Drive precision for all

SOMATOM Drive

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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.

"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."

André Hartung
Head of Business Line Computed Tomography
at Siemens Healthineers


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, your every business need, and, of course, your specific environment.

Highlights

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 CARE Screen, which is powered by Tin Filters and features 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. If 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

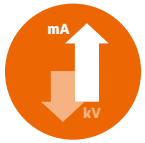
Movement during scan

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.

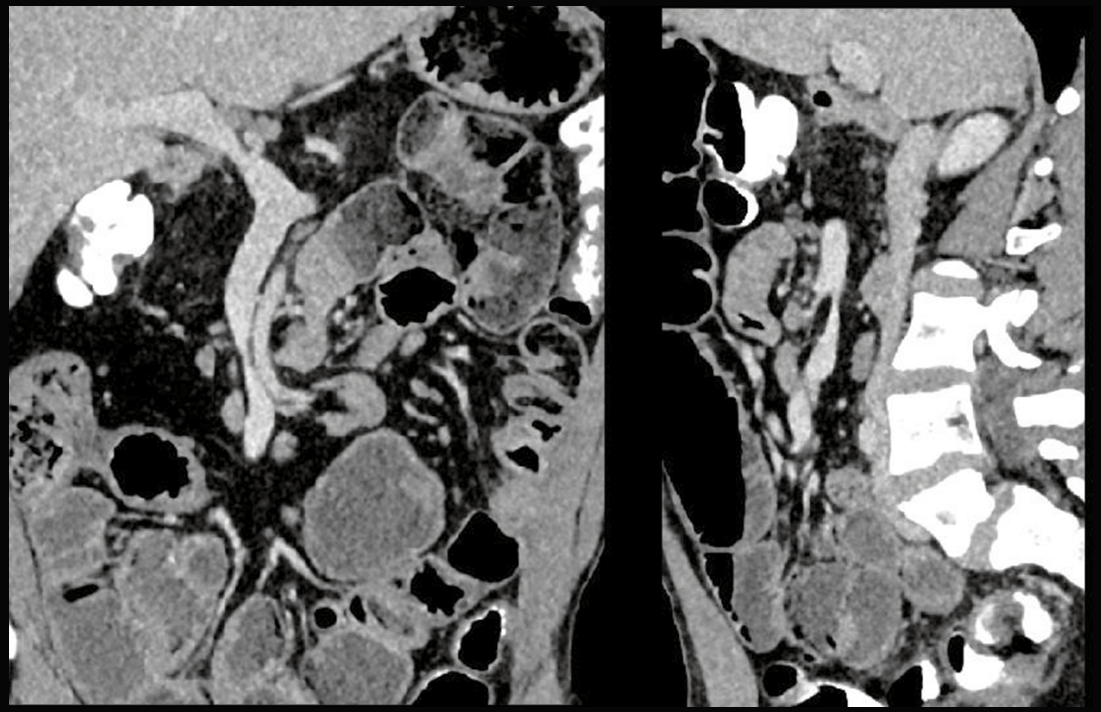
Superfast Scanning with 75 ms temporal resolution enables high image quality at low dose.

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

Thoraco-abdominal CTA. 9 y/o child, free breathing, Superfast Scanning at 80 kV.

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

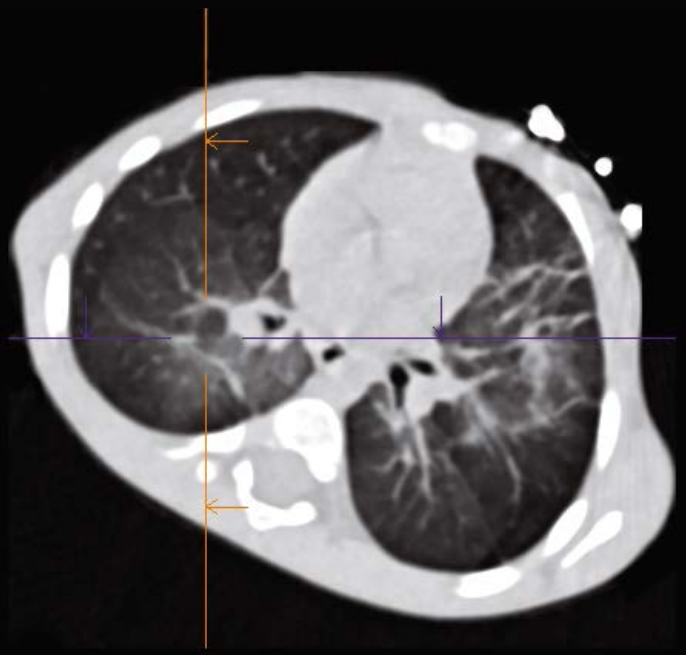
Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

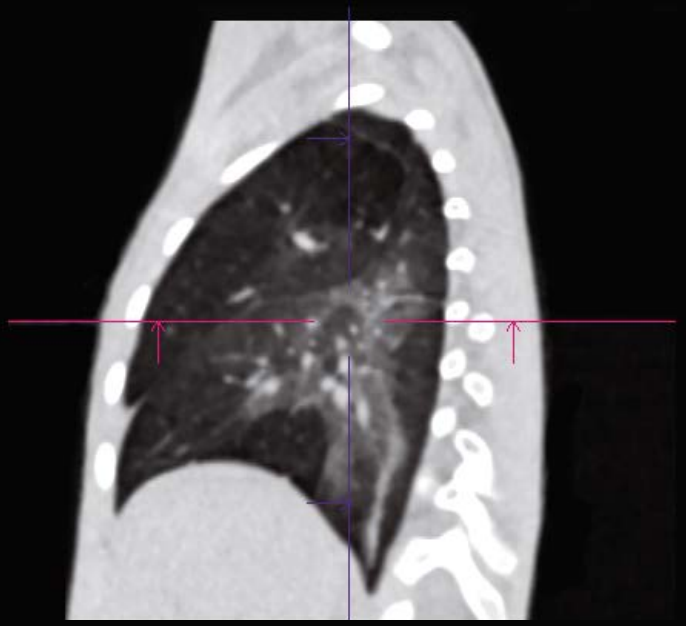


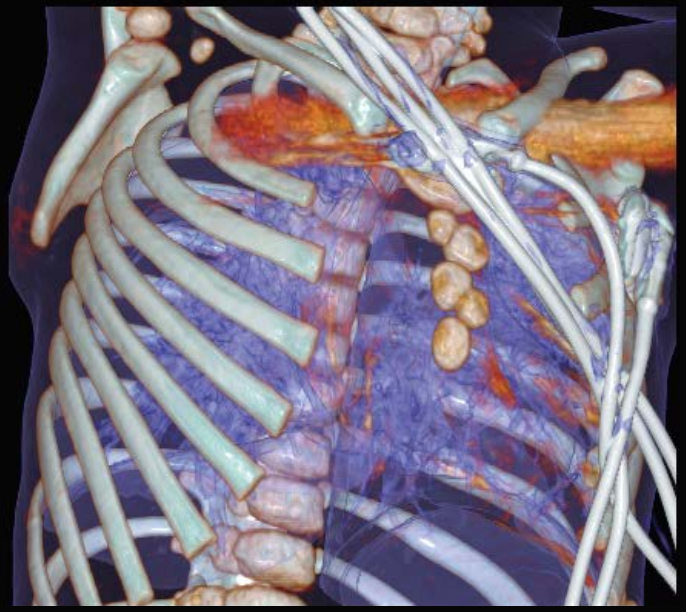
Low-dose, post-contrast abdomen. Bowel obstruction and abdominal vein stenosis.

High Power 80 enables low-dose, low-kV scanning, which is especially useful in 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.

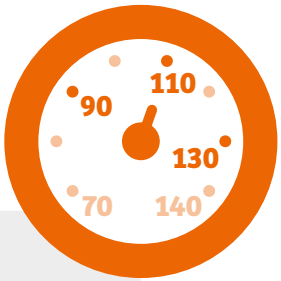
Patient challenges

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

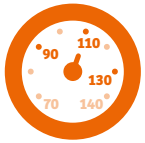
Breathing

Positioning not possible

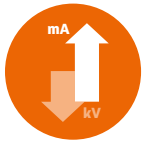


Solutions

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.

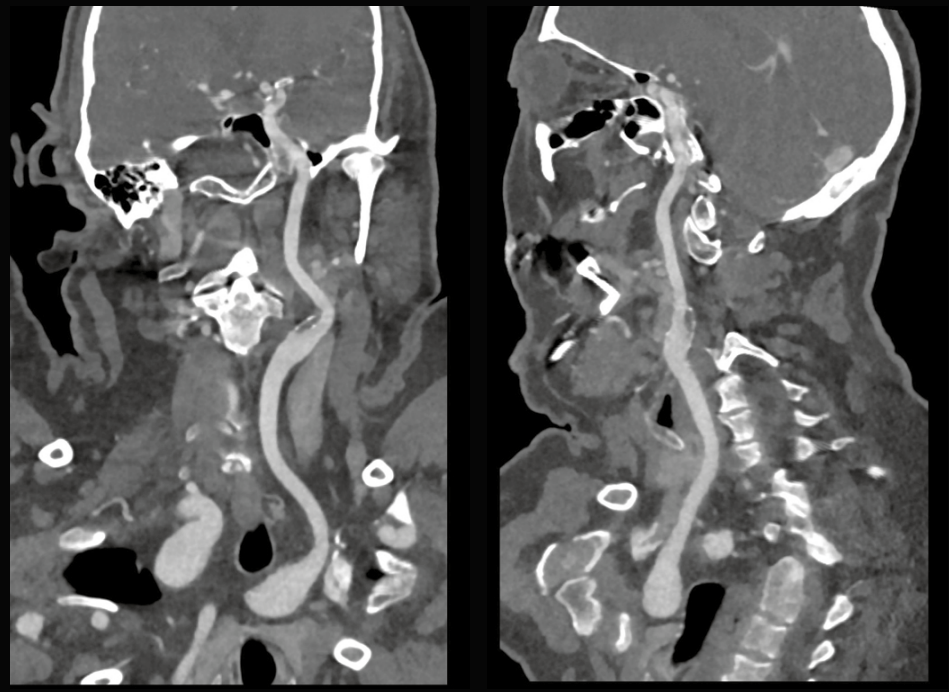


10 kV Steps



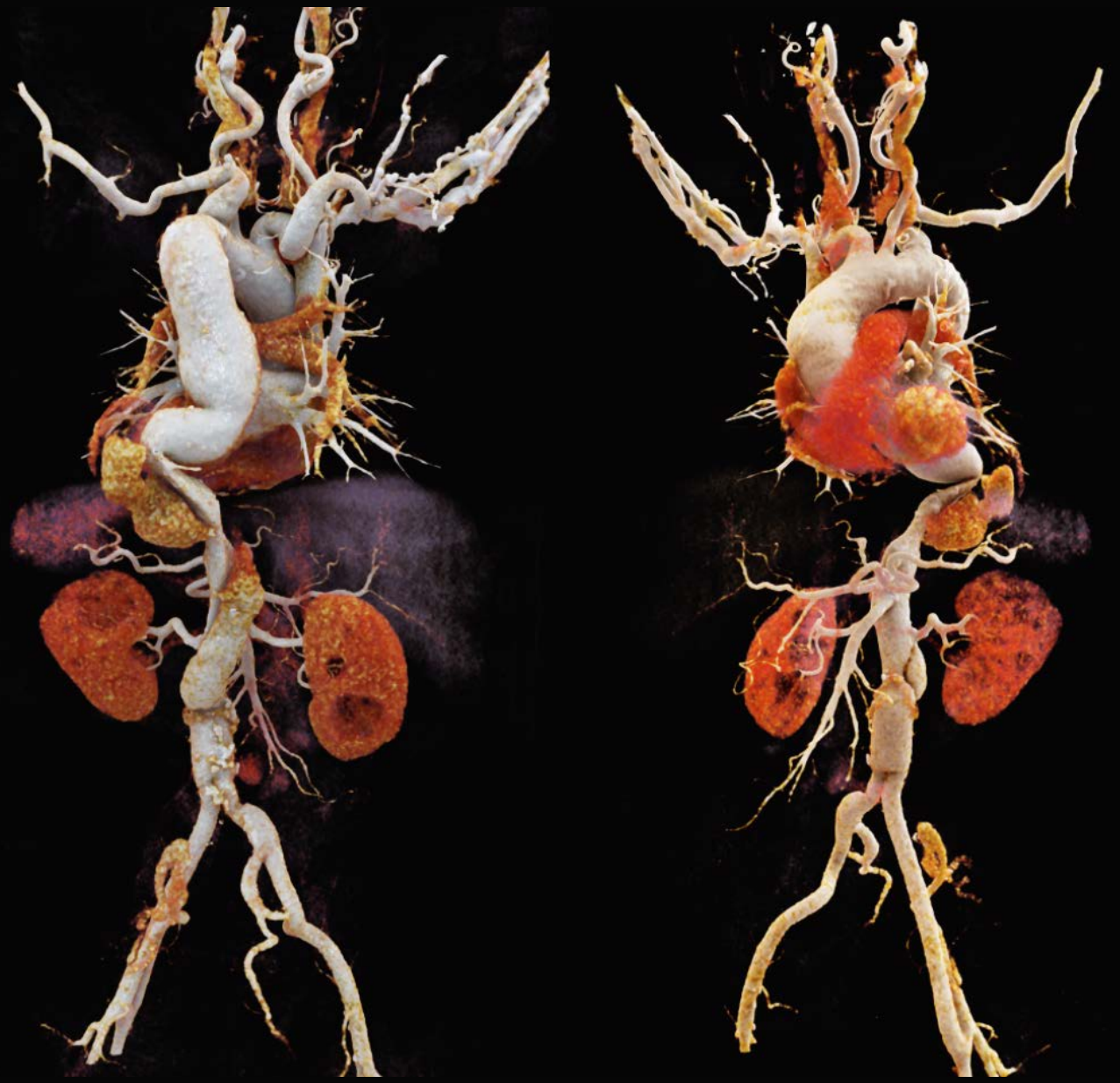
High Power

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.

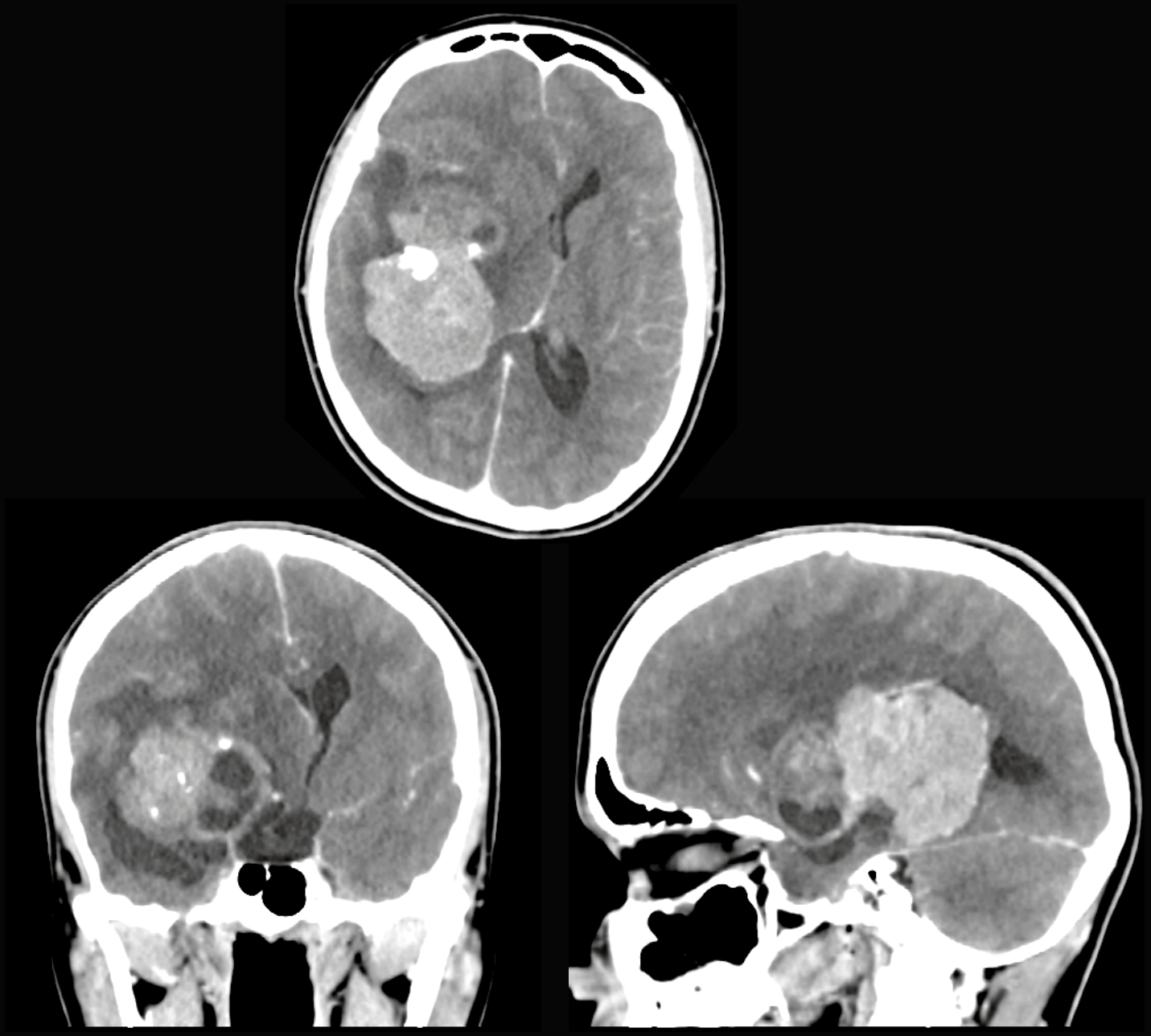
Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria



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.

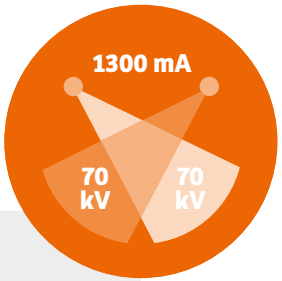
Patient challenges

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 can affect kidney function, so monitoring takes longer.

Scan not possible

Consistency

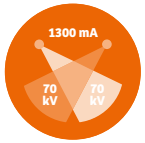
After-care



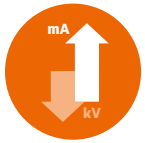
Solutions

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.

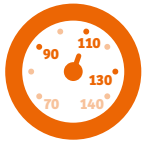
With SOMATOM Drive's Dual Power, you can **harness the full power of Dual Source CT**.



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 y/o 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 y/o 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 y/o 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

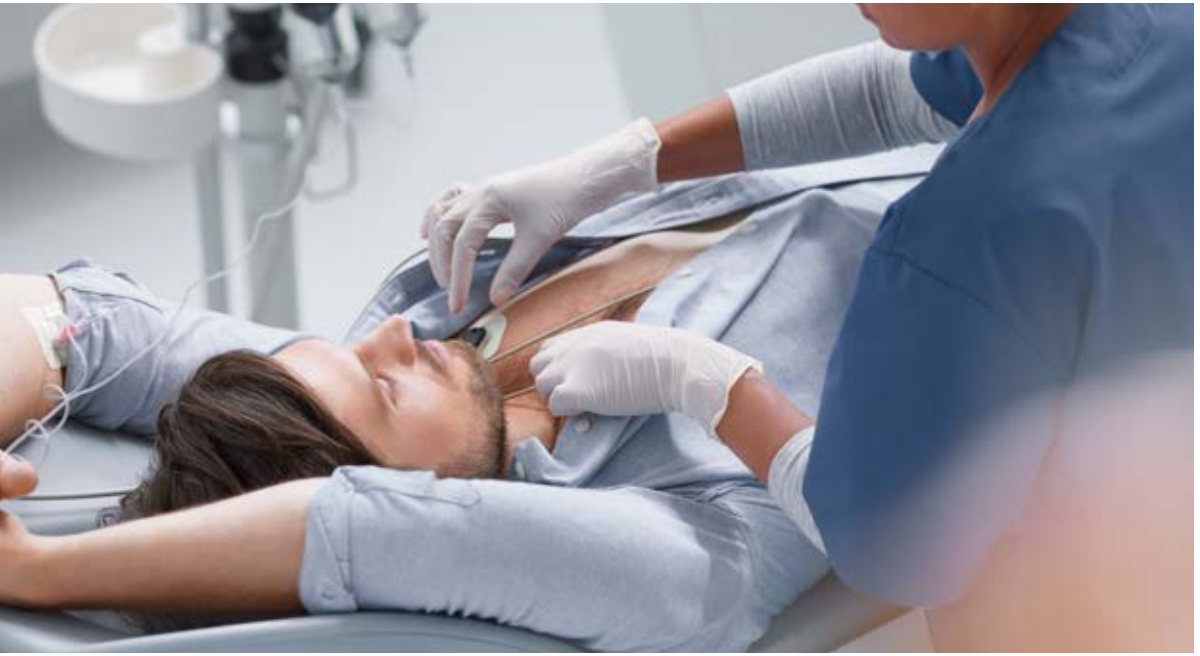
31 y/o female, average size. Low-dose thorax for planning and 4D pulmonary vessel evaluation reveals lung varices rather than an arteriovenous malformation.

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

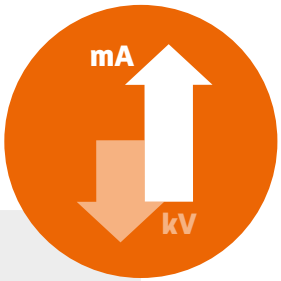
Heart pumping

Consistency

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.

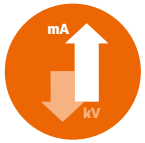
Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria



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**.

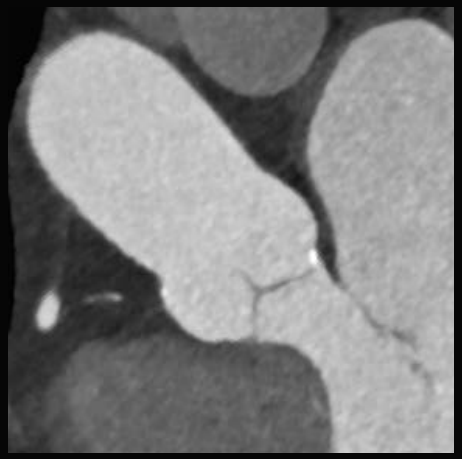
High Power allows the **combination of speed and power** required for high-quality, low-dose cardiothoracic imaging.

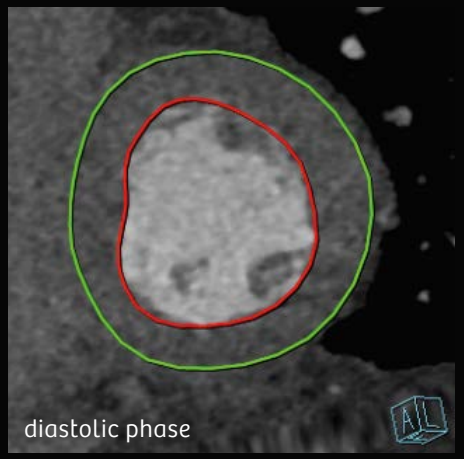


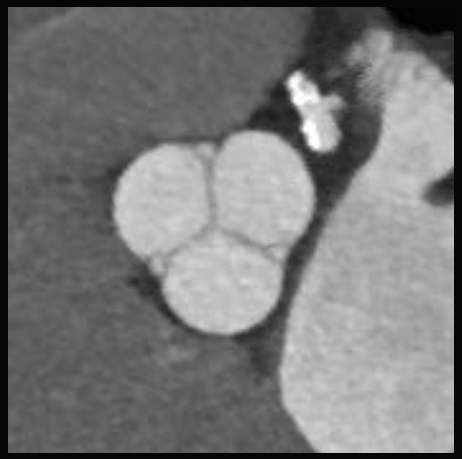
High Power

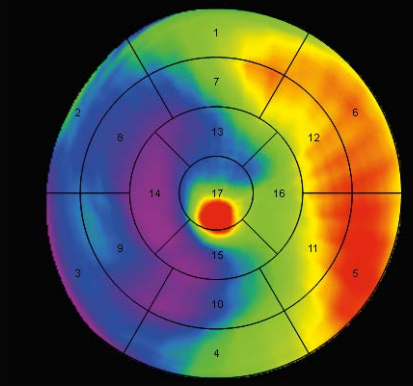
Superfast Scanning

Dual Source









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 y/o 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

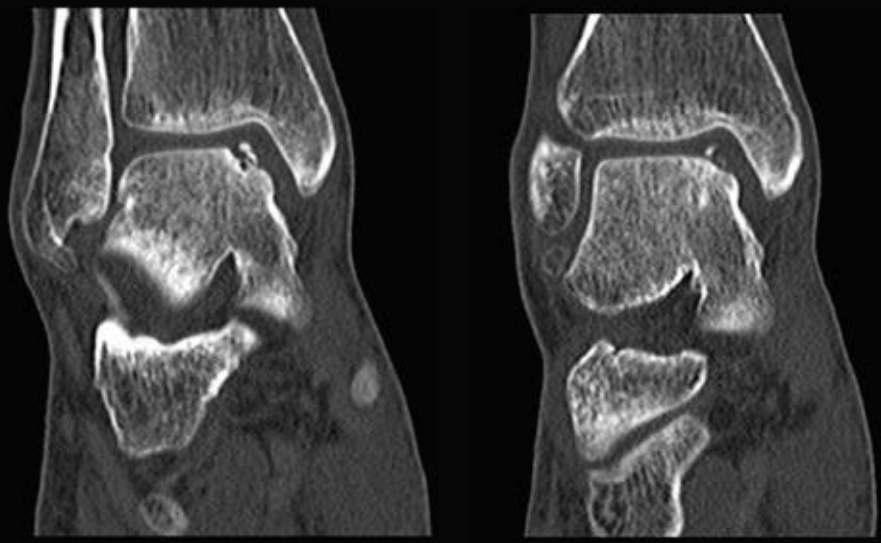
Imaging extremities with Tin Filters leads to a **significant dose benefit** over several examinations, bringing the dose of a CT scan to that expected of a routine X-ray.

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

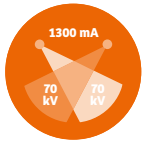
Solutions

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 y/o 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 y/o 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

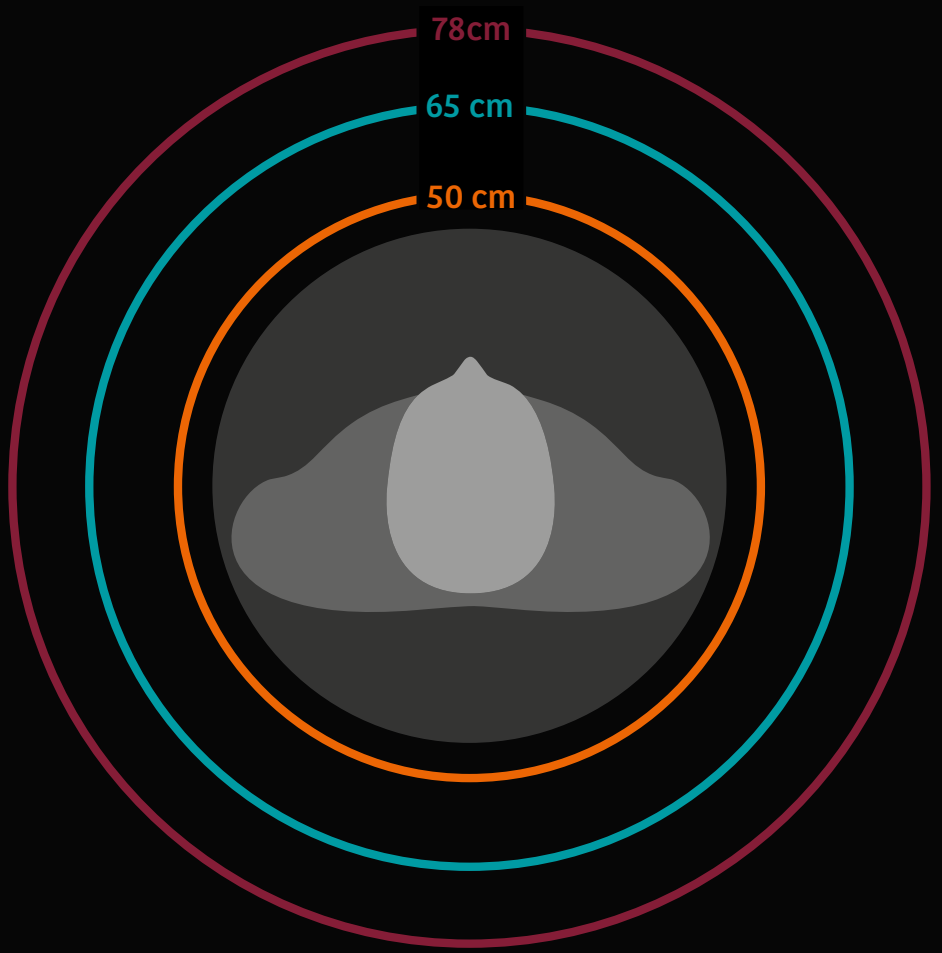
Designed to enable visualization of the skin line of human body parts located outside of the standard field of view (complete bore size)

65 cm HD field of view

Siemens Healthineers specifies Hounsfield units (HU) accuracy to within +/- 50 HU

50 cm scan field of view

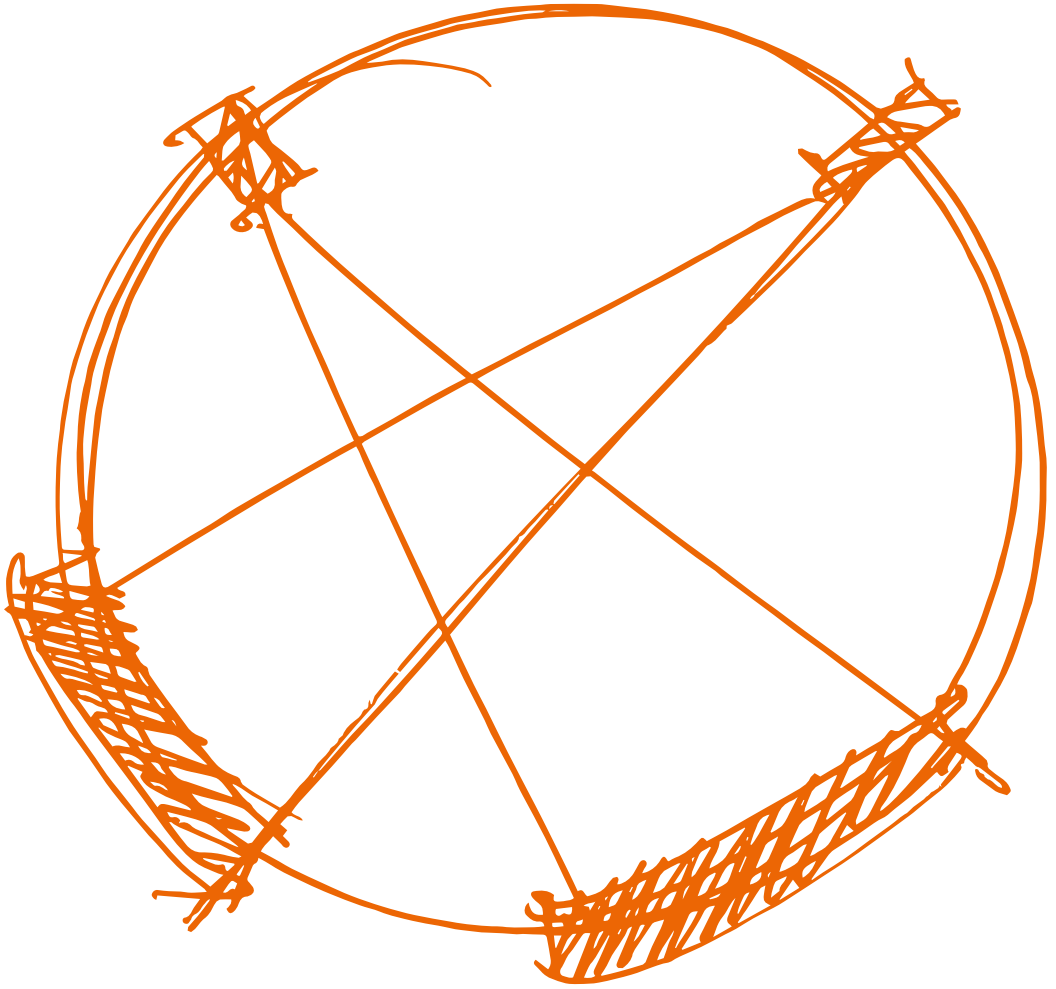
Full reconstruction



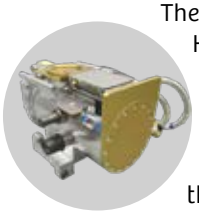
Precision in the imaging chain

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

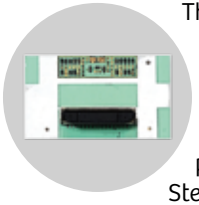


Straton® MX Sigma X-ray tubes and generators



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

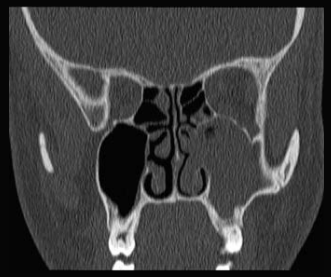


The Stellar^{Infinity} detector features the most modern integrated chip design in the Siemens Healthineers portfolio. In addition to using the unique Ultra Fast Ceramic (UFC) detector material and the successful integration process seen with the Stellar detector, the Stellar^{Infinity} detector goes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

Integrated IR – keep up to date with the latest algorithms

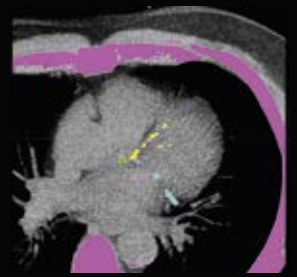
Standard iterative reconstruction protocols allow you to standardize care and provide low doses for all patients, including those in Acute Care. Integrating the iterative reconstruction algorithms to a higher degree optimizes dose and image quality, and goes beyond just software, with Advanced Data Coding 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


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 digital Touch Panels are very easy to use, and a clear user interface simplifies the procedure and provides consistency across users and patients, especially for follow-up scans. 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 Touch Panels are a technology 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.

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

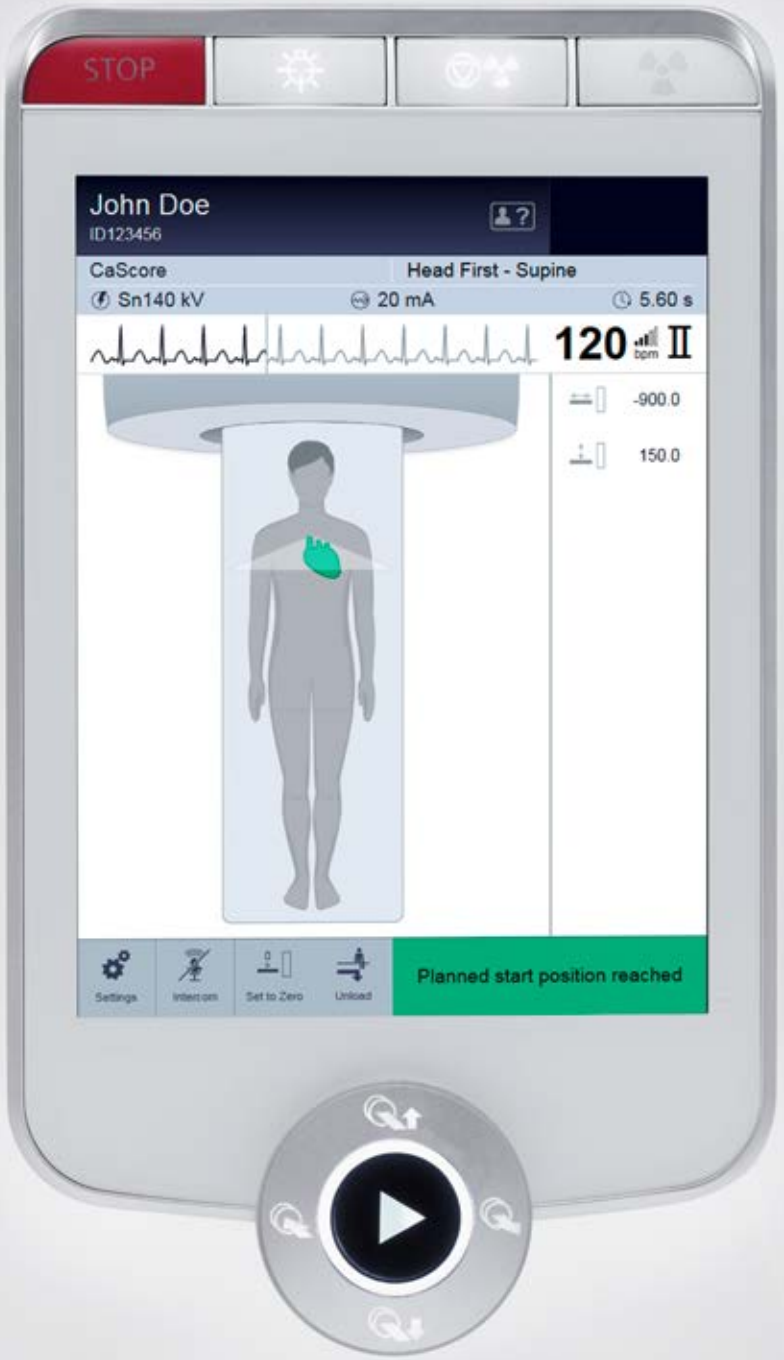
Image quality

Solutions

SOMATOM Drive provides a **high-quality ECG signal** display for exceptional cardiac imaging, and **improves workflow with fast positioning** based on body region.

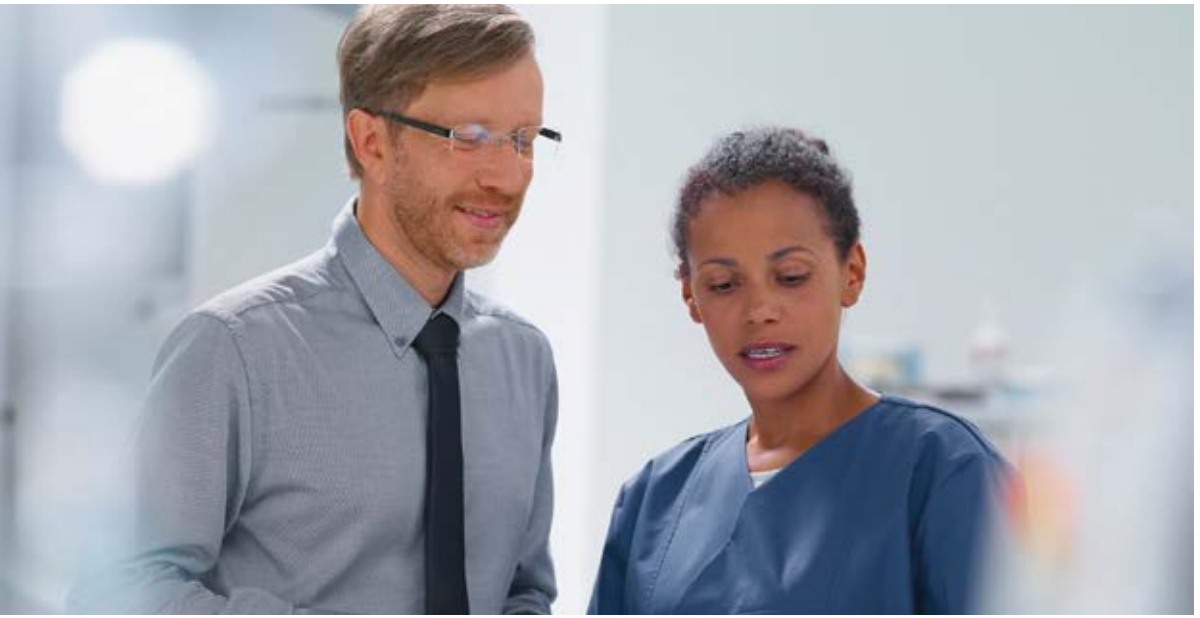
Move away from plain push-button interaction with your scanner and patients. SOMATOM Drive offers scan selection and ECG monitoring on patient level, and Touch Panel interfaces that provide a unique growth potential – all in a sleek, **modern design with reduced obsolescence**.

Touch Panels



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

FAST Planning automatically adjusts scan ranges precisely to the patients anatomy.

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 Cardio Wizard guides you step by step through a cardiac workflow, supporting consistency and quality in cardiovascular imaging.

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.

Automatic image alignment:

- With WorkStream4D™ and FAST 3D Align combined, anatomically oriented ready-to-read images can automatically be sent, to the PACS, **supporting fast workflows**, for creating and reading clinical images.

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.

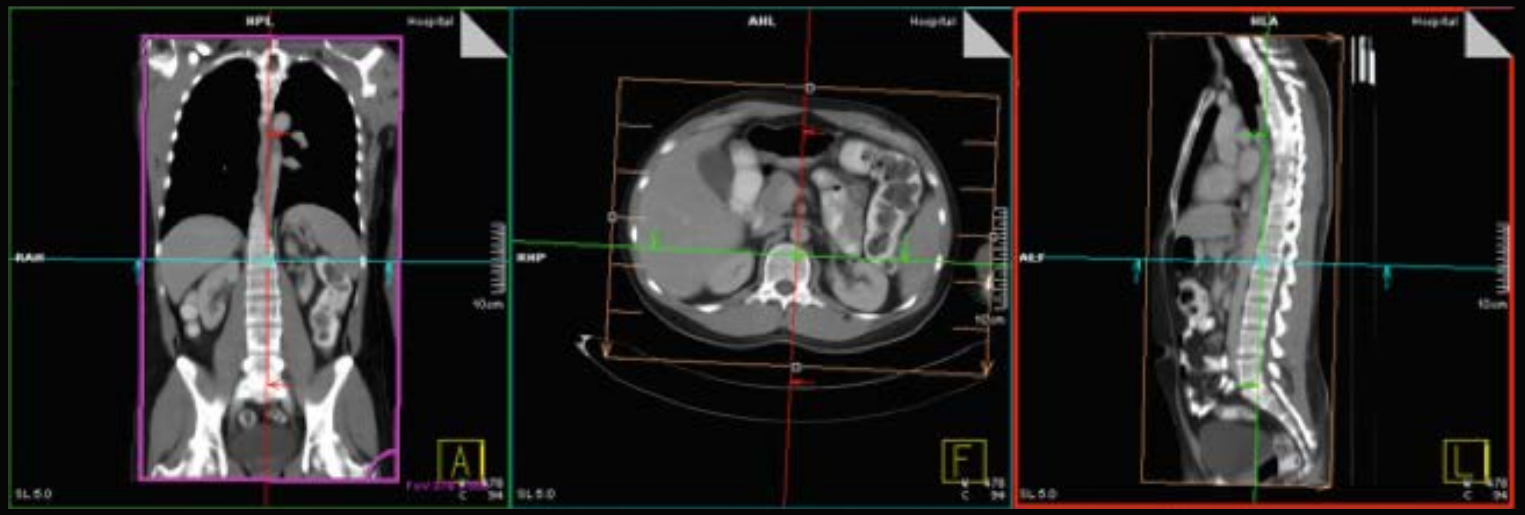
iMAR

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

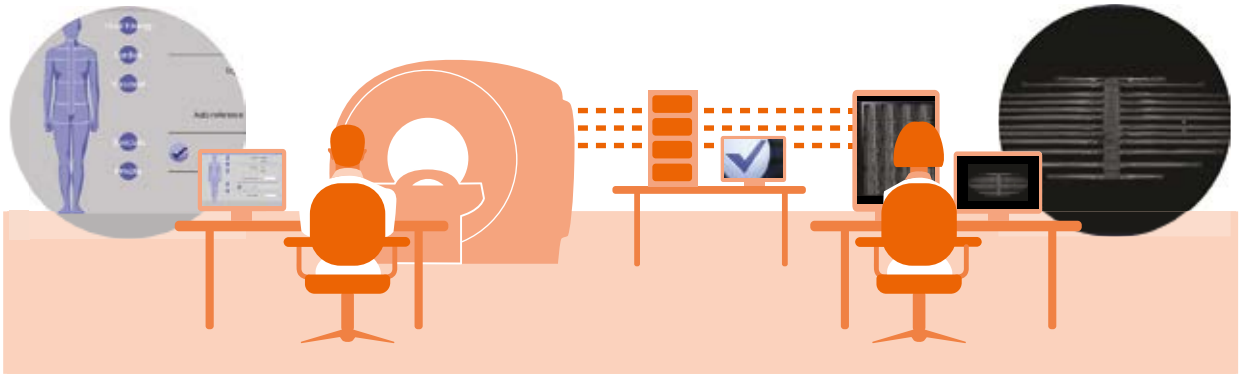
Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

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

SOMATOM Drive **_syngo_.via server[1]** **PACS**



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[2] 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 afforementioned 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:

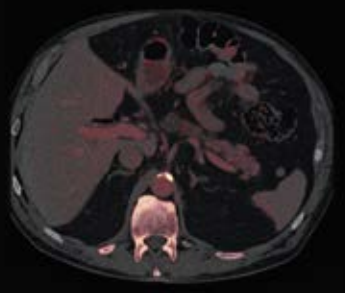
Dual Energy started out as a buzzword in the industry. It was a young technology that required clinical validation.

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

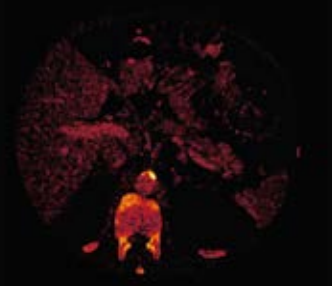
SOMATOM Drive utilizes unique Tin Filter technology to clearly separate the two energy spectra, a key requirement for producing the most accurate quantitative and clinically relevant results.

Dual Energy

Virtual noncontrast (VNC)



Fused (VNC + iodine map)



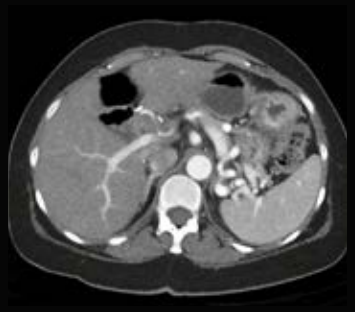
Iodine map

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

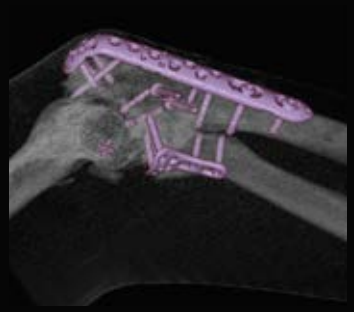
Courtesy of Medical University of Vienna, General Hospital AKH, Vienna, Austria

The Dual Energy portfolio:

Access the broadest range of clinically validated features



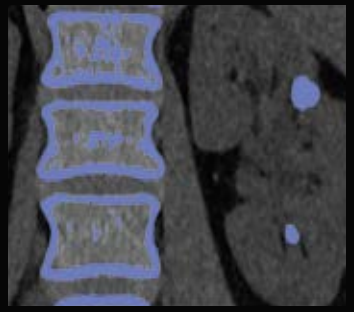
Optimum Contrast



Monoenergetic

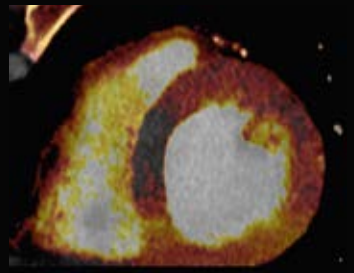
syngo.CT DE Gout

syngo.CT DE Direct Angio



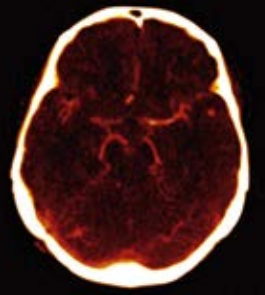
syngo.CT DE Calculi Characterization

syngo.CT DE Lung Analysis

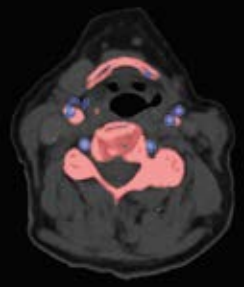


syngo.CT DE Heart PBV

syngo.CT DE Virtual Unenhanced

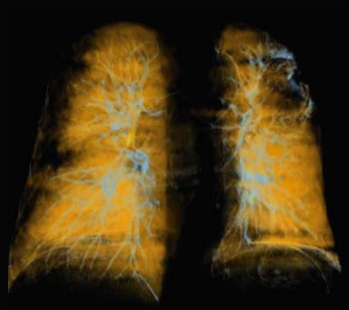


syngo.CT DE Brain Hemorrhage



syngo.CT DE Hardplaque Display

syngo.CT DE Lung Nodules



syngo.CT DE Xenon

syngo.CT DE Musculoskeletal

DistinCT Function

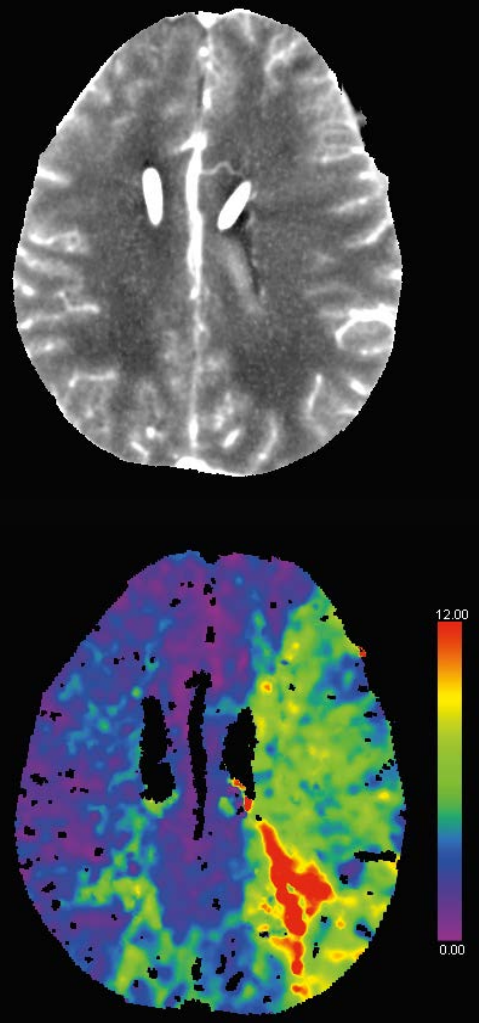
Quantitative CT at your fingertips

Quantitative analysis in clinical routine includes:

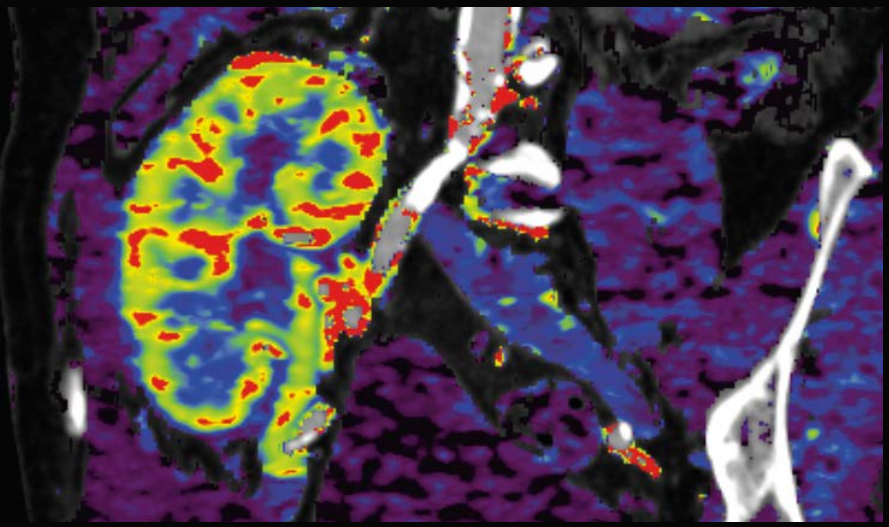
Dynamic imaging for full organ perfusion and dynamics: routine applications utilizing large perfusion ranges, with neurological and body applications.

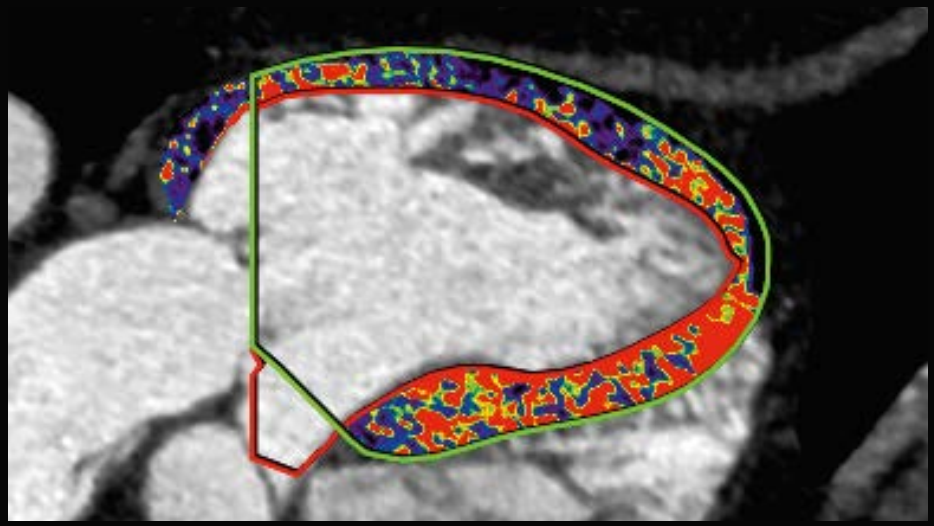
Dynamic angiography provides a unique diagnostic tool which, combined with low kV scan modes, may provide significant patient outcome benefits.

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[3] 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[3] 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

Additional products and services

syngo.via[4] – 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[5] 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 – 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. 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:

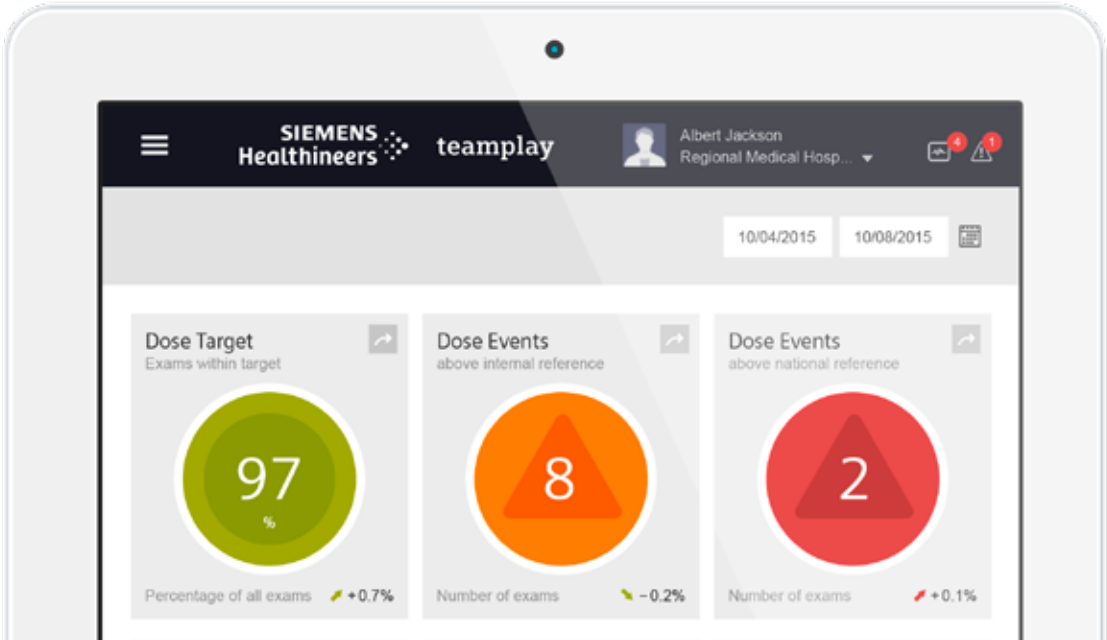
- Continuous real-time monitoring
- Focus on tube
- Failure prediction

siemens.com/system-services

teamplay

Connect, compare, collaborate[6]

teamplay helps you to securely connect, compare, and collaborate. Connecting to the teamplay cloud gives you instant[6] access to your data for faster decsion-making based on reliable, well-structured, and up-to-date key metrics. Comparing[7,8] performance data to peer institutions helps you maintain competitive standards.



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siemens.com/somatom-sessions
healthcare.siemens.com/news


SIEMENS
Healthineers
SOMATOM Drive

Technical specifications

Key data

Detectors ..... Stellar^{Infinity} detectors
Max. scan speed ..... 458 mm/s
In-plane temp.-res ..... 75 ms
Rotation coverage ..... 131 mm/rot
kV steps ..... 70 – 140 kV @ 10 kV Steps
mA@ 70 kV, 80 kV ..... 650 mA, 750 mA
Spatial resolution ..... 0.30 mm
Max. table load ..... 307 kg / 676 lbs[3]
Gantry opening ..... 78 cm
Generator power ..... 200 kW (2 x 100 kW)
Slice acquisition ..... 2 x 128

Dual Source CT – Generation 2.5

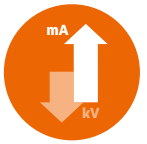
SOMATOM Drive is built on advanced, clinically proven Siemens Healthineers technology. Combining the architecture of the second-generation DSCT (SOMATOM Definition Flash) with the power of the third-generation DSCT (SOMATOM Force), this system is a precise clinical scanner for all. Low-dose scanning 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.

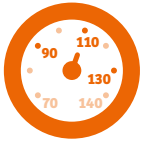
Straton® MX Sigma X-ray tube

Stellar^{Infinity} detector



High Power

Integrated IR



10 kV Steps

Touch Panels

Tin Filter

DistinCT

Why Siemens Healthineers?

At Siemens Healthineers, our focus is to help healthcare providers succeed in today's dynamic environment.

Healthcare providers around the world have long relied upon our engineering excellence – leading-edge, high-quality medical technologies across a broad portfolio. Our technologies touch an estimated five million patients globally every day.[9] At the same time, they help hospital departments to continuously improve their clinical, operational and financial outcomes.

We now consolidate this unprecedented volume of data and insights and turn them into pioneering enterprise and digital health services. With those, we maximize opportunities and share risks for the success of your entire health system.

Partnerships are built on people. With Siemens Healthineers there is no team more committed and more connected than we are to realize your success together.

Siemens Healthineers.
Engineering success.
Pioneering healthcare.
Together.

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 sales organization worldwide.

Availability and packaging may vary by country and is subject to change without prior notice. Some/All of the features and products described herein may not be available in the United States.

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.

Siemens reserves the right to modify the design, packaging, specifications, and options described herein without prior notice. Please contact your local Siemens sales representative for the most current information.

Note: Any technical data contained in this document may vary within defined tolerances. Original images always lose a certain amount of detail when reproduced.

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

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

[2] Some features may require additional options

[3] Option

[4] *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 organization for further details.

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

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

[7] This information about this product is preliminary. It is under development, not commercially available, and its future availability cannot be guaranteed.

[8] Availability of benchmarking option depends on a minimum number of considered subscribers to guarantee customer anonymity and data protection.

[9] Siemens AG, “Sustainable healthcare strategy – Indicators in fiscal 2014”, page 3-4

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