



# Stand out in advanced CT procedures

## SOMATOM go.Top

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



# A fundamentally changing environment

The healthcare market is transforming. Apart from the ongoing consolidation of hospitals and diagnostic imaging centers, perhaps the two most prominent areas of change are reimbursement structures and demographics.

Healthcare providers are facing, for example, the shift toward outcome-oriented compensation models and an aging population with growing care needs for chronic diseases. In clinical practice, this often means having to manage an increasing number of patients at lower costs. At the same time, consolidation comes along with the need for smooth fleet management and standardized results across networks.

It is therefore vital for healthcare providers to set themselves apart in a competitive market. They must find ways to increase efficiency and secure referrals by offering outstanding, patient-centric service.



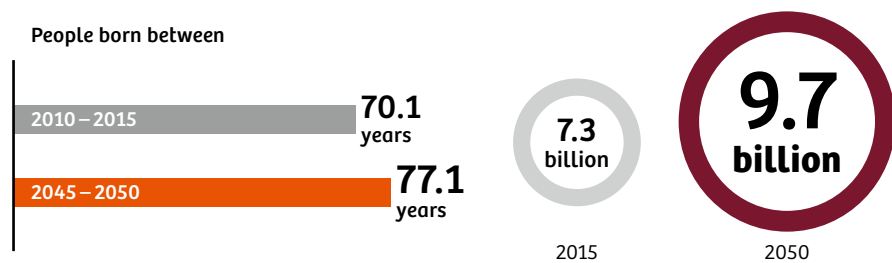
*“Your daily success is important to us. In order to help you master advanced clinical fields, we developed SOMATOM go.Top in close collaboration with you, our customers. For me, SOMATOM go.Top is therefore a direct expression of our aim to be an inspiring partner.”*

**André Hartung**  
Head of Business Line Computed Tomography  
at Siemens Healthineers

# Staying on top in a challenging market

Changes in demographics and the healthcare market create a challenging situation for healthcare providers. While facing reimbursement cuts, they have to provide services for more – and older – patients. The market, however, also offers opportunities: The ongoing trend to have reimbursements correspond to outcome quality allows providers to profit from their efforts to set themselves apart from competition, be it through excellent clinical outcomes or patient satisfaction.

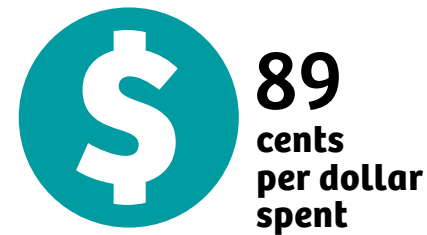
## Increase in life expectancy & world population



Average life expectancy worldwide has been increasing and is expected to continue to do so.<sup>1</sup>

World population in 2015 and estimated population by 2050<sup>1</sup>

## Reimbursement cuts and consolidation



For Medicare and Medicaid patients, U.S. hospitals only received an average of 89 cents for every dollar spent in 2015.<sup>2</sup>

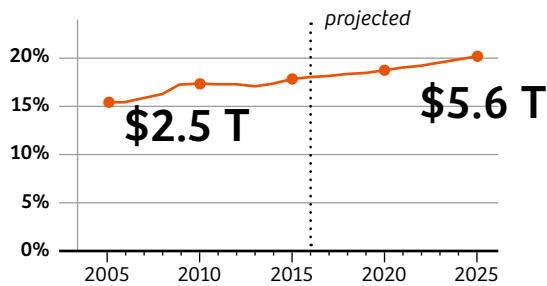
## Demographic change

As the world's population is on the rise – and expected to reach 9.7 billion by 2050 – global life expectancy is also increasing. Providing for the care of a growing and aging population will put a severe strain on medical resources.

## Economic pressure

The growing population puts enormous pressure on healthcare systems around the globe. As a result, many have responded with significant cuts in reimbursement. Another phenomenon we are witnessing is the ongoing consolidation of healthcare providers – this mandates the standardization of processes to increase efficiency.

### Expenditures on healthcare in the U.S.

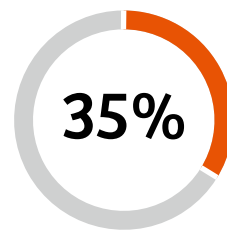


Medicare actuaries project growth rates for healthcare spending to gradually increase.<sup>3</sup>

### Growing expenditure

Total expenditure on healthcare in the U.S. is projected to grow from \$2.5 trillion in 2009 to \$5.6 trillion in 2025. As Medicare is a model for many healthcare systems worldwide, it is safe to predict similar trends in many other countries.

### Out-of-pocket health expenditure

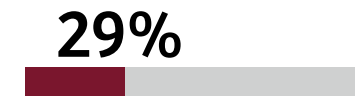


Fraction of out-of-pocket expenditure in terms of total health expenditure<sup>4</sup>

### Better informed patients

In addition, out-of-pocket expenditure on healthcare continues to be an issue for patients worldwide. Consequently, patients are more informed and more selective. Healthcare providers that positively set themselves apart stand a much better chance of attracting such patients.

### Clinical best practice to secure reimbursements



29 percent of CT departments plan to purchase a scanner with dual energy capabilities<sup>5</sup>

### The role of CT

An expected trend, especially for CT imaging, is that financial incentives will increasingly correlate to clinical best practices.<sup>6</sup> For healthcare providers, this is an opportunity to benchmark new clinical pathways with innovative technologies such as dual energy. The increasing demand for enhanced diagnostic information offered by dual energy is vividly reflected in the inclusion of its availability as a key decision criteria for future CT purchases by many providers.<sup>5</sup>

**SOMATOM  
go.Top**



# Make success your daily business

In a market characterized by intense competition, more selective patients, and reimbursement cuts, healthcare providers must find ways to leverage technological advancements and secure income and referrals. To keep the business running, it is crucial for CT departments to differentiate themselves and deliver excellent patient-centered care.

We want to help you succeed day after day. This is why we developed the SOMATOM® go. platform. As a member of this family, SOMATOM go.Top supports all users to provide the best possible scan for every type of patient – no matter the clinical demands and challenges. The scanner features a unique tablet-based mobile workflow, user guidance with our GO technologies, and exclusive innovations such as Tin Filter low-dose technology.

SOMATOM go.Top is built for personalization of processes and care, allowing every operator to optimally adapt to the individual patient and indication while interacting with patients in a more personalized way than ever before. Produce excellent results for the full clinical spectrum including Dual Energy imaging, and offer what others cannot – for a successful CT business.

**SOMATOM go.Top**  
**Stand out in advanced CT procedures**

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SOMATOM go.Top



# SOMATOM go.Top at a glance

## How it all started – with you, our customers

Based on many conversations with healthcare professionals, we realized that we needed to pursue new ideas and approaches to computed tomography.

We therefore conducted extensive interviews with 500 customers from eleven countries to learn about your everyday needs and challenges. In co-creation sessions, we asked you what your ideal CT scanner would look like.

Having gathered a wealth of insights, we commissioned a group of 50 Siemens Healthineers engineers to build the best possible CT scanner for routine and chosen advanced tasks. The result is not simply a scanner but a completely new CT platform specifically designed to overcome the obstacles associated with acquiring, operating, and maintaining a CT system. SOMATOM go.Top is part of this platform.

## Go for high performance with trendsetting workflows

For efficiency independent of the operator's level of experience and a more personal interaction with the patient, SOMATOM go.Top is built on a unique concept of mobile operation and workflow automation – for the first time available both in routine and advanced fields.

## Go for the full clinical spectrum with patient-centric technology

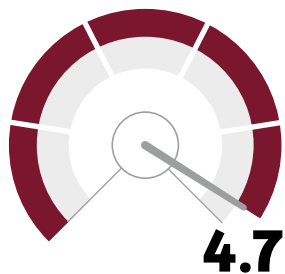
SOMATOM go.Top enables you to confidently offer specialized CT procedures, including Dual Energy. With patient-centric technologies and workflows to optimally adapt to each type of patient, all operators can turn challenging fields into routine – and serve the full clinical spectrum.

## Go for business growth with an all-in-one solution

SOMATOM go.Top features an all-in-one solution resulting in reduced total cost of ownership – while also opening additional reimbursement opportunities for business growth.

## Patients and referrers have a choice

When it comes to health services, patients are better-informed compared to the past and referrers have a choice. In such an environment, your ability as a healthcare provider to meet their expectations is crucial. At the same time, intensified cost pressure makes efficiency in your workflow equally important. Efficient throughput management and the ability to fully focus on patients are often hindered by complicated scanner operation and cumbersome workflows, particularly in advanced clinical fields.



### **“Improving patient satisfaction” rated top priority**

A 2016 market report asked respondents to name a priority for their CT department’s mission over the coming year. The top priority was to “improve patient satisfaction with their CT experience” (average rating of 4.7 out of 5).<sup>7</sup>

### **How important is this to you?**

A healthcare professional, likely a nurse or doctor, is shown in profile, wearing white scrubs and a name tag. She is holding a tablet computer and looking at the screen. The background is a blurred clinical setting with another person in white scrubs.

# Go for high performance with trendsetting workflows

For efficiency independent of the operator's level of experience and a more personal interaction with the patient, SOMATOM go.Top is built on a unique concept of mobile operation and workflow automation – for the first time available both in routine and advanced fields.

# Work more efficiently and patient-friendly with the new mobile workflow

A central element of optimizing efficiency and improving patient comfort is an entirely new approach to operating the scanner. Built around a new mobile workflow, SOMATOM go.Top features a line-up of innovative solutions. Tablet, remote control, camera, injector arm, and a new workplace design bring an unparalleled level of flexibility and mobility to daily CT procedures.

## Tablet

The lightweight, high-resolution tablet gives you total freedom over how you work. With Scan&GO technology, you just need a few steps for the entire scan. Start checking patient information as soon as you collect them from the waiting room, and then prepare the scan directly at the gantry to stay with the patient for longer. Since the images are sent wirelessly from the scanner to the tablet, operators can return to the patient after the scan and stay there while previewing the images and communicating with radiologists for instant feedback if required.





## Remote control

The easy-to-use Bluetooth remote control complements the tablet operation by streamlining scanning and making workflow processes more efficient. It simplifies patient positioning by removing the need to use hard-to-reach controls on the gantry.

Adjust the table position so everything is ready to go once the patient arrives, and start the scan remotely. Then, end examinations smoothly by moving the table into the unload position as soon as the scan is over.



## Camera

By helping you keep an eye on the patient at all times, the gantry-integrated camera makes it easy to provide better care. Its 90° viewing angle gives you a superb view of the tunnel on the stationary monitor.

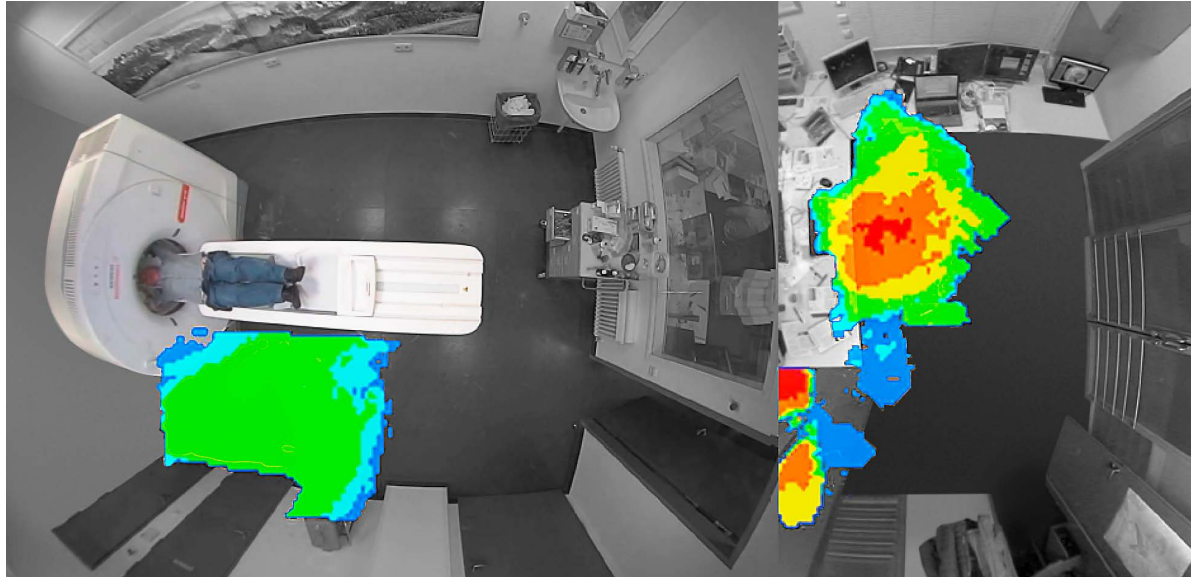
The close-up perspective makes it easy to spot even micro-movements and keep the patient in the right position. In addition to the camera, the Halo assembly includes ambient mood lighting and a digital visual countdown to help improve patient well-being and help them comply with breath-hold times.



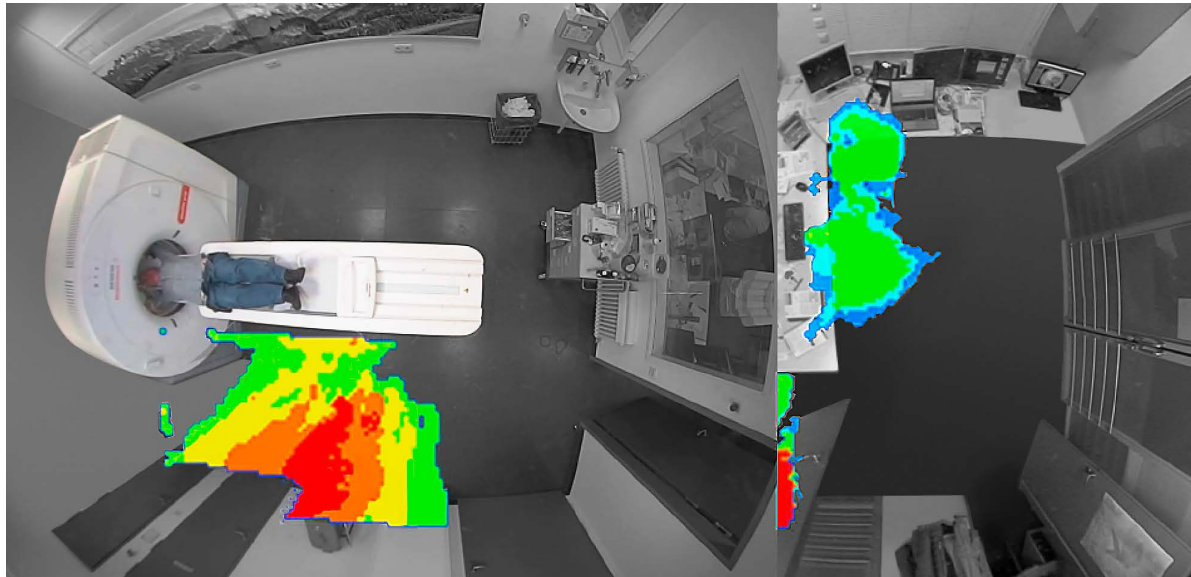
## Injector arm

The unique gantry-mounted injector arm of SOMATOM go.Top lets you position the injector where you need it, when you need it. While a traditional injector cart is often in the way, the injector arm makes for a neat and organized working environment and still lets you flexibly arrange the injector.

Standard workflow



Mobile workflow



## New workplace design

Thanks to gantry-integrated computers, SOMATOM go.Top gives you complete flexibility over where you position the workstation. Depending on your needs and infrastructure, you can set it up in the same room, outside the scan room, or in a separate control room. By using the unique niche concept, for example, you can position the console in the same room as the scanner while keeping staff perfectly safe from radiation. Thus, operators can stay with their patients longer and solve any positioning problems quickly.

The image on top visualizes a standard workflow with the operator spending most of the time in the control room. The unique new workflows of SOMATOM go.Top, shown below, are based on tablet-operation and automation. They allow users to spend most of the time with the patient – which results in higher efficiency, higher patient comfort, and less motion artifacts.

*Preliminary results from a study with the SOMATOM go. platform. Courtesy of Erlangen University Hospital, Erlangen, Germany.*



# Automate your workflow with GO technologies

Another important factor contributing to high performance, independent of the operator's level of experience, is workflow automation. SOMATOM go.Top features a holistic set of intuitive solutions that addresses your workflow not only at the scanner but also beyond. These features are now available for the first time in both routine scanning and advanced clinical fields. By reducing repetitive workflow steps, GO technologies help standardize and simplify all departmental processes – from patient setup to image distribution, archiving, and reading. You can therefore work more efficiently and focus on your patients – two key factors for running a successful business.



## Scan&GO

This advanced tablet app allows you to control scans remotely. You can choose whether to operate the scanner at the gantry or from outside the room to benefit from faster patient preparation and positioning. You can also check the images quickly after the scan, as wireless connectivity sends the results to the tablet almost immediately. Scan&GO brings an entirely new level of flexibility to your processes. Patients are also likely to feel more comfortable, since you can be with them for longer.



## Check&GO

This intelligent algorithm flags up problems with coverage or contrast distribution as they occur. Correct issues on the go, prevent subsequent errors in multiphase scans, and avoid archiving suboptimal images. The FAST ROI feature automatically identifies regions of interest and monitors HU for the aorta and pulmonary trunk in bolus tracking examinations. Check&GO's automated support means that users of all levels of experience can produce high-quality images.



## Recon&GO

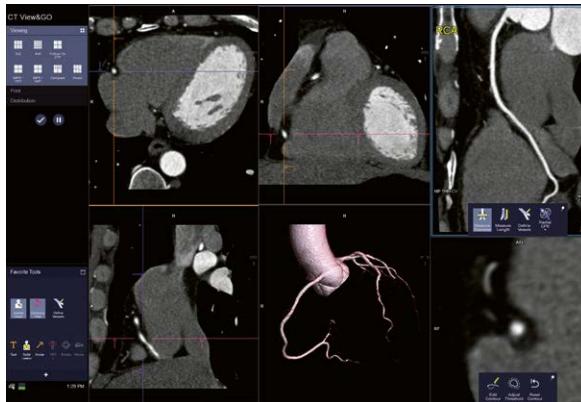
Recon&GO performs zero-click postprocessing, making it part of the standard reconstruction tasks. This ready-to-read technology saves time and cuts down on workflow steps. Recon&GO delivers high-quality results irrespective of the operator or clinical area, and allows users to spend more time with the patient. Achieve fast, standardized, and reproducible results with this automated postprocessing and reconstruction solution.





*“The mobile workflow:  
More than ever, the patient is in the  
center of the whole examination.”*

**Carla Susana Ribeiro Pinto**  
CT radiographer at Centro Hospitalar de São João, Porto, Portugal



## CT View&GO

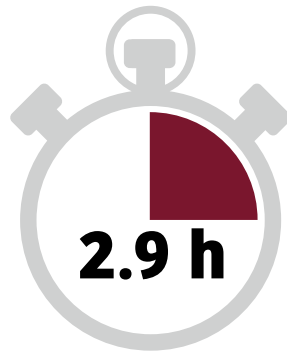
As an all-in-one, cross-specialty viewing solution, CT View&GO provides a large variety of clinical applications and tools directly at the scanner – for smooth reading in just one workflow. Thanks to a customizable user interface, you can tailor the system to your needs. The automatic distribution and filming of images and results enhances departmental communication and integration. At the same time, advanced CAD algorithms and applications boost sensitivity and specificity in diagnoses. For additional flexibility, CT View&GO is available as an independent console with the same tools known from the scanner.

## FAST, CARE, and GO

Proven for years, fully assisting scanner technologies (FAST) bring speed and efficiency to daily CT routines. They make complex procedures more intuitive and enhance consistency through standardized workflows. Combined applications to reduce exposure (CARE) optimize dose level and image quality, and offer patient-friendly scans with parameters adapted to the individual anatomy. FAST, CARE, and GO help you deliver better results, make your scanning safer, and devote more time to taking care of your patients.

## Adapting to the market is key

In the changing and demanding healthcare market, it is necessary to serve a broader range of clinical fields. Patient variability poses challenges in this context. With this in mind, staying ahead in a competitive environment not only requires outstanding quality in your imaging results but also the ability to adapt to the market's – and the patients' – varying needs.



### Time-to-diagnosis of acute chest pain

Cardiac CT is a complex workflow. In a 2013 multicenter study, the average time-to-diagnosis for the assessment of acute chest pain in the emergency room was 2.9 hours.<sup>8</sup>

**Think about how many workflow steps need to happen within this short time frame.**

# Go for the full clinical spectrum with patient-centric technologies



**SOMATOM go.Top enables you to confidently offer specialized CT procedures, including Dual Energy and cardiac CT for additional diagnostic information. With patient-centric technology and workflows to optimally adapt to each type of patient, all operators can turn challenging fields into routine – and serve the full clinical spectrum.**



## Stand out in these fields



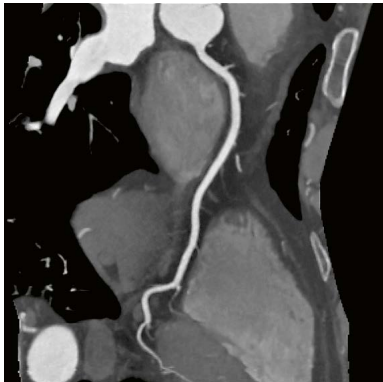
### **Speed and standardi- zation in acute care**

Help your operators perform at 100 percent, regardless of experience. Our workflows and technology allow you to move fast and make confident, patient-focused decisions when every second counts.



### **Routine-ready Dual Energy**

Increase your diagnostic confidence for all types of patients with TwinBeam Dual Energy. By acquiring low- and high-kV datasets in a single scan, it visualizes information that would otherwise go unseen – with no dose penalty.



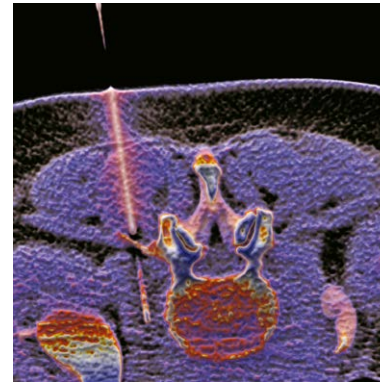
### **Clinical consistency in cardiac CT**

Stay ahead of the competition with optimized preparation, fast scanning, and standardized results in every cardiac case. Seamless integration of GO technologies allows you to devote more time to your patient.



### **Sensitive scanning in pediatrics**

Put the wellbeing of your littlest patients – and their parents – first. Use the mobile workflow to stay close to the child as you prepare the scan, and minimize radiation exposure with dedicated pediatric solutions.



### **Intuitive functions in CT-guided intervention**

Our tablet-based solution Guide&GO is the latest innovation in CT-guided intervention. Intuitive functions help you accurately navigate and target, while advanced dose features protect both you and your patients.



### **Patient-centric technol- ogies in routine CT**

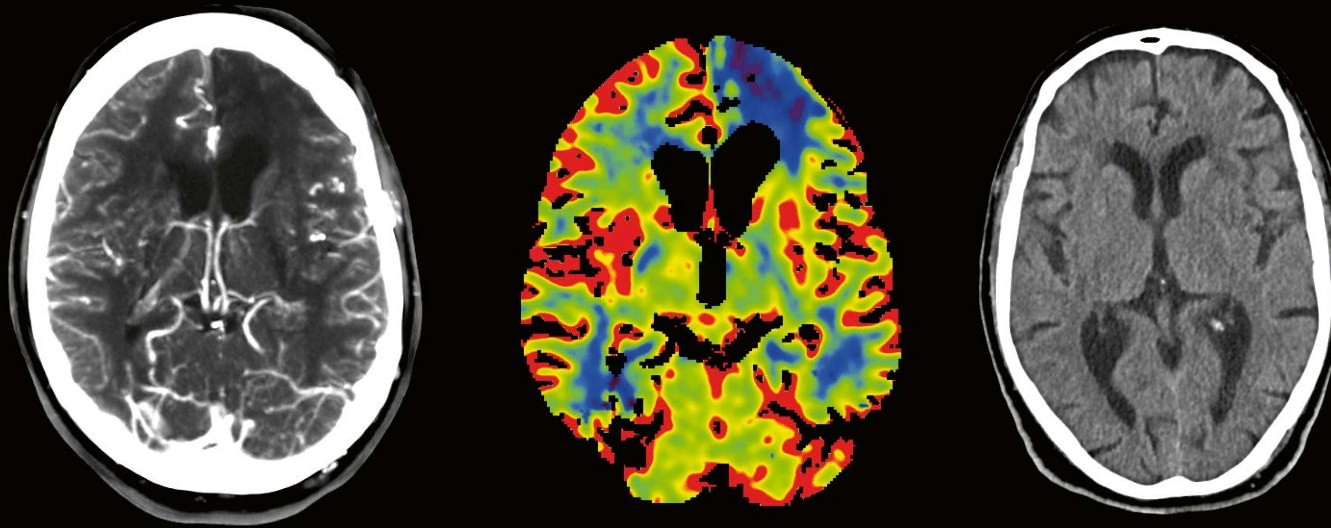
Deliver consistent, reliable results in routine CT. Guided workflows and cutting-edge technologies allow you to optimally adapt to each patient in routine oncology, vascular, orthopedic, and neuro imaging.



## Speed and standardization in acute care

Emergency situations put you and your staff under pressure. Every operator in your CT department has to perform at 100 percent, regardless of his experience. What is more, you should be able to handle every patient, from children to bariatric cases. To stand out in acute care, you need efficient workflows and patient-centric technologies that allow you to move fast and make confident decisions when every second counts.

SOMATOM go.Top accelerates the entire CT procedure, from patient preparation to image reading. Our trendsetting mobile workflow keeps you close to the patient while you prepare the examination using Scan&GO. The tablet also gives you the flexibility to prepare the scan wherever most appropriate – which is helpful when faced with the crowded environments typical in acute care settings. Since you can do everything on the tablet (including previewing the images and triggering reconstructions), you can navigate the tasks faster and devote more time and attention to your patient.



Courtesy of CMIV US Linköping, Schweden

#### Excellent stroke assessment

thanks to high-end detector technologies in combination with the comprehensive CT View&GO perfusion workflow

## Standardized stroke assessment

One in six people will suffer a stroke at some point in their life.<sup>9</sup> Time is of the essence here: Reducing door-to-needle times by 15 minutes can extend patient survival chances by an average of 5 percent.<sup>10</sup> We can help you successfully cover more of the clinical spectrum with advanced tools for speed and precision in challenging stroke cases.

With its standardized workflow, SOMATOM go.Top provides fast, accurate information about the three key factors in stroke diagnosis: bleeding, infarct size, and clot location. The low electronic noise of the Stellar detector helps you rule out bleeding with excellent gray/white matter differentiation. When it comes to dynamic imaging, Neuro Perfusion offers both a

guided and an automated workflow at the scanner console, and automatically calculates perfusion maps and tissue at risk. TwinBeam Dual Energy removes bone with a single contrast-enhanced scan for faster clot location and less dose. And just as they do in the other clinical areas, GO technologies standardize results and contrast distribution, and overcome the challenge of patients who may be unable to cooperate.

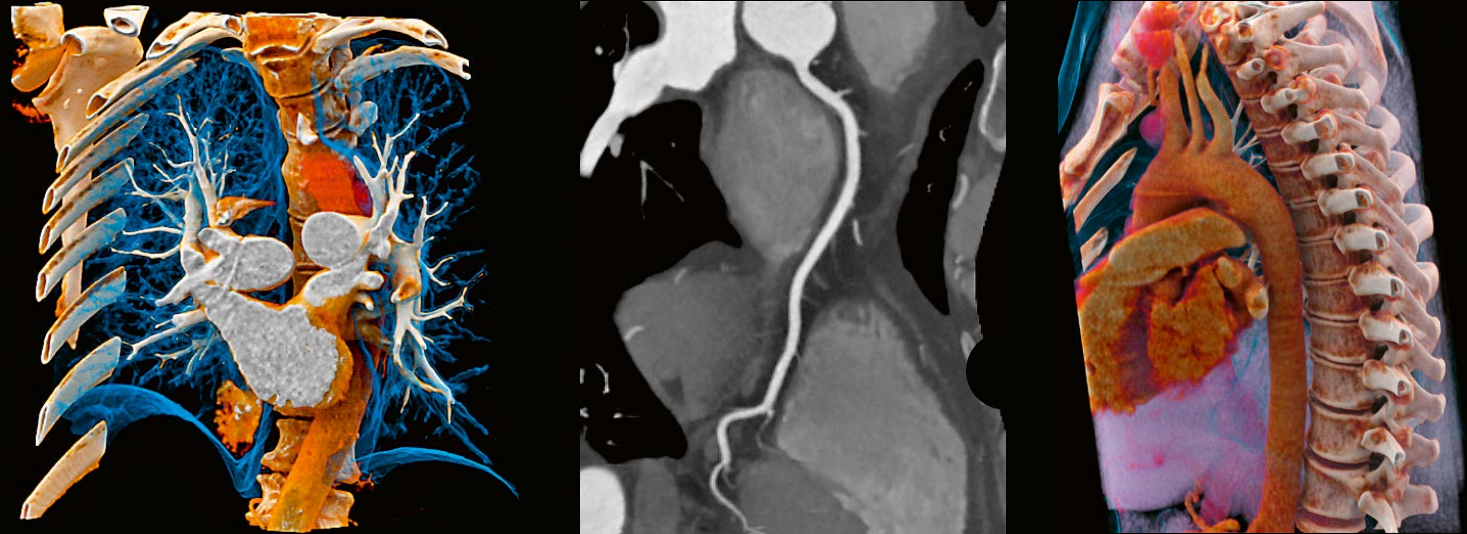


## Stellar detector

The Stellar detector features fully integrated components for lower image noise in every scan, while advanced iterative reconstruction from SAFIRE<sup>20</sup> delivers superb image quality at very low doses. Combined, they produce excellent and homogenous images – even in complex areas such as the base of the skull, which is especially useful in stroke assessment.

The detector also improves image quality with a new geometry and increased number of 840 channels in the scan plane. The high channel density is a major benefit for neuro imaging. It achieves excellent gray/white matter differentiation that helps you identify subtle changes in Hounsfield units (HU).

**Fast and standardized acute care imaging** through guided and automated GO technologies



*Courtesy of Erlangen University Hospital, Erlangen, Germany<sup>11</sup>*

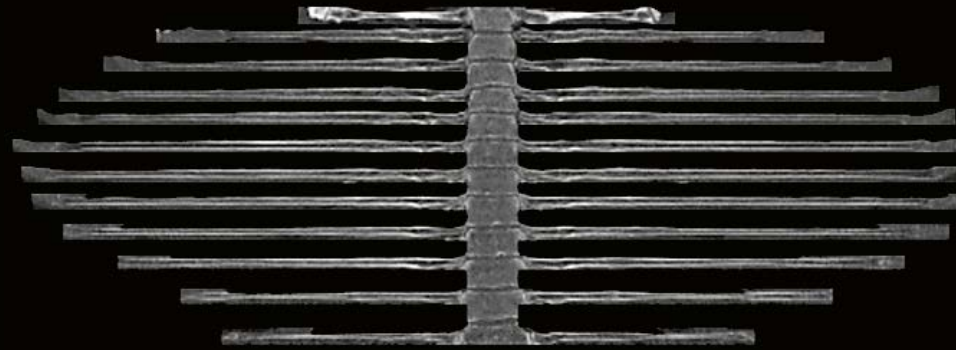
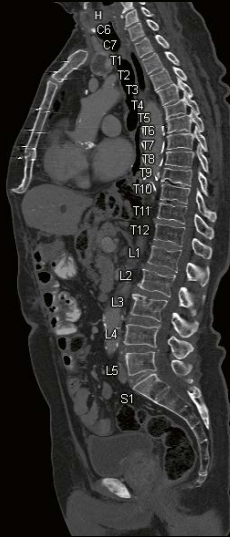
## Rapid chest pain assessment

When a patient presents with acute chest pain, you might be dealing with coronary artery disease, an aneurysm, or a pulmonary embolism – to name just the three most common reasons for chest pain. SOMATOM go.Top gives you everything you need to reliably establish the cause in the smallest timeframe possible.

Guided, automated workflows from GO technologies play a crucial role here. Scan&GO simplifies patient preparation, electrode placement, and ECG monitoring. Check&GO helps you optimize coverage and achieve the right contrast distribution and timing.

For the diagnosis itself, Recon&GO generates radial and cross-sectional CPRs of the main arteries. These allow you to rapidly detect coronary artery disease, aneurysms, or dissections of the central vessels. TwinBeam Dual Energy Lung Analysis provides color-coded visualizations of the endoluminal thrombus and its associated lung perfusion impairment – so even inexperienced users can quickly and confidently detect or rule out acute pulmonary embolism.





### Fast and powerful trauma assessment

thanks to Recon&GO with automated labelling and inline rib unfolding

*Courtesy of Erlangen University Hospital, Erlangen, Germany*

## Efficient trauma assessment

Trauma is the leading cause of death among people under the age of 44.<sup>12</sup> If you want to cover the full clinical spectrum in CT imaging, your department needs to be able to handle trauma cases. This calls for powerful technology, standardized results, and highly efficient workflows.

We designed SOMATOM go.Top with trauma in mind, so that you can produce reliable images when every second counts. Our Athlon® tube, for instance, has the power (it delivers the highest tube current available in this class of scanner) and advanced cooling necessary to perform whole-body scans with no delays or stoppages. These scans are proven to increase the probability of survival in polytrauma patients.<sup>13</sup> They allow you to detect multiple injuries at once, and to plan optimal, personalized treatment for each patient.

For consistent results, FAST Planning automatically sets scan and reconstruction ranges, while Check&GO alerts you to issues with coverage or contrast distribution during the scan. Recon&GO accelerates reading with automated rib unfolding, spine labeling, and anatomically corrected orientations. And since metal can often be an issue in trauma cases, our iMAR<sup>14</sup> algorithm is a key advantage for this clinical field. By reducing metal artifacts, it improves visualization of soft tissue around metal – and the effect can even be further enhanced by combining iMAR with TwinBeam Dual Energy acquisition.



**Dual Energy acquisition provides advanced diagnostic image quality** through highlighting, characterization and quantification of material

**TBDE CT angiography**

- Cinematic VRT<sup>21</sup>
- Tube voltage: AuSn 120kV
- CTDIvol: 6.2mGy

## Routine-ready Dual Energy

The more your CT images show you, the better your patient outcomes will be – and with the reimbursement trend moving away from fee-for-service and toward quality of care,<sup>15</sup> outcomes are now more important than ever. If you can offer dual-energy scanning, your chances of being blindsided reduce significantly.

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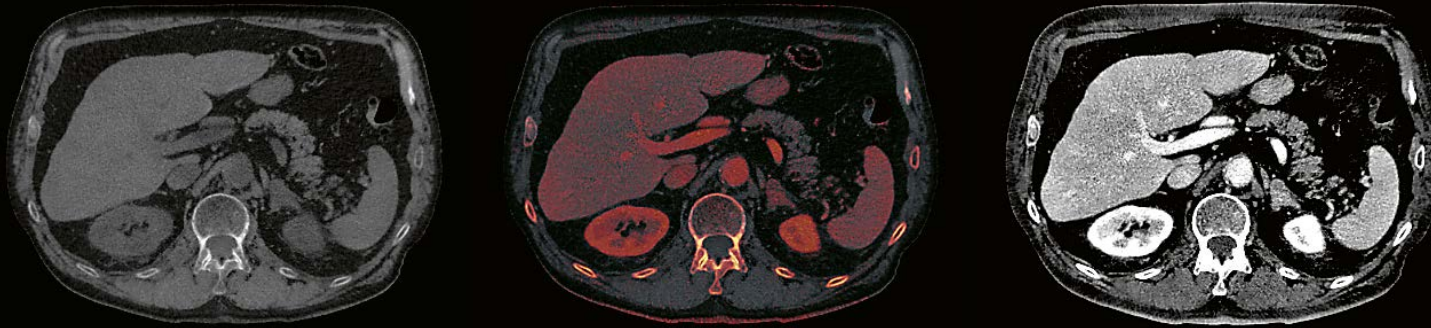
### TwinBeam Dual Energy

SOMATOM go.Top allows you to see more. Its TwinBeam Dual Energy technology acquires low- and high-kV datasets in a single scan. This produces rich diagnostic information that a conventional single source scan cannot deliver. By allowing you to characterize, highlight, and quantify different materials, TwinBeam Dual Energy gives you greater diagnostic confidence with virtually all patients. It does this without dose penalty, and even allows you to further minimize radiation with any of our existing dose-reduction technologies.



Courtesy of Erlangen University Hospital, Erlangen, Germany

**Robust and routine-ready  
diagnosis in oncological imaging**  
with zero-click Recon&GO  
TwinBeam Dual Energy



*Courtesy of Erlangen University Hospital, Erlangen, Germany*

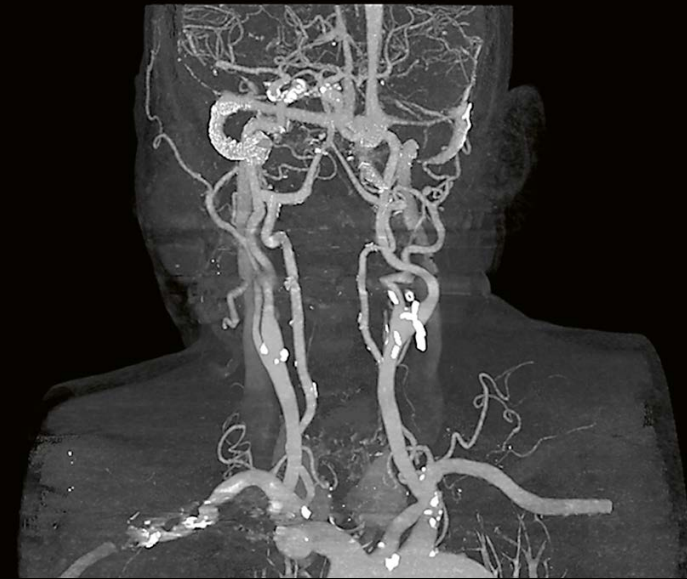
## Robust oncology diagnosis

TwinBeam Dual Energy optimizes clinical pathways in oncology. Its advanced capabilities improve diagnostic confidence and quality, helping you detect tumors faster and more reliably than ever before.

Dual Energy workflows in CT are usually considered complicated and cumbersome. Recon&GO allows you to bring dual-energy imaging into clinical routine. The technology generates the required Dual Energy post-processing directly at the acquisition workplace and sends the results to the PACS. As part of an advanced, straightforward workflow, Recon&GO equips you with the enhanced diagnostic information that helps you see more and stand out from the crowd.

Virtual noncontrast images produced from a single contrast-enhanced scan help you locate and characterize lesions with less time and dose. Monoenergetic imaging delivers a better contrast-to-noise ratio that helps you see lesions more clearly and identify diffuse tumors with less contrast media. With Iodine Maps, you can quantify iodine uptake in tissues and lesions to assess malignancy and monitor treatment progress, which potentially reduces follow-up examinations.

**Excellent visualization of vascular structures**  
with TwinBeam Dual Energy technology and  
zero-click Recon&GO bone removal



*Courtesy of Erlangen University Hospital,  
Erlangen, Germany*

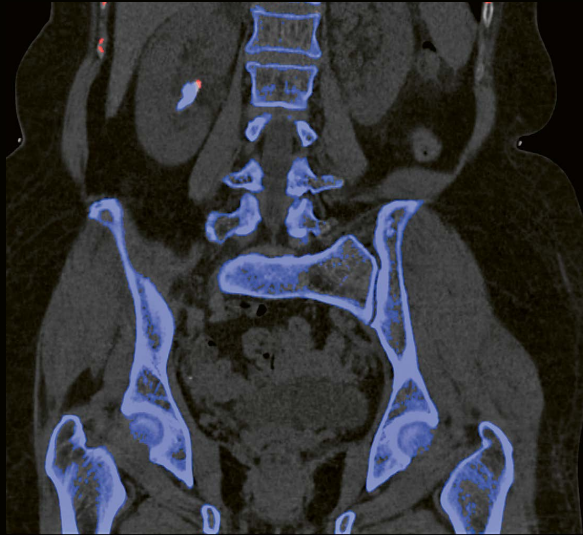
syngo.CT DE Hardplaque Display performed with syngo.via

## Excellent bone removal in vascular imaging

TwinBeam Dual Energy Direct Angio overcomes the limitations of conventional bone removal. We can help you see more in CT angiography for greater confidence in assessing vascular disease.

Direct Angio accurately highlights vessel structures on CTA datasets and suppresses bone structures for a bone-free view. It reliably isolates even complex vasculature, such as in the base of the skull. By successfully eliminating most bones from supra-aortic CTA datasets<sup>16</sup> and improving vessel delineation,<sup>17</sup> Direct Angio reduces your reading time for faster diagnoses and more efficient workflows.

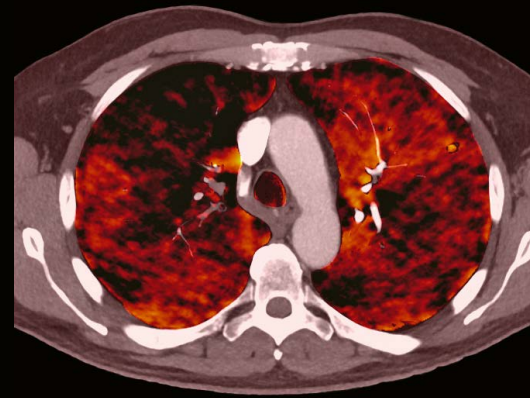
Direct Angio also simplifies stenosis assessments by color-coding and removing calcifications from dual energy images. Since it can differentiate hard plaques from contrast agent, you get to see the true vessel lumen with no interference from hard plaques. In cerebrovascular cases, Direct Angio saves dose and time by eliminating bone and calcification with a single contrast-enhanced scan.



*syngo*.CT DE Calculi Characterization performed with *syngo*.via.



*syngo*.CT DE Gout performed with *syngo*.via.



*syngo*.CT DE Lung Analysis performed with *syngo*.via.

Advanced diagnostic information  
with TwinBeam Dual Energy  
technology

## Kidney stones

TwinBeam Dual Energy Calculi Characterization detects the composition and size of kidney stones, so you can make more confident diagnoses. Find out whether a stone is uric acid or calcium oxalate, and initiate the best treatment for each individual patient.

## Gout

TwinBeam Dual Energy Gout allows you to visualize uric acid crystals in peripheral extremities – and in areas that conventional aspiration cannot reach, such as tendons and ligaments. It automatically color-codes the crystals, so you get a clear view of the deposits. The process is non-invasive, specific, and fast.

## Pulmonary embolism

TwinBeam Dual Energy Lung Analysis helps you detect pulmonary embolisms with ease and confidence. With our advanced solution, you can assess perfusion defects and affected vessels quickly and easily. Color-coded visualizations give you the information you need at a glance, allowing even inexperienced users to rule out perfusion defects when no expert is on site.



**Easy acquisition and consistently crisp visualization**  
through an intuitive mobile and guided workflow with automated Recon&GO results

**Coronary CTA**

- MIP, curved MPR (CPR) and Cinematic VRT<sup>10</sup>
- Tube voltage: 100 kV
- CTDIvol: 10.3 mGy

*Courtesy of Erlangen University Hospital, Erlangen, Germany*

## Stand out in cardiac CT

Cardiovascular disease accounts for roughly a third of all deaths worldwide,<sup>18</sup> so the need for cardiac CT imaging is obviously high. However, the examinations are complex and particularly time-consuming for departments that handle multiple cardiac scans every day. Standardization can bring immense benefits by helping you produce consistent, high-quality results in every cardiac case.

### Cardiac CT made easy

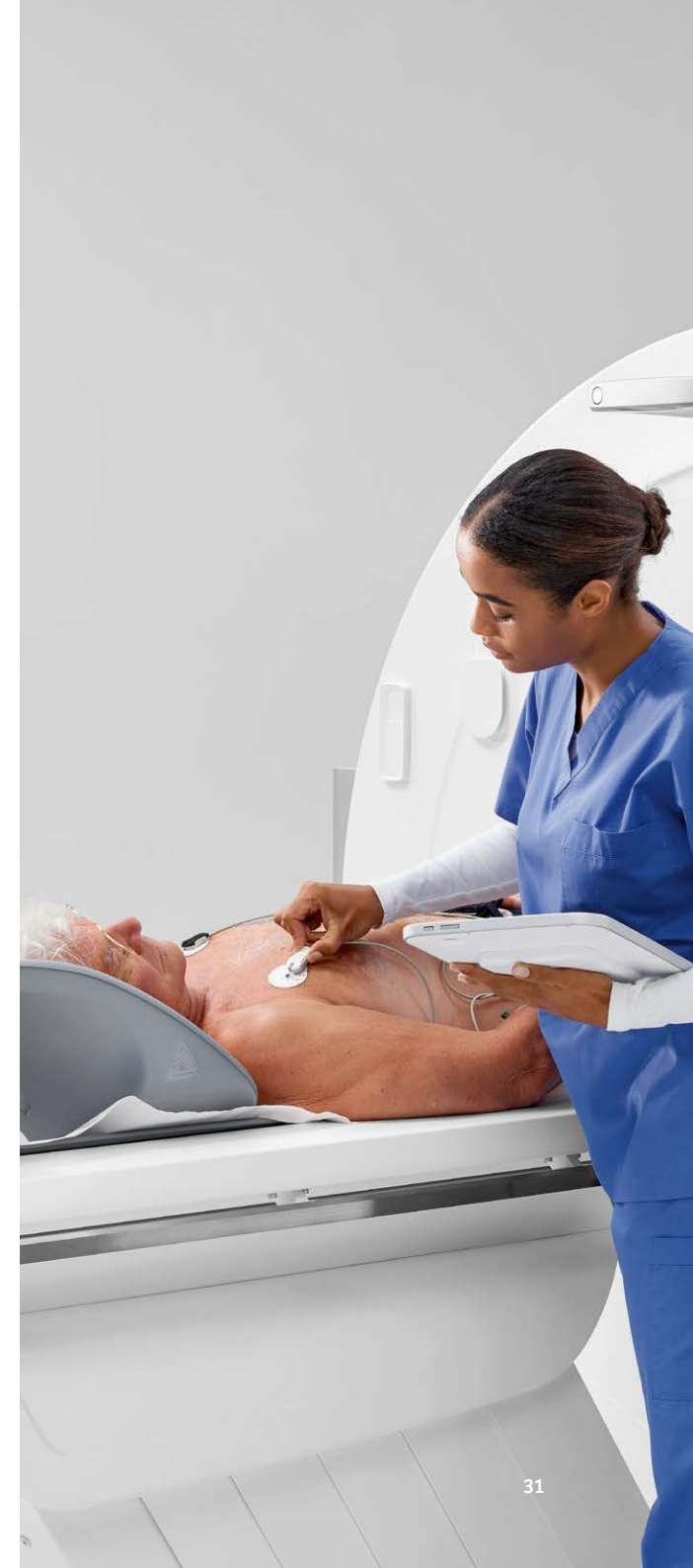
SOMATOM go.Top offers standardized workflows, fast scanning, and automated postprocessing. Seamlessly integrated GO technologies take care of multiple examination steps, so you can focus on your patient.

Before the scan, Scan&GO saves you time and lays the groundwork for consistent results. Use the tablet to prepare everything at the patient's side, and consult it for guidance on optimal electrode positioning and a high-quality ECG signal.

### Surpass your competition in cardiac imaging

During the scan, the Stellar detector enables faster imaging for shorter breath-hold times. This improves patient comfort and image quality, and helps you increase your throughput. High Power 70 delivers the highest tube current of its class, enabling improved coronary vessel enhancement. At the same time, Tin Filter technology makes possible low dose for cardiac scanning, traditionally a high-dose examination. Check&GO monitors coverage and contrast in real time, allowing you to correct problems as you work and thus avoid repeat scans. Quality-control images are sent wirelessly to the tablet, so you can review them directly at the scanner.

After the scan, Recon&GO produces ready-to-read results for instant evaluation. Zero-click CPR of the main coronaries and standard views of the cardiac planes (as recommended in the SCCT guidelines<sup>19</sup>) help you quickly rule out coronary artery disease. View&GO supports you in challenging cases where you need to manually interact with the images. Its intuitive and customizable tools enable smooth, straightforward reading.





## **Sensitive scanning in pediatrics**

For young patients – and their parents – pediatric CT can be daunting. Children are often anxious about entering the scanner, and parents worry about radiation levels. An easy-to-use system that calms patients, reduces dose, and achieves high image quality will enhance parent and child wellbeing, and boost your reputation.

### **Stay close to your little patients**

With its mobile workflow, SOMATOM go.Top offers easy pediatric CT scanning that puts patient and parent comfort first. Scan&GO enables protocol preparation directly at the scanner, so you and the parents can stay with the child for longer. During the scan, the Halo moodlight entertains patients while you keep an eye on them with the gantry-integrated camera. These solutions also benefit image quality, since relaxed children create fewer motion artifacts.



Minimized dose levels in pediatric imaging  
enabled by CARE Child

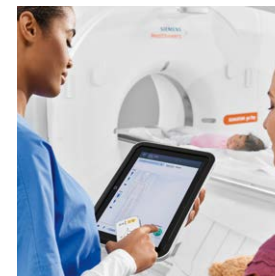


Courtesy of Hospitalar de Soa Jao, Porto

## Minimize dose levels for children

Minimizing dose is key in pediatrics, which is why SOMATOM go.Top is equipped with targeted solutions for reducing dose in children: CARE kV, for instance, automatically selects the lowest kV for your patient, while CARE Child offers dedicated 70 kV protocols. Our 10 kV Steps feature personalizes dose, and CARE Dose4D™ tailors mAs levels to the size and shape of the patient. Additional advanced technologies – Tin Filter, Check&GO, and SAFIRE<sup>20</sup> iterative reconstruction – help you scan accurately at low doses and achieve excellent detail visualization for better patient care.

Another tool that enhances image quality in challenging pediatric cases is Check&GO. By automatically checking for proper coverage and contrast distribution, it gives you the consistent results you need for confident diagnoses. After the scan, Recon&GO produces automated, standardized reconstructions that allow you to devote more time to your patient.



## CARE kV, 10 kV Steps, CARE Child

CARE kV automatically tailors tube voltage to each patient and clinical indication. With optimal kV levels in every case, CARE kV keeps dose low, making it ideal for pediatric imaging. It further simplifies the process by aligning the tube current with the selected kV.

Our unique 10 kV Steps feature also helps you tailor voltage to your patient. It can adjust the level at intervals of 10 kV for less dose and high contrast resolution.

CARE Child offers targeted solutions for minimizing radiation exposure while maintaining diagnostic image quality. Pediatric protocols automatically set a low tube voltage – usually 70 kV, as SOMATOM go.Top has the highest tube current in its class – while CARE Dose4D™ optimizes dose distribution and offers special modulation curves.



## Guide&GO: intuitive functions in CT-guided intervention

CT-guided interventions play a major role in healthcare. In the U.S. alone, almost one in two sites performed at least three such procedures every day in 2016.<sup>5</sup> Dedicated technology that can simplify workflows and maximize safety will help you optimally handle these procedures and patients.

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### Tin Filter

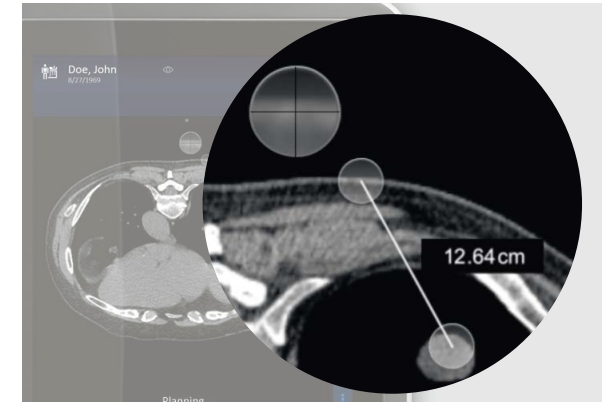
Interventional procedures usually require multiple scans. Tin Filter reduces dose in each of them. At the same time, it enhances contrast between soft tissue and air. This results in significantly less accumulated dose for both patients and interventionists. By reducing beam hardening artifacts, Tin Filter is an important improvement also for other CT-guided intervention techniques, such as spinal injections.

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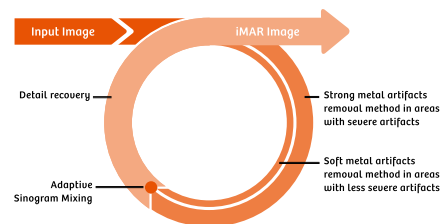


Magnifying-glass functionality



## iMAR

Artifacts due to metal implants or to the tool used in the interventional procedure (e.g., RF ablation) often hamper image quality. In these cases, accurate targeting can be impossible. iMAR<sup>14</sup>, which is smoothly integrated into the tablet workflow, reduces these artifacts – and improves confidence even in areas adjacent to metal implants.



## Simple and familiar tablet operation

SOMATOM go.Top features Guide&GO, the first tablet-based solution for CT-guided interventions. Built on the new mobile workflow, it is both familiar and easy to use. You can control the entire intervention with the tablet and the remote control – no need for ceiling-mounted displays or joysticks – and the tablet cover means you can use it even in sterile environments.

Needle guidance is supported by the highly intuitive image manipulation functions we know from our smartphones, like zoom or pan. You can also save table positions for simple patient positioning and accelerate workflows with an auto-repeat function for sequential scans.

Additionally, Guide&GO voice control eases the tablet operation with dedicated vocal commands and keeps your hands free.

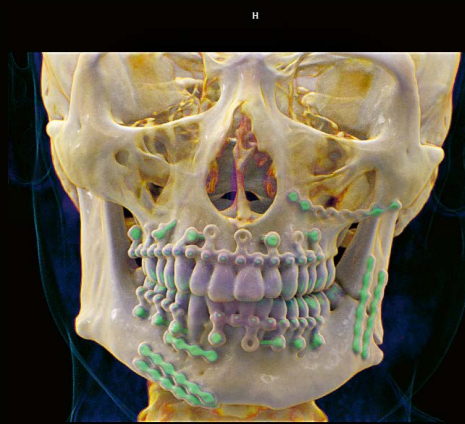
## Safe and accurate at low dose

In terms of safety, Tin Filter technology reduces dose to protect the patient and the interventionist.

For precision in your work, intuitive touchscreen functions at your fingertips help you quickly find the right position for the needle and measure relevant distances with the support of a magnifying glass functionality. Fast toggling between predefined image windowing or between the i-sequence and the spiral planning scan makes it easy to cross-check the anatomy. Laser crosshairs offer additional accuracy and confidence. Finally, the flexible goose-neck tablet holder can be adjusted to your individual needs for a safe and comfortable working environment.

**Excellent image quality**  
thanks to innovative high-quality  
imaging technologies

## Patient-centric technologies in routine CT



*Courtesy of Erlangen University Hospital, Erlangen, Germany<sup>11</sup>*

Routine clinical fields are a core part of the CT spectrum. It is essential for CT facilities to have fast and efficient routine processes that deliver consistency in these areas. With FAST Topo, the topogram scan is now always performed with ultra-fast 20 cm/s. Our guided workflows and cutting-edge technologies allow you to stand out by optimally adapting routine imaging to each and every patient.

With consistent results and new benchmarks in low-dose imaging, SOMATOM go.Top enhances outcomes in oncology and opens up new potential for preventive care. In vascular imaging, you and your patients can

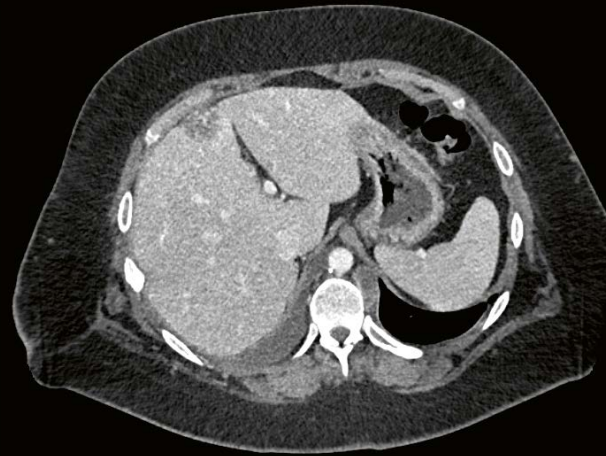
benefit from low-kV technologies that help reduce dose even further while enhancing contrast for outstanding image quality. Our Stellar detector, known for its reduced electronic noise and excellent low-contrast differentiation, allows high-resolution orthopedic scanning at X-ray dose levels. In addition, its gray/white matter differentiation improves patient outcomes in routine neuro examinations.



### High spatial resolution

SOMATOM go.Top features continuous 0.6-mm collimation across the full width of the Stellar detector. It achieves uniform scanning over longer ranges at high spatial resolution and speed. Also, the detector always provides the thin-slice data necessary for flexibility in postprocessing.

The Stellar detector is equipped with an advanced 3D antiscatter grid for precision imaging. This high-end technology is carefully manufactured to achieve excellent grid homogeneity. It minimizes scattered radiation and cross-talk, so you can use less radiation to produce outstanding, high-resolution images with minimal noise.



Courtesy of Erlangen University Hospital, Erlangen, Germany

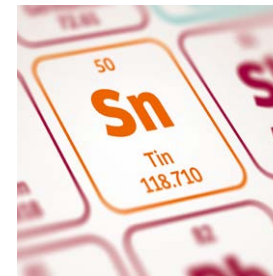
**Fast and consistent low-dose imaging in oncology**  
due to powerful low-kV imaging or Tin Filter technology

## Fast, reliable scanning in oncology

Oncology is by far the most common indication for CT exams today. Oncology patients typically undergo multiple CT scans during their lifetime – for staging, therapy planning, and follow-up. Low doses and low-contrast resolution are therefore essential for optimal patient care.

SOMATOM go.Top delivers low-dose scanning and consistent, reliable results in oncology. This is possible thanks to advanced solutions such as TwinBeam Dual Energy. The sophisticated acquisition technology helps you detect lesions more confidently and reduce contrast media, dose, and follow-up examinations.

Another low-dose technology, Tin Filter, paves the way for lung cancer screening and CT colonography procedures – and since every examination benefits from sub-millimeter collimation, you can scan quickly, reduce motion artifacts, and achieve supersharp images. Finally, CT View&GO equips you with dedicated second-reader tools to identify and segment lung nodules, and with an endoscopic view for support during virtual colonoscopies.



## Tin Filter

Inherited from high-end dual-source scanners, Tin Filter technology cuts out lower energies to reduce dose and optimize contrast between soft tissue and air. By also performing the topogram scan with Tin Filter, the overall CT dose can be reduced even further.

Clinical experience also shows that Tin Filter technology reduces beam-hardening artifacts and improves image quality in bony structures, making it extremely useful in orthopedic examinations.



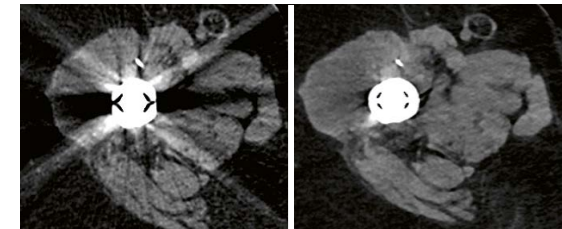
Excellent orthopedic imaging through powerful metal artifact reduction

CT pelvic with outstanding metal artifact reduction

- Cinematic VRT<sup>11</sup>
- Tube voltage: 130 kV
- CTDIvol: 17,4 mGy

## iMAR

iMAR<sup>14</sup> (iterative metal artifact reduction) reduces metal artifacts for better image quality with no increase in dose. The high-end algorithm can handle a wide variety of metal implants for smoother, more efficient workflows. It even allows you to address more challenging cases, such as those involving dental fillings, extremity implants, coils, and pacemakers. Diagnostic value can be further strengthened with the combination of iMAR and SAFIRE iterative reconstruction to further reduce dose. A strong imaging combination, which is smoothly integrated into your daily orthopedic workflow.



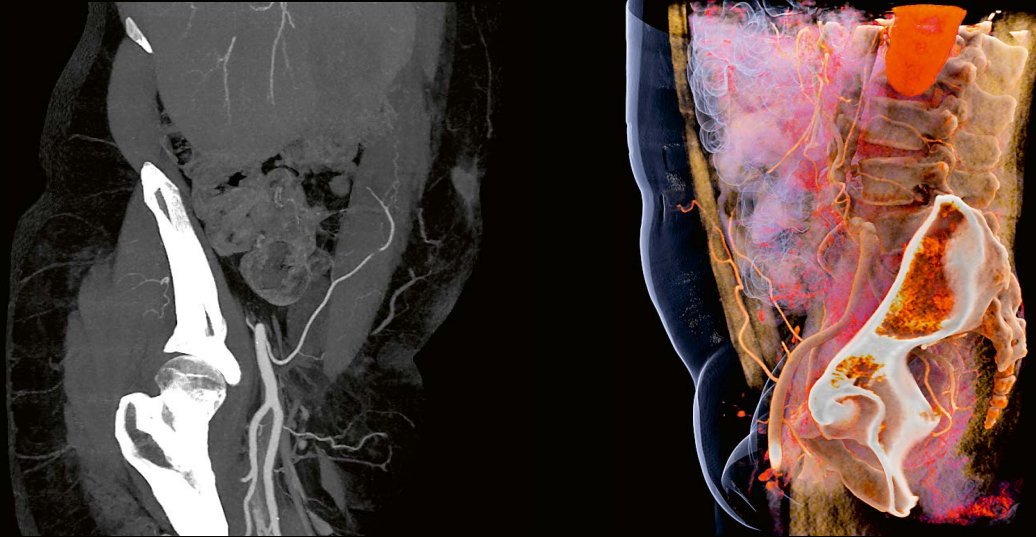
## Precision orthopedic imaging

Orthopedic imaging demands precise low-dose scanning, long ranges, and high spatial resolution. For optimal outcomes, you also need technology that can handle metal artifacts and thus maintain image quality.

SOMATOM go.Top delivers high-quality scanning for all types of patients at X-ray dose levels. Tin Filter technology improves results at the interface of soft tissue and bone, while thin slices enhance accuracy and spatial resolution for visualizing small bony structures and fractures. Recon&GO reduces post-processing steps with zero-click, anatomically corrected orientations for reliable diagnosis. The combination of TwinBeam Dual Energy acquisition and the iMAR<sup>14</sup> algorithm achieves excellent metal artifact reduction without increasing dose.

Courtesy of Erlangen University Hospital, Erlangen, Germany

**Excellent contrast-to-noise ratio**  
through powerful low-kV and Stellar detector  
imaging, facilitated with GO technologies



Courtesy of Erlangen University Hospital, Erlangen, Germany<sup>11</sup>

## Simple, sharp vascular imaging

CT angiography for vascular imaging is now routine in many institutions. High-quality angiography exams need good iodine enhancement, sub-millimeter slices, and precise timing. SOMATOM go.Top equips you with the advanced technology you need to handle each individual patient and differentiate yourself in this important field.

By allowing you to scan at 70 kV, High Power 70 delivers low dose and the high iodine contrast that is key to vascular imaging. For proper contrast distribution, you can rely on support from FAST ROI and Check&GO, while thin-slice imaging brings you optimal resolution and fast scan speed every time.

Our sophisticated TwinBeam Dual Energy acquisition technology helps you achieve excellent bone removal – even in complex vasculature such as the supra-aortic arteries – and distinguish clearly between calcified plaques and iodine contrast. Once you are finished with the scan, Recon&GO saves you time with zero-click postprocessing and inline CPR.



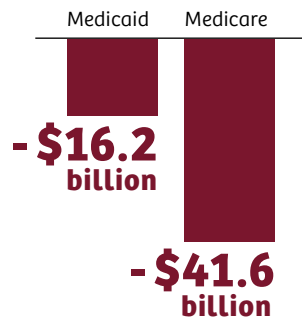
## High Power 70

High Power 70 allows you to scan at 70 kV with up to 825 mA. The Athlon™ tube is responsible for this impressive value and is the reason why SOMATOM go.Top offers the highest tube current in its class. Scanning at such a low voltage achieves better iodine contrast for sharper images, even in small distal vessels. The improved contrast also enables considerable reductions in the amount of contrast media. By lowering dose and contrast, you can include more patients, deliver better patient care, and reduce examination costs.

High Power 70 is based on the mass attenuation coefficient. For lower photon energies, the mass attenuation coefficient of iodine increases, whereas soft tissue is less energy-dependent. This means that the iodine-to-soft-tissue contrast in the CT image will increase with low-kV imaging and lower average photon energy. This increase is extremely beneficial for contrast-enhanced studies.

## Thinking business

Financial considerations are an important driver in today's CT business. Whether it is about expanding your portfolio or reducing overhead expenditure, a new CT scanner should help you lower running costs and increase revenue.



### Underpayment by Medicaid and Medicare

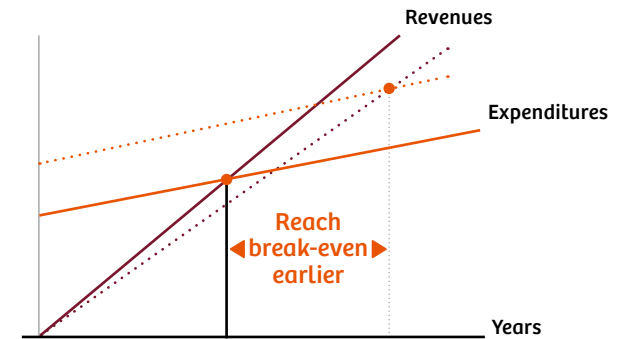
Comparing cost and reimbursement received in 2015, U.S. hospitals faced a combined USD 57.8 billion in underpayment,<sup>2</sup> forcing healthcare providers to find ways to keep costs as low as possible.

### What can be done to still ensure high-quality services?



# Go for business growth with an all-in-one solution

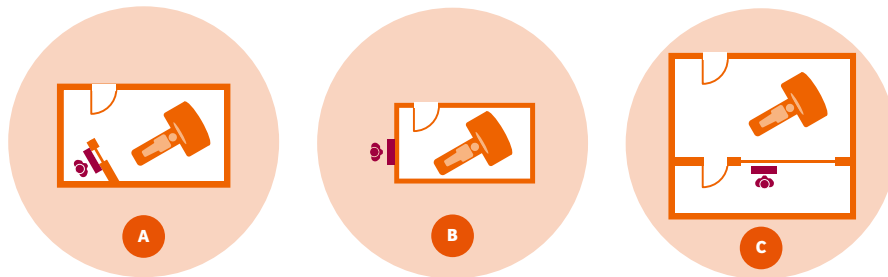
SOMATOM go.Top features a flexible all-in-one solution that covers everything you need around the scanner. For optimal balance between cost position and your growing needs.



..... Without SOMATOM go.Top — With SOMATOM go.Top

## A boost for your business

Setting yourself apart with a wide variety of clinical cases is a chance to give your CT business a new push forward. Our guided workflows in Dual Energy, for instance, have the potential to significantly improve your reputation. Additional revenues can also be generated through higher throughput – based on quicker positioning, simplified workflows, and the high-performance Athlon® tube. Add to that lower installation expenditure and running costs, and you'll see why we say that the SOMATOM go. platform was built to make success your daily business.



## Low installation costs

A key aim of the overall SOMATOM go. platform was to minimize your installation costs. Two related elements that enable this are the new workplace design and the flexible room concept. Thanks to gantry-integrated computers, you no longer need to invest in a separate control room. No matter which of the following three concepts you choose, your operators are fully protected while the X-ray is on:

- A** Niche setup in the examination room
- B** Workstation outside the room, for example in the corridor
- C** Traditional control room setup

With the new injector arm, installation costs for ceiling mounting of the injector are also a thing of the past. This means you don't have to adapt your infrastructure to the scanner – SOMATOM go.Top adapts to you, so installation costs stay low.

## Maximize patient throughput

Scan preparation gets much more efficient with Scan&GO. The same is true for scan wrap-up with Recon&GO. Combine this with the Athlon® tube with its high-end cooling technology, and SOMATOM go.Top helps you achieve a whole new level of patient throughput.

CT View&GO makes reading much easier and more efficient, providing all tools in one workflow. The tools of CT View&GO are now also available as a standalone solution with optional hardware for additional flexibility. This syngo.via View&GO provides the ideal performance boost when higher throughput needs to be managed. Offering integrated cross-specialty viewing, and supported by a brand-new software only concept, it is an all-in-one solution that comes with the same tools and the same look-and-feel as your scanner interface. Therefore, you will not need additional training for your staff. And because you won't have to invest in further software licenses, it keeps your initial investment low. Just set your workplace up and run it – to manage more patients and increase reimbursements.

## Siemens Healthineers Connect Plan

The Siemens Healthineers Connect Plan<sup>21</sup> is an all-new service plan that comes standard with the investment of SOMATOM go.Top. It fully utilizes the capabilities of the connection to our digital platforms – SRS, PEPconnect<sup>22</sup>, LifeNet – and to our remote services. This allows you to receive seamless support. It covers the second and third year after system purchase and gives you the financial confidence of premium service, matching your total cost of ownership requirements. Additionally, you can optionally upgrade to a full service contract.



## Siemens Healthineers Connect Plan<sup>21</sup> in detail

Our service plan<sup>21</sup> is an entirely new approach to improving scanner uptime, affording you financial certainty from day one. With many aspects of service – including spare parts<sup>23</sup> – covered in the scanner purchase price, you can look forward to higher uptime, improved workflows, efficient support, and streamlined training.

The system performance part of the service package offers onsite preventive maintenance that will identify potential issues and resolve them before they become a problem. It also allows you to perform straightforward tasks yourself – such as installing software updates – which means you can schedule them for times that fit into your workflows.

In terms of support, the connection between SOMATOM go.Top and the certified Smart Remote Services infrastructure allows our experts to keep an eye on the system and take corrective action if problems appear. It also means we can offer remote desktop sharing to guide you through protocols and examinations. If you encounter a fault with the scanner, FAST Contact™<sup>24</sup> allows you to raise a service ticket easily. This triggers a call-back from our experts, who provide quick support to customers whenever they need it.

## Blended learning with PEPconnect

Improve your skills and qualifications with the industry's first online personalized education experience – PEPconnect.<sup>22</sup>

The purchase of SOMATOM go.Top gives you access to blended learning and performance support activities on PEPconnect enhancing performance and competency.

With PEPconnect, you can begin your training even before the arrival of your SOMATOM go.Top system. And with multidevice accessibility, you experience your choice of learning sessions anytime and anywhere.

Benefit from the broad portfolio of competency-based performance support and social learning activity within PEPconnect, providing individual learning experiences in the healthcare world.

Stay on top in your profession with PEPconnect and make a difference in your patients' lives.





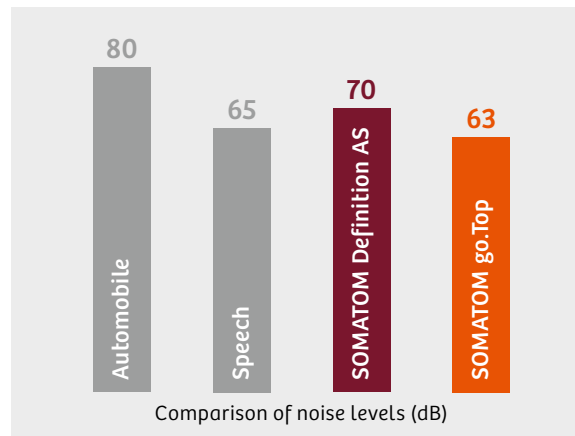
# Further highlights

SOMATOM go.Top combines technical solutions from high-end scanners with brand new innovations. Profit from proven Siemens Healthineers technology for smart data analysis and gentle sound design – and discover practical new features.



## teamplay apps

With SOMATOM go.Top and our cloud-based performance management solution teamplay, you will get a transparent overview of your system data. teamplay helps you identify areas of improvement and monitor your imaging fleet's performance. In addition, it distributes one master protocol to all your SOMATOM go. scanners – for consistent quality.



## Gentle voice and sound design

SOMATOM go.Top is designed for less noise – and reduced sound pressure for patients and staff. Thanks to targeted suppression of noise as well as optimized fan location and airflow, our gentle sound design improves your working environment and increases patient comfort. Furthermore, allow patients to benefit from gentle voice guidance of breathing instructions due to a new voice design, intended to reduce motion artifacts.



## New tabletop

The redesigned tabletop is thinner and allows X-ray to penetrate the material more easily. This means less attenuation due to scattering and absorption – resulting in less image noise. The new tabletop is therefore an important contributor to low-dose imaging.

# Optional High Performance Package

Benefit from additional operational and clinical flexibility by configuring your SOMATOM go.Top with the High Performance Package, a bundle of software and hardware options to boost your performance.

## High Power 70

Extraordinarily high tube currents of up to 825 mA (the highest in this class of scanner) allow you to scan virtually every patient at the optimal kV level (down to 70 kV) for enhanced iodine contrast and lower dose.

## iMAR

iMAR<sup>14</sup> (iterative metal artifact reduction) reduces artifacts in a wide variety of clinical situations – for higher image quality.

## High speed 0.33 s

Increased volume coverage with a faster rotation time (0.33 seconds), providing extended clinical capabilities and reduced motion artifacts.

## Additional features for CT View&GO

**Spine Ranges:** guided reconstruction of anatomically aligned spine curved planar reconstructions (CPR).

**Lung CAD:** highly sensitive and specific in lung nodule detection.

**syngo.CT CaScoring:** provides total and relative Calcium Scoring with Coronary Age calculation based on trial data.

## Additional features for Recon&GO

**Inline Spine Ranges:** time savings for a complete spine reconstruction, while reducing the risk of mislabeling.

**Inline Rib Ranges:** automated rib labeling and numbering.

**Inline Lung CAD:** assistance in the detection of pulmonary nodules during review of CT examinations.



# Technical specifications

## Key data

Slices.....	128 (IVR)
Rotation times .....	up to 0.33 s
Tube.....	7.0 MHU (17.5 MHU equivalent value)
Power .....	75 kW (187 kW equivalent value with SAFIRE <sup>20</sup> )
High voltage .....	70–140 kV in 10 kV steps, Sn100, Sn110, Sn120, Sn130, Sn140
mA.....	up to 825 mA
z-coverage .....	3.84 cm
Max. table load .....	up to 307 kg

## Innovative hardware

SOMATOM go.Top has a patient table with a scannable range up to 160 cm that can hold up to 227 kg. The table is equipped with newly designed accessories such as

- 1 a paper roll holder,
- 2 an infusion stand, and
- 3 a storage box on the side.

Upgradable to the table that can hold up to 307 kg and has an extended scannable range of 200 cm.





# 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.



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[healthcare.siemens.com/news](https://healthcare.siemens.com/news)

## Footnotes

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- 10 Kim AS. Who best to create a sense of urgency for acute stroke treatment? Commentary on "Neurohospitalists improve door-to-needle times for patients with ischemic stroke receiving intravenous tPA". *Neurohospitalist.* 2012 Oct;2(4): 117-118.
- 11 Cinematic Rendering performed with syngo.via Cinematic VRT. Cinematic VRT is recommended for communication, education, and publication purposes and not intended for diagnostic reading.
- 12 Centers for Disease Control and Prevention [Internet]. Atlanta, GA: CDC; 2016. Injury Prevention & Control. Key Injury and Violence Data. 2016 Sep 19 [cited 2017 Sep 27]. Available from: [https://www.cdc.gov/injury/wisqars/overview/key\\_data.html](https://www.cdc.gov/injury/wisqars/overview/key_data.html)
- 13 Huber-Wagner S, Lefering R, Qvick LM, Körner M, Kay MV, Pfeifer KJ, et al. Effect of whole-body CT during trauma resuscitation on survival: a retrospective, multicentre study. *Lancet.* 2009 Apr;373(9673):1455-1461.
- 14 iMAR is designed to yield images with a reduced level of metal artifacts compared to conventional reconstruction if the underlying CT data is distorted by metal being present in the scanned object. The exact amount of metal artifact reduction and the corresponding improvement in image quality achievable depends on a number of factors, including composition and size of the metal part within the object, the patient size, anatomical location and clinical practice. It is recommended to perform iMAR reconstruction in addition to conventional reconstruction.
- 15 Ray JC, Kusumoto F. The transition to value-based care. *J Interv Card Electrophysiol.* 2016 Oct;47:61-68.
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- 20 In clinical practice, the use of SAFIRE may reduce CT patient dose depending on the clinical task, patient size, anatomical location, and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task. As determined from SOMATOM Definition Flash data, SAFIRE enables up to 60% dose reduction. Data on file.
- 21 Powered by Smart Remote Services. Siemens Healthineers Connect Plan is subject to regional adaptations/restrictions.
- 22 PEPconnect availability is subject to regional restrictions.
- 23 Excluding X-ray tube and tablet. Additional tube and tablet coverage solutions are optionally available.
- 24 Requires LifeNet access – subject to country-specific availability.



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 sales organization of Siemens Healthineers worldwide.

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