straton MX Sigma X-ray tube

Unique protection, variable application
SOMATOM Drive comes with High Power reserves and our unique Tin Filter technology, which shields your patients from clinically irrelevant low-energy radiation. The result: You can deliver excellent results at dose levels comparable to conventional X-ray – for example, in non-contrast studies like lung and colon screening as well as orthopedic and sinus scanning. You can also use the Tin Filter technology in a range of other applications, including topograms and calcium scoring, that you can now carry out at previously unknown low dose levels.



0.1 mSv

Sinus CT at X-ray dose levels.
Follow-up study for sinusitis.

Spectral-shaped Tin Filter scan (Sn100 kV) combined with Stellar^{Infinity} resolution enables high image quality.

Courtesy of Erasmus MC, University Medical Center Rotterdam, Rotterdam, The Netherlands


SOMATOM Drive
lets you optimize
performance at all times
by simplifying routines
and accelerating
workflows.

Drive precision for your environment

With SOMATOM Drive, you can upgrade your standardization of quality of care and heighten your process efficiency by introducing automated workflows. It also helps you to simplify daily routines and reach a new level of modernization.

Standardize your quality of care

Because most clinical routines are not fail-safe – there are too many factors that play a vital role and influence the routines – staff training, scan preparation, and staffing costs, to name but a few, are critical elements. CT imaging is usually very demanding, as all of the technological advancements and patient requirements have to be taken into consideration, and this can affect image quality. SOMATOM Drive lets you standardize your institution's quality of care to previously unattainable levels.

Simplify routines

SOMATOM Drive's FAST Integrated Workflow is very easy to use, and utilizes a clear and intuitive user interface to simplify the procedure and provides consistency across users and patients. A reliable single-operator approach – from beginner to advanced users – minimizes dependence on staff experience levels, which helps reduce staff training time and costs. Due to the programmable nature of the user interface, the FAST Integrated Worklow is a group of technologies that will not only support you today, but will also grow with you into the future.

Modernize to maximize automation

In today's medical world as much as tomorrow's, advanced technology that enables automated procedures to eliminate mistakes and facilitate the daily work of staff is essential. Incorrect patient positioning, incorrect scanning modes, and multiple image creation are time-consuming and can impede workflows.

Safeguard correct and consistent positioning

Accurate patient positioning is essential for safe, error-free CT imaging with no rescans and time loss. However, users are as individual as patients, and so the quality of results can differ enormously. With its game-changing FAST Integrated Workflow, SOMATOM Drive helps technologists acquire the right body region at the right dose – in a reproducible way.

Precise position – precise quality and dose
The world's first FAST 3D Camera in conjunction with FAST applications helps your team provide first-time-right scans, manage tight schedules, and potentially examine more patients.

Get closer to your patients
At the same time, with the Touch Panels, technologists can provide instruction and assistance much closer to patients. Considering the growing pressures on healthcare providers, this could enhance patient cooperation, staff satisfaction, and even your institution's reputation.

Unique combination of solutions

FAST 3D Camera
powered by FAST Integrated Workflow

+

Touch Panels
powered by FAST Integrated Workflow

"Special attention must be paid to a correct patient centering in order to optimize organ doses and image quality of the respective CT examination."[2]

Overcoming challenges in your environment

With low-dose imaging, improved treatment planning leads to better patient outcomes and more referrals, while an easy, one-protocol-fits-all approach allows simplified, consistent, and high-quality imaging 24/7. The future of patient positioning is at the touch of a button. Improve your workflow and get closer to your patients with SOMATOM Drive's highly integrated Touch Panels.

Environmental challenges

The huge diversity and complexity of urgent or unplanned patients is usually compounded by patients not being able to understand instructions. It is therefore essential that image quality is consistent across all patients, however varied.

Consistency

Movement during scan

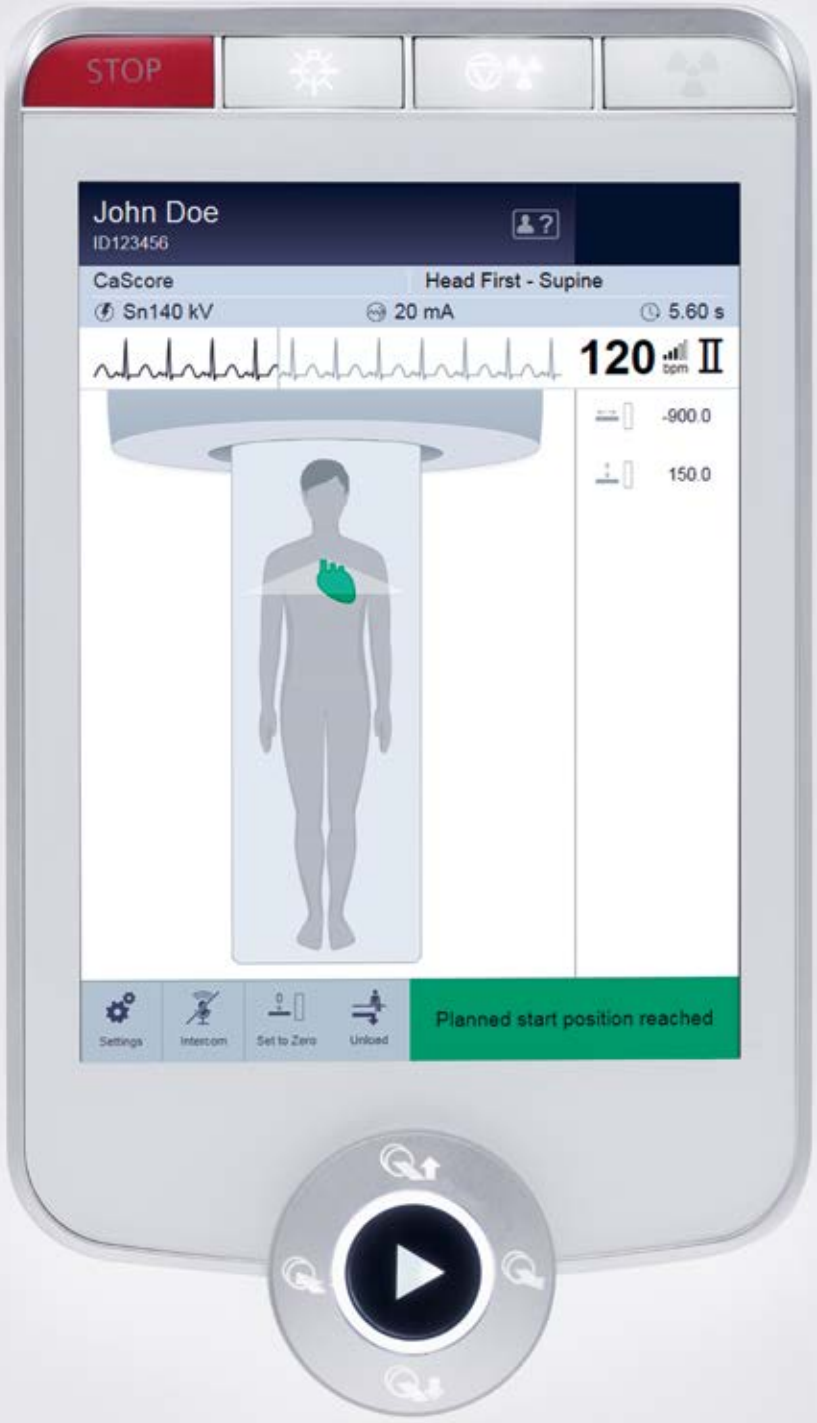
Image quality

Solutions

SOMATOM Drive provides an advanced FAST Integrated Workflow, combining unique FAST 3D Camera technology with the Touch Panel interface including high-quality ECG signal display for exceptional cardiac imaging, and improves workflow with fast planning based on body region. Move away from plain push button interaction with your scanner and patients - all in a sleek, modern design with reduced obsolescence.

Touch Panels powered by FAST Integrated Workflow

FAST 3D Camera powered by FAST Integrated Workflow



Automation drives precision in challenging environments

Overcome workflow bottlenecks and staff training challenges with Siemens Healthineers' unique fully and semi-automated workflow features. SOMATOM Drive comes as standard with tried and trusted FAST and CARE features, and with Siemens Healthineers' patented pitch-independent image quality with SureView™, as part of the DistinCT Imaging bundle.

Environmental challenges

Even with advanced positioning methods such as the Touch Panels, the addition of many advanced and unique features can lead to concerns about complex workflows and the need for a very highly skilled workforce.

Consistency

Dose sensitivity

Image quality

Solutions

CARE Dose4D™ automatically sets the right dose levels for the clinical matter in question.

CARE kV automatically selects the precise kV level for each patient.

SureView™ allows the system to maintain image quality at all pitch levels available.

Superfast Scanning (Flash Spiral) enables high-pitch scanning with both tubes.

Adaptive Dose Shield, driven by fast collimator technology, removes the pre- and post-overscanning typical on spiral CT scans.

CARE Child provides the lowest kV settings possible on the system (70 kV), and the protocols to utilize them in routine.

CARE Profile provides simple and immediate visualization of the dose profile for each patient.

CARE Dashboard supports implementation of all Siemens Healthineers' dose-saving features.

CARE Bolus allows you to save and use contrast media protocols and to link these to each scan protocol. To go one step further, **CARE Contrast** is configured routinely with the system to synchronize the injection with the start of the scan.

X-CARE provides a unique and efficient way of reducing direct radiation dose to the sensitive tissues, such as the corneas and breast tissue.

FAST Adjust is a one-click parameter adjustment tool that helps deliver high image quality even in challenging patients.

WorkStream4D™ is the basis of fast 3D imaging workflows.

DistinCT Imaging

Automation drives precision in overburdened environments

Imaging techniques and procedures are increasing, and the number of images available for review, discussion, and reporting is also growing. Siemens Healthineers' unique automated image creation features, included in the DistinCT Reading bundle, aim to reduce this burden and improve workflows.

Environmental challenges

The increased volume of images from CT scanners has also increased the burden on reporting radiologists. This can lead to longer reporting times per case, which creates a bottleneck for the whole hospital, not just radiology. Additionally, the consistency of the diagnostic result may be reduced due to the increased pressure on reporting times.

Consistency

Inceased reporting times

DistinCT Reading

Solutions

DistinCT Reading includes:

Artifact reduction:

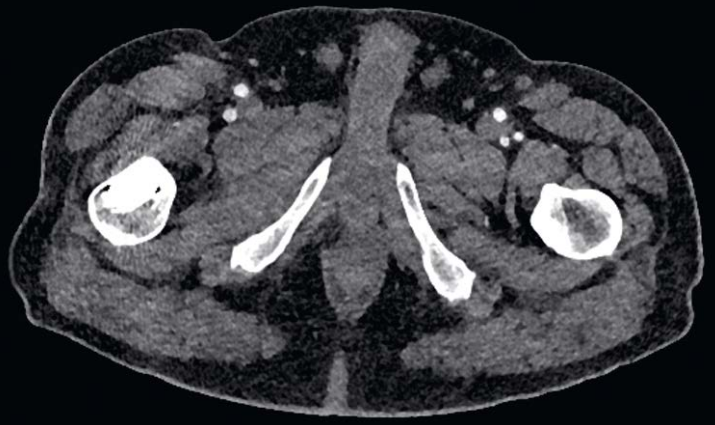
- Siemens Healthineers' unique iMAR algorithms provide specific metal artifact reduction. Working in conjunction with Dual Energy, as well as bone algorithms, this technology **helps change the way we diagnose in CT** when metal is present.

Advanced reading:

- CT Spine images can be time-consuming to read, and to produce. Automatically aligned and labelled FAST Spine images for **advanced neurological and orthopaedic results** help to reduce this burden.

iMAR

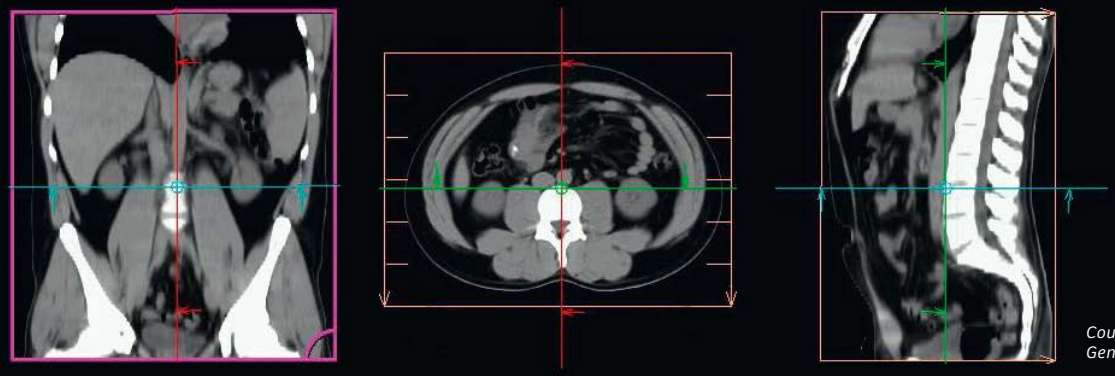
Without iMAR



With iMAR

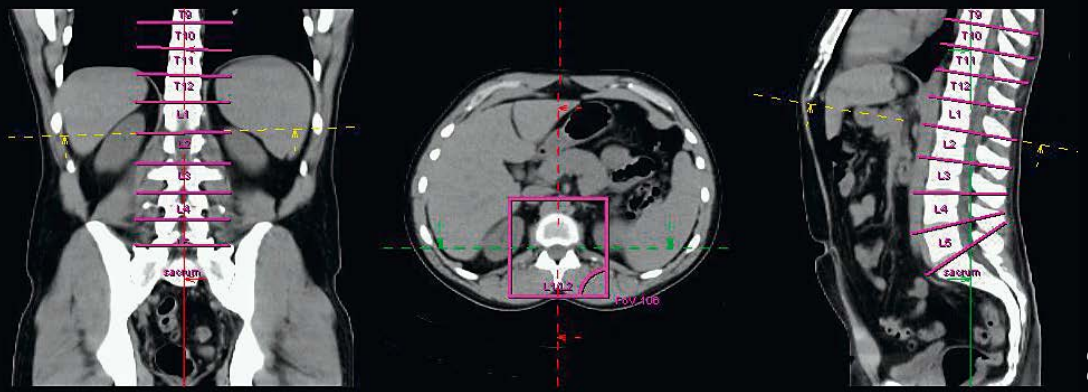
Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

FAST 3D Align



Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

FAST Spine

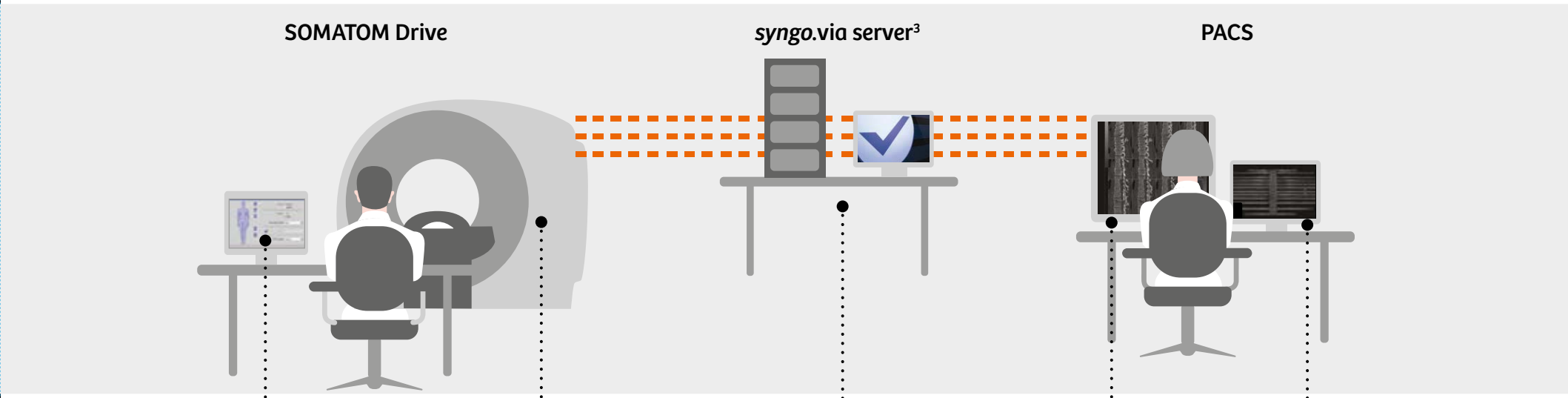


Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

Support fast workflow

FAST 3D Align and FAST Spine automate reconstruction angulations precise to each individual patients anatomy.

Reading as simple as it should be



Rapid Results improves your efficiency by reducing your workflow steps

Rapid Results enables direct communication between *syngo*.via and SOMATOM CT scanners, enabling zero-click post-processing within the selected scan protocol. In this way, *syngo*.via automatically creates and sends ready-to-read results from wherever you are to your PACS or a film printer.

Rapid Results knows what you need, just when you need it. This is reading as simple as it should be.

With Rapid Results, you can automatically generate neuro perfusion maps, standard visualizations of general vessels and different anatomies in various types and orientations, or visualizations of the rib cage[4] in an easy-to-report format.

Define your workflow once, and let Rapid Results produce the basis for your decisions.

Your benefits with Rapid Results

1. Clinical innovations like CT Bone Reading for routine exams regardless of expertise level
2. Standardized and consistent image quality independent of operator
3. Post-processing as part of the standard reconstruction task
4. Ready-to-read results wherever you want them


With
SOMATOM Drive,
you are prepared for
future challenges – new
diseases, new patients,
and new workflows –
in an approach to
medicine that puts
people first.

Drive precision for your business needs

Driven by future technologies

SOMATOM Drive's DistinCT Function puts quantitative CT at your fingertips and introduces a new level of diagnostic information to CT, with enhanced qualitative and quantitative analysis being an everyday part of clinical routines. Another future-driven feature is the Stellar^{Infinity} detector, which, boosted by integrated IR (Iterative Reconstruction), helps achieve exceptionally low radiation levels and enhances one of the most advanced integrated chip designs with a direct link to software developments.

Opening doors to new opportunities

To support both current and new operators, SOMATOM Drive lets you implement unprecedented system-management efficiencies. You can also optimize administrative procedures by combining market-leading applications that simplify and accelerate the reporting process. This gives you more valuable time for the most important part of your work: treating patients.

Overcoming business challenges

As a leader in innovation, Siemens Healthineers understands the benefit of keeping your business future-focussed.

With SOMATOM Drive, we have established the methods of integrated IR and Touch Panel interfaces to provide a system that will grow with the user, and to support the latest clinical methods and opportunities.

The system comes with the highest level of hardware and software needed to perform the clinical procedures that your referral base requires now and in the future.

Solution: Future-driven hardware/ software integration

SOMATOM Drive offers **unique and highly precise innovations** that are designed and programmed with this future-driven focus in mind. As already mentioned, we have introduced intergrated IR as a new way of handling the now commonplace topic of iterative reconstruction (IR). In addition, the new user interface on the Touch Panels brings operators **even closer to their patients**.

Dedicated teams of pioneering engineers, programmers, and physicists are always **working tirelessly to improve** these technologies so that the system continues to satisfy the needs of a growing CT business.

Touch Panels

Integrated IR

DistinCT Function

Solution: Quantitative imaging at your fingertips

Whilst CT is now routine in clinical practice, the technology continues to grow and provides increased opportunities for improving outcomes. The functional and quantatative areas of CT are growing strongly, whether in the aforementioned cardiovascular imaging, or in areas such as Dual Energy, dynamics, and perfusion. Stay relevant in your clinical practice with a system that provides all of these options as standard.

DistinCT Function Includes:

- Cardiovascular imaging
- Dual Energy
- Dynamic imaging

DistinCT Function

Quantitative CT at your fingertips

Quantitative analysis in clinical routine includes:

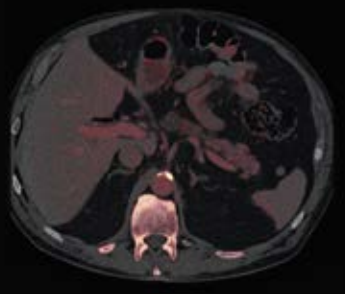
Dual Energy started out as a buzzword in the industry. It was a young technology that required clinical validation.

Siemens Healthineers' Dual Source Dual Energy has been refined significantly over the past decade, and offers the widest portfolio of clinically proven applications.

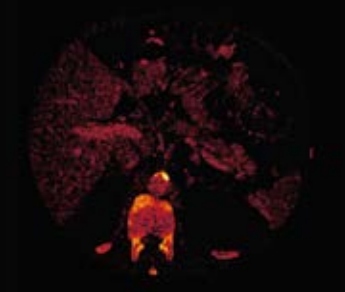
SOMATOM Drive utilizes unique Tin Filter technology to clearly separate the two energy spectra, a key requirement for producing the most accurate quantitative and clinically relevant results.

Dual Energy

Virtual noncontrast (VNC)



Fused (VNC + iodine map)



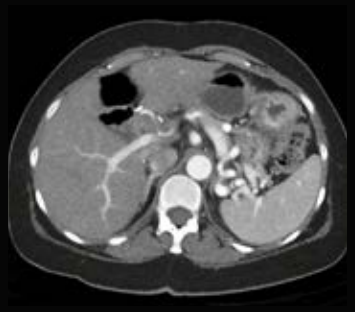
Iodine map

Dual Energy assessment after pancreatic head carcinoma resection and common bile duct (CBD) stenting.

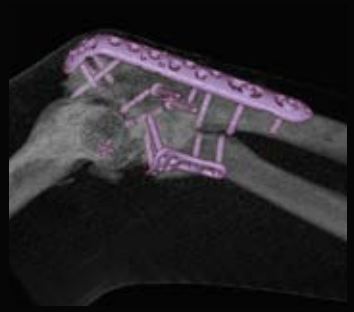
Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

The Dual Energy portfolio:

Access the broadest range of clinically validated features

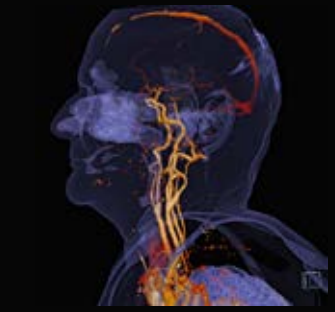


Optimum Contrast

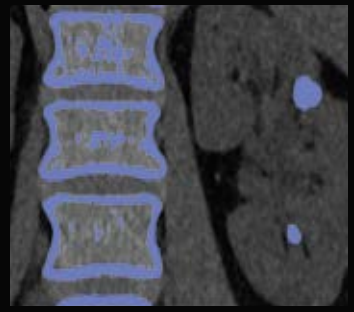


Monoenergetic

syngo.CT DE Gout

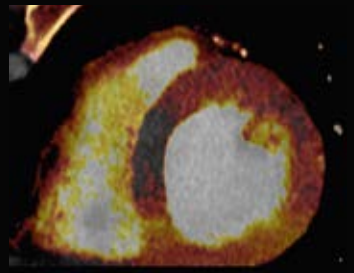


syngo.CT DE Direct Angio



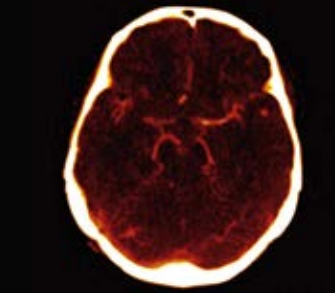
syngo.CT DE Calculi Characterization

syngo.CT DE Lung Analysis

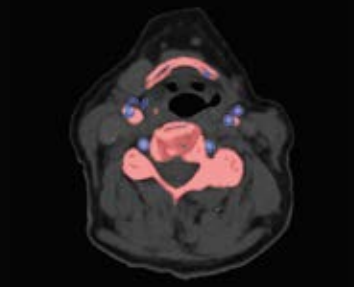


syngo.CT DE Heart PBV

syngo.CT DE Virtual Unenhanced

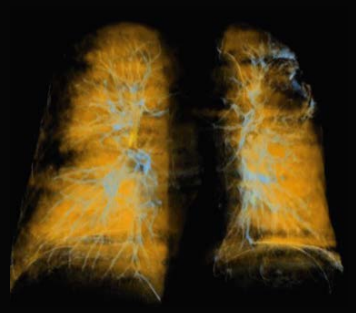


syngo.CT DE Brain Hemorrhage

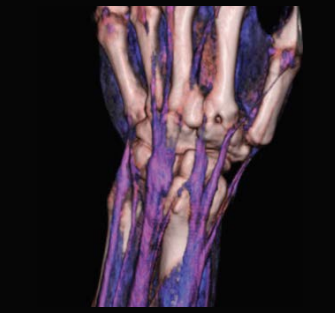


syngo.CT DE Hardplaque Display

syngo.CT DE Lung Nodules



syngo.CT DE Xenon



syngo.CT DE Musculoskeletal

DistinCT Function

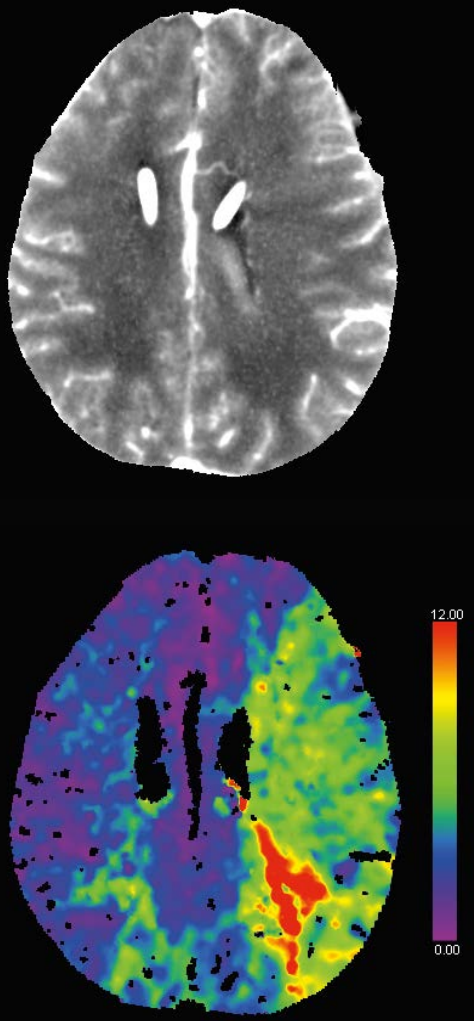
Quantitative CT at your fingertips

Quantitative analysis in clinical routine includes:

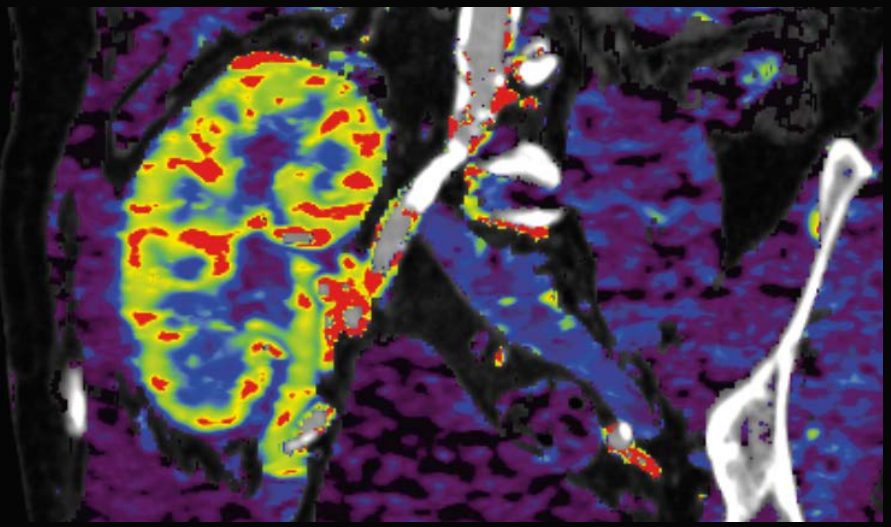
Dynamic imaging for full organ perfusion and dynamics: routine applications utilizing large perfusion ranges, with neurological and body applications.

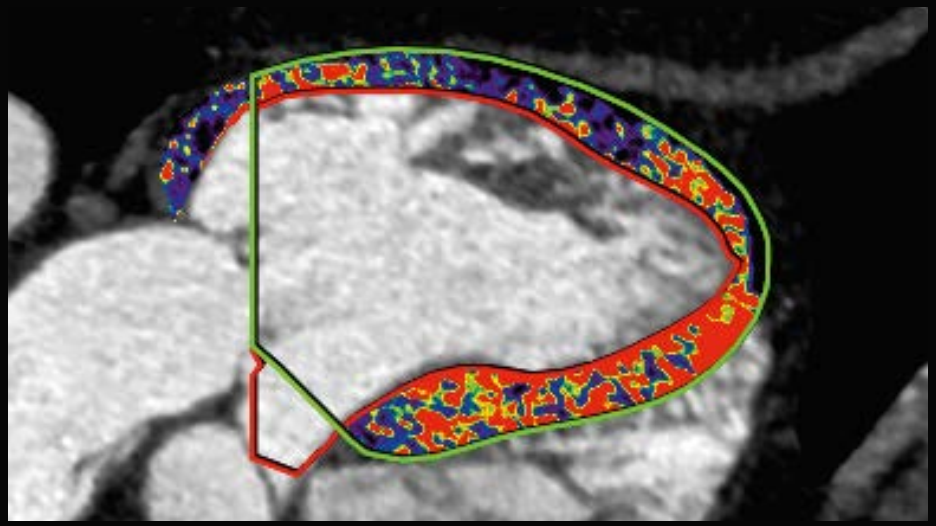
Dynamic angiography provides a unique diagnostic tool which, combined with low kV scan modes, may provide significant patient outcome benefits.

Dynamic perfusion studies: Neuro



Dynamic perfusion studies: Body





Dynamic vascular studies

Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

CT-guided procedures drive new business opportunities

Interventional procedures such as biopsies and ablations increasingly use or require CT image guidance. Siemens Healthineers' i-Control-assisted Adaptive 3D Intervention Suites[5] provide unique, advanced tools for these procedures, and aim to reduce procedure times, guide outcomes, and ultimately reduce complications.

Business challenges

Interventional procedures, being invasive, pose a clear risk to the patient, and therefore to overall profitability for the hospital, clinic, or practice. Any issues that occur during the procedure can extend stay times, create after-care requirements, and reduce the efficiency of the reading physician. Long or extended procedure times are key risk factors for postprocedural complications.

Consistency

After-care

Solutions

The Adaptive 3D Interventional Suite[5] provides unique features that are designed to help increase the speed and accuracy of these complex procedures.

Needle Tip detection offers an automated view of the position of the needle in situ.

3D workflows offer automated visualization of the lesion or anatomy.

The workflow is contained in a single, user-friendly user interface, which helps reduce interscan delays.

Interventions


SIEMENS
Healthineers
SOMATOM Drive

Technology overview

Detectors:	Stellar^{Infinity} detectors
Max. scan speed:	458 mm/s
In-plane temp.-res:	75 ms
Rotation coverage:	131 mm/rot
kV settings:	70 – 140 kV @ 10 kV Steps
mA@ 70 kV, 80 kV:	650 mA, 750 mA
Spatial resolution:	0.30 mm
Table load:	up to 307 kg / 676 lbs[5]
Gantry opening:	78 cm
Generator power:	200 kW (2 x 100 kW)
Slice acquisition:	2 x 128

Dual Source CT – Generation 2.5

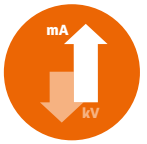
SOMATOM Drive is built on advanced, clinically proven Siemens Healthineers technology. Combining the architecture of the second-generation DSCT (SOMATOM Definition Flash) with the power of the third-generation DSCT (SOMATOM Force), this system is a precise clinical scanner for all. Low-dose scanning is provided by the accurate, high power of the Straton® MX Sigma X-ray tubes and Sigma generators, whilst image quality is enhanced by the Stellar^{Infinity} detectors and integrated IR.

Innovative hardware

SOMATOM Drive features up to four Touch Panels, which bring users closer to the patient whilst supporting improved workflows. The slick aesthetic design, including ring light and ergonomic table design, really makes this a system that drives precision for all.

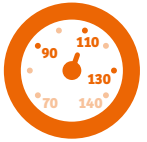
Straton® MX Sigma X-ray tube

Stellar^{Infinity} detector



High Power

Integrated IR



10 kV Steps

FAST Integrated Workflow

Tin Filter

DistinCT

Additional products and services

syngo.via[6] – reading as it should be: simple and cinematic

Reading should be simple.
If you like to read and report with ease, you will love the new _syngo_.via. All your favorite tools are centralized in one place – from basic distance measurement to CT vascular tools. This saves you clicks and mouse movement. With the new Findings Assistant, you can organize your findings and make sure you focus on what is relevant.

Reading should be cinematic.
Make communication with referrers and patients clear and convincing. With the new Cinematic VRT[7] in _syngo_.via, you can make your case look like something from an anatomy textbook. It only takes one click to create stunning, easy-to-understand clinical images. Use this photorealistic material for education, publication, and communication.

siemens.com/_syngo_.via

syngo.via Frontier[8] – your open platform for translational research

An ideal research environment gives you access to the latest applications, provides tools that translate your ideas into tangible prototypes, and supports your exchange with other experts around the world. With _syngo_.via Frontier, you can explore the potential of advanced postprocessing prototypes that are seamlessly integrated with your routine _syngo_.via system. _syngo_.via Frontier also enables you to easily implement your own algorithms and connects you directly with other key opinion leaders and the Siemens Healthineers predevelopment teams.[9] Save time and reduce costs with an integrated research solution. Boost your reputation and attract talents as well as patients.

siemens.com/_syngo_.via-frontier

Customer Services – providing users with expertise and efficiency over the long term

We are constantly focusing on high-quality services. With our wide service portfolio for CT, which offers comprehensive service contracts including different training modules, Siemens Healthineers is well positioned to address diverse customer needs in the market.

siemens.com/user-services

Guardian Program™ including TubeGuard

Predicting your tube's lifecycle:

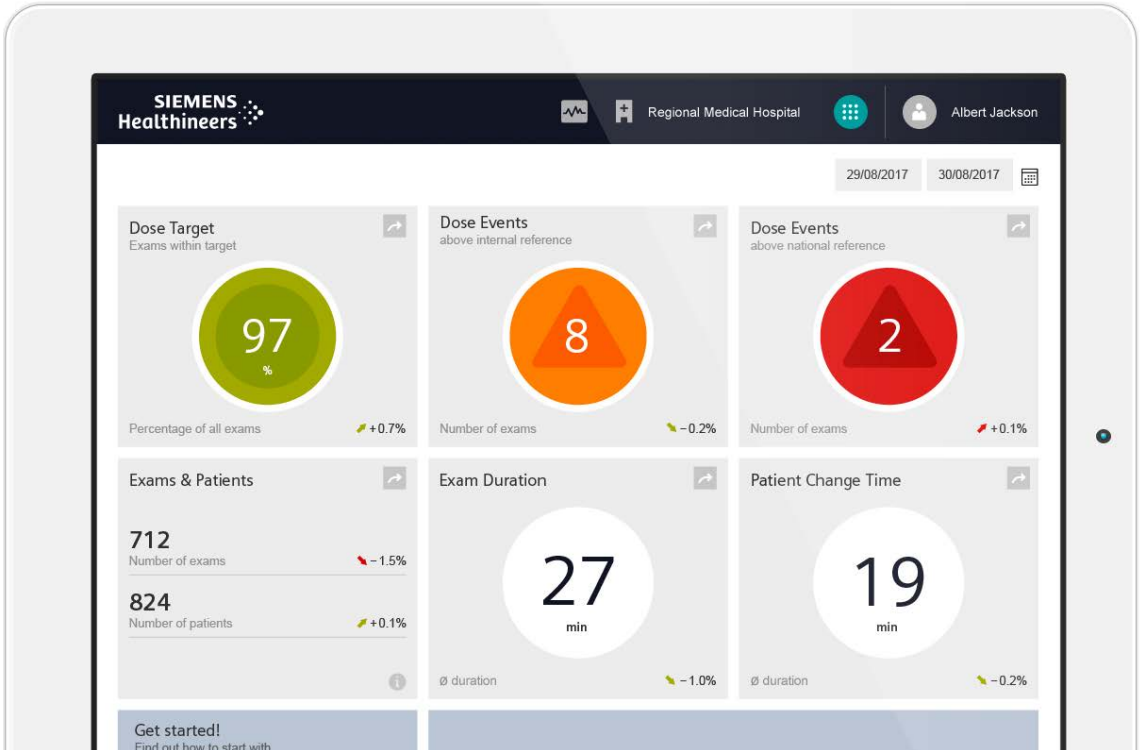
- Continuous real-time monitoring
- Focus on the X-ray tube
- Failure prediction

siemens.com/system-services

teamplay

teamplay gives you instant[10] access to the dose and workflow data from your multi-vendor imaging fleet. teamplay applications not only help you to see what happens at modality level but also to manage protocols remotely[11,12].

siemens.com/teamplay



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Why Siemens Healthineers?

At Siemens Healthineers, our purpose is to enable healthcare providers to increase value by empowering them on their journey towards expanding precision medicine, transforming care delivery, and improving patient experience, all enabled by digitalizing healthcare.

An estimated 5 million patients globally everyday benefit from our innovative technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics and molecular medicine, as well as digital health and enterprise services.

We are a leading medical technology company with over 170 years of experience and 18,000 patents globally. With more than 48,000 dedicated colleagues in 75 countries, we will continue to innovate and shape the future of healthcare.

SOMATOM Drive is not commercially available in all countries. Due to regulatory reasons its future availability cannot be guaranteed. Please contact your local Siemens Healthineers organization for further details.

On account of certain regional limitations of sales rights and service availability, we cannot guarantee that all products included in this brochure are available through the Siemens Healthineers sales organization worldwide.

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The information in this document contains general technical descriptions of specifications and options as well as standard and optional features which do not always have to be present in individual cases.

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[1] Lell MM, May MS, Brand M, Eller A, Buder T, Hofmann E, et al. Imaging the Parasinus Region with a Third-Generation Dual-Source CT and the Effect of Tin Filtration on Image Quality and Radiation Dose. Am J NeuroRadiol. 2015 Jul;36(7):1225-1230.

[2] Saltybaeva N, Alkadhi H, Vertical Off-Centering Affects Organ Dose in Chest CT: Evidence from Monte Carlo Simulations in Anthropomorphic Phantoms. Medical Physics. 2017 Nov;44(11):5697-5704.

[3] *syngo*.via is required, optional.

[4] Some features may require additional options.

[5] Option.

[6] *syngo*.via can be used as a standalone device or together with a variety of *syngo*.via-based software options, which are medical devices in their own right. *syngo*.via and the *syngo*.via based software options are not commercially available in all countries. Due to regulatory reasons their future availability cannot be guaranteed. Please contact your local Siemens Healthineers organization for further details.

[7] Requires the license *syngo*.via Cinematic VRT. Cinematic VRT is recommended for communication, education, and publication purposes and is not intended for diagnostic reading.

[8] For research use only. Not for clinical use.

[9] Requires specific agreement with Siemens Healthineers.

[10] Prerequisites include: wireless connection to clinical network, meeting recommended minimum hardware requirements, and adherence to local data security regulations.

[11] Remote scanner access in teamplay helps to standardize and optimize scan protocols across a fleet at different locations. This could create a cost reduction for »unproductive« hours. Assume a 10h/week traveling time to harmonize MR protocols across five sites with an hourly wage of $90 for a chief radiographer.

[12] teamplay Protocols supports selected Siemens Healthineers scanners. Please contact your Siemens Healthineers representative for more details.

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