



Expand  
your successful  
CT business  
**SOMATOM go.Up**

International version. Not for distribution or use in the US.

[siemens.com/somatom-go-up](http://siemens.com/somatom-go-up)

**SIEMENS**  
Healthineers



# A fundamentally changing environment

The healthcare market is transforming. Apart from expanding costs, perhaps the two most prominent areas of change are reimbursement structures and demographics.

As the market shifts toward value-based reimbursement, healthcare providers must explore new clinical processes and new ways to coordinate care. At the same time, there is an aging population with growing care needs for chronic diseases – and patients who are more informed and discerning.

In addition, there is intense competitive pressure. Healthcare providers not only have to manage an increasing number of patients at lower costs, they must also set themselves apart in terms of clinical range. And they must find ways to increase efficiency and attract patients by offering service that is more personalized, transparent, and affordable.



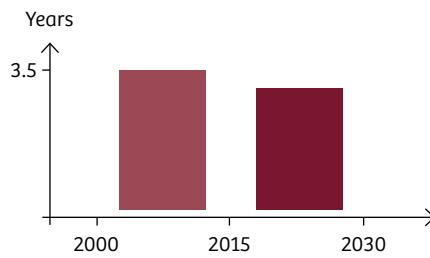
*"We want to help you achieve daily success. In order to offer the best possible routine-and-beyond CT scanner, we developed SOMATOM go.Up in close collaboration with you, our customers. For me, SOMATOM go.Up is a direct expression of our aim to be an inspiring partner by helping you expand your successful CT business."*

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

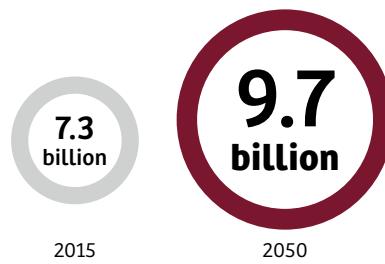
# Staying ahead in a challenging market

Changes in demographics and the healthcare market create a challenging situation for healthcare providers. While facing reimbursement cuts, they have to provide for more – and older – patients. The market, however, also offers opportunities: Increasing expenditures on healthcare and the continued role of CT as a dominant diagnostic tool make such equipment an investment in the future.

## Increase in life expectancy & world population



Global gains in average life expectancy per decade (in years)<sup>1</sup>



World population in 2015 and estimated population by 2050<sup>2</sup>

## Reimbursement cuts



Percentage of European institutions operating with significant reductions in reimbursement<sup>3</sup>

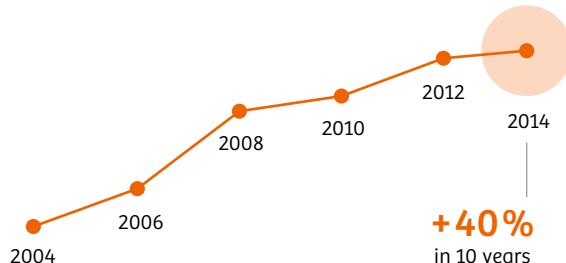
## Demographic change

Global life expectancy is increasing. It has been doing so by an average of over three years per decade since 1950. And this rate is growing. The world's population, of course, is also on the rise – and is expected to reach 9 billion by 2040.

## Economic pressure

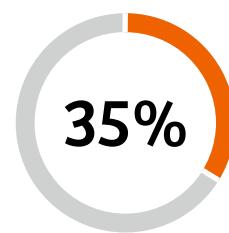
The growing population puts enormous pressure on healthcare systems around the globe. As a result, many have responded with significant cuts in reimbursement.

## Per capita expenditures on healthcare



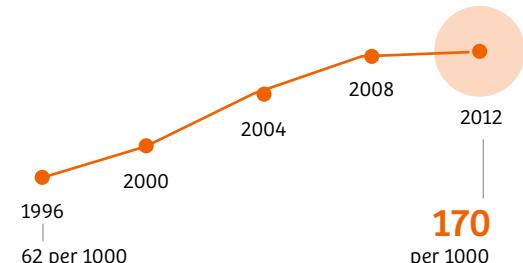
Development of per capita expenditures on healthcare over the past decade<sup>4</sup>

## Out-of-pocket health expenditure



Fraction of out-of-pocket expenditure in terms of total health expenditure<sup>1</sup>

## Utilization of abdominal CT imaging



Utilization of abdominal CT imaging per 1000 Medicare enrollees<sup>5</sup>

## Growing expenditure

Public per capita expenditure on healthcare has been growing globally since the early 2000s. Between 2004 and 2014, there was a rise of about 40%. Money is being spent – and the amount is increasing.

## 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.

## The role of CT

It can certainly also be considered an opportunity that CT imaging remains one of the most important diagnostic tools, for example in abdominal imaging. On top of that, the recent CMS (Centers for Medicare & Medicaid Services) approval of reimbursement of CT lung cancer screening as a newly introduced tool is an additional expression of the increasing demand for CT imaging and screening.<sup>6</sup>



**SOMATOM  
go.Up**

# Make success your daily business

In CT imaging today, it is not just about providing answers to patients, but also about running a business. This means that healthcare providers have to differentiate themselves in an intensely competitive market.

We developed the SOMATOM® go. platform to help you achieve daily success. As a member of this family, SOMATOM® go.Up comes with technology that is completely new to scanners of its kind. It makes advanced procedures available for daily practice. In addition, it includes an innovative workplace design and an entirely redesigned service model to reduce costs.

Among other things, SOMATOM go.Up opens up the field of preventive care for your routine operations. Making high-quality care accessible, it allows you to stay competitive and keep an eye on profitability. Profit from advanced clinical results and expand your successful CT business.

## Contents

At a glance .....	09
Trendsetting workflows .....	11
Profound clinical results .....	19
All-in-one solution .....	41
Further highlights .....	47
Optional High Performance Package.....	48
Technical specifications .....	49
About us .....	51
Footnotes .....	54



# SOMATOM go.Up 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.Up is part of this platform.

## Go for high performance with trendsetting workflows

SOMATOM go.Up is built on a groundbreaking concept of mobile operation and workflow automation. By allowing you to deliver high performance every day, it helps you establish and run your CT business efficiently.

## Go for visible growth with profound clinical results

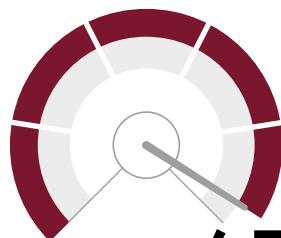
SOMATOM go.Up takes you beyond routine. Enhance your portfolio, enter the fields of preventive care and RT planning – and substantially expand the services you can offer your patients. Equipped with premium technologies, SOMATOM go.Up enables, for example, cardiac assessment via calcium scoring examinations.

## Go for financial certainty with an all-in-one solution

SOMATOM go.Up comes with highly reliable components, a cost-saving workstation design, as well as a completely reworked service and training model. In short, it is an all-in-one solution for financial certainty.

## **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 professional photograph of a female healthcare worker with dark hair tied back, wearing white V-neck scrubs. She is looking down at a silver tablet computer she is holding in her hands. A stethoscope hangs around her neck from a blue lanyard. The background is a soft-focus hospital or clinic environment.

## 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.Up is built on a unique concept of mobile operation and workflow automation.

## 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.Up 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.

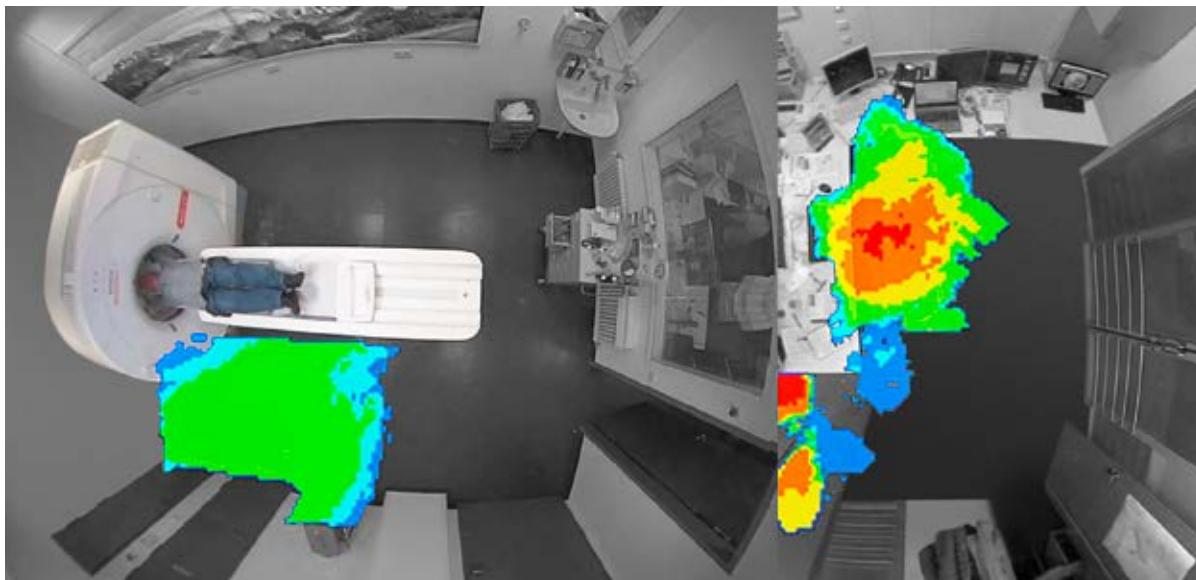
The close-up perspective makes it easy to spot even micro-movements and keep the patient in the right position. In addition to the camera, the Halo assembly includes ambient mood lighting and a digital visual countdown to help improve patient well-being and help them comply with breath-hold times.



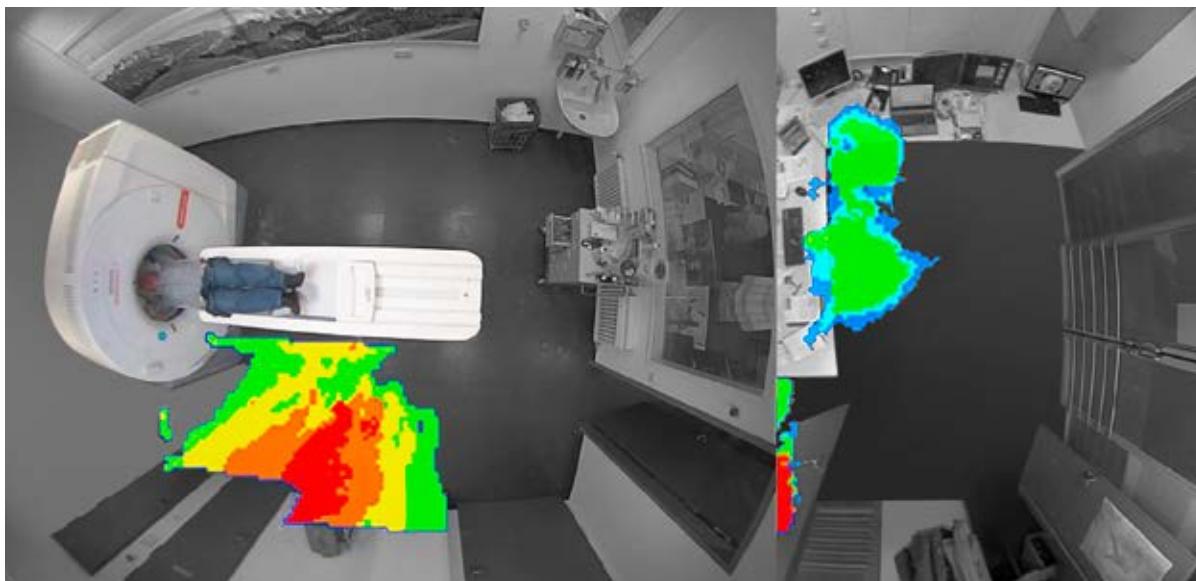
## Injector arm

The unique gantry-mounted injector arm of SOMATOM go.Up 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



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

## New workplace design

Thanks to gantry-integrated computers, SOMATOM go.Up 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.Up, 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.



# 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.Up features a holistic set of intuitive solutions that addresses your workflow not only at the scanner but also beyond. 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 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.



## 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.

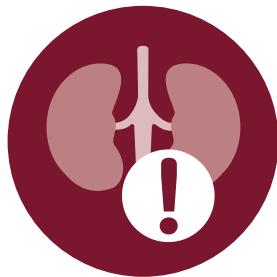


*"The mobile workflow:  
More than ever, the patient is in the  
center of the whole examination."*

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

## Patient exclusion can hinder business growth

In the face of an intensely competitive market, it is essential to offer what others cannot. At the same time, the exclusion of incoming patients needs to be kept to a minimum in order to achieve business growth. This can be difficult, particularly when their health problems are considered possible risk factors for CT.



### Risk factor contrast-induced nephropathy (CIN)

CIN incidence can reach 9.3% in the presence of associated risk factors such as diabetes mellitus.<sup>8</sup> The required volume of contrast medium (CM) can therefore very well mean the exclusion of a patient from a CT scan. This could be addressed with solutions that help reduce CM usage. According to scientific studies, this is, for example, achieved by using high mA current at 80 kV in CT angiography.<sup>9</sup>

**How many more patients would you be able to serve if you could lower dose and CM usage while still preserving image quality?**

# Go for visible growth with profound clinical results



SOMATOM go.Up helps you expand your clinical portfolio and go beyond routine. Thanks to high-end technologies you can offer complex exams such as advanced neuro imaging, lung cancer screening, and first-level cardiac assessment.

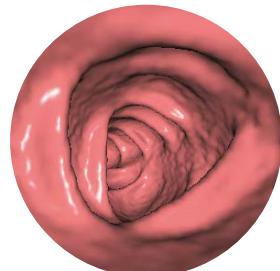
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# Grow in these fields

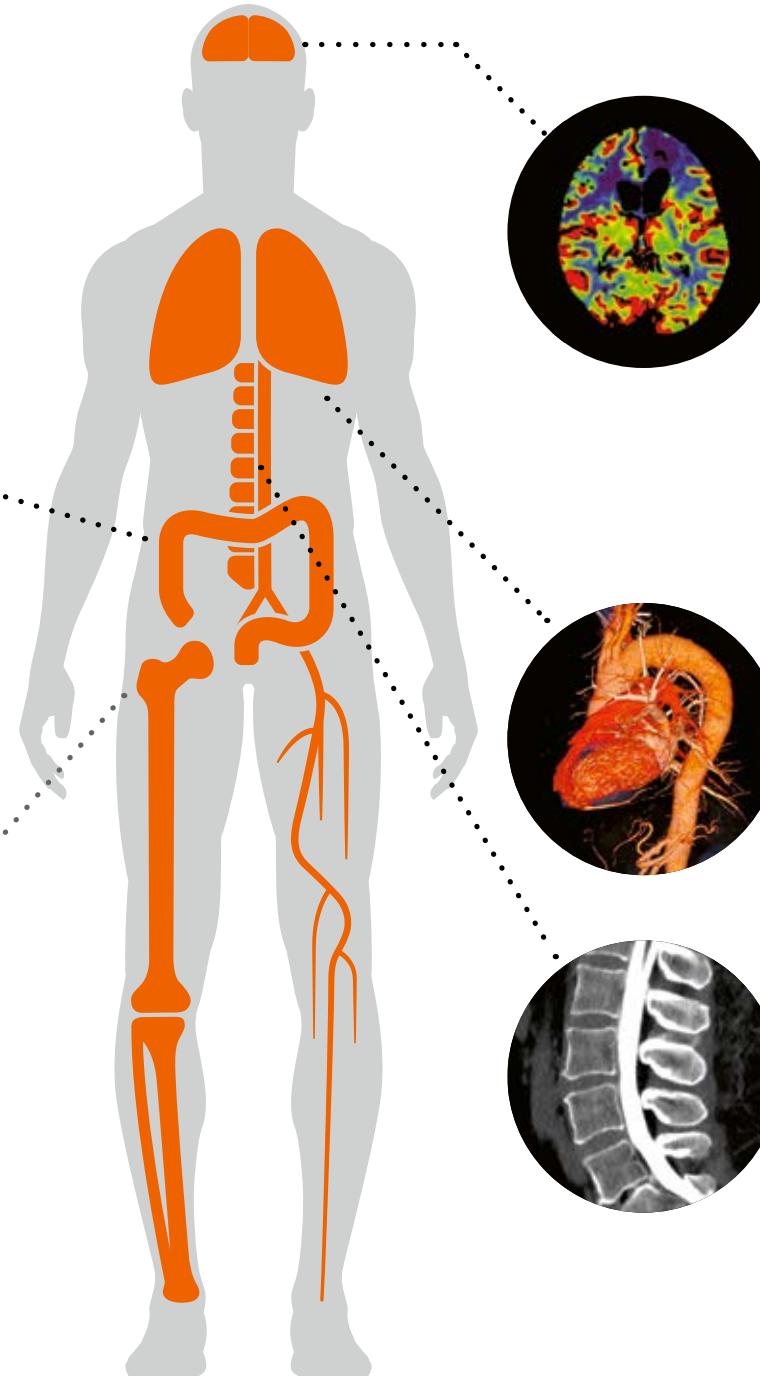
## Broaden your portfolio in preventive care

SOMATOM go.Up allows you to offer colon imaging and lung cancer screening as well as calcium scoring exams. With sub-millimeter collimation in every scan, it provides high spatial resolution and helps improve the detection of occult lesions.



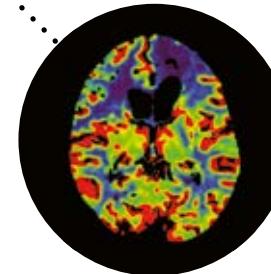
## Fast and efficient routine scanning

SOMATOM go.Up delivers the low-dose scanning that is essential for optimal patient care. It allows scans of long ranges at the speed of a breath-hold while maintaining a high spatial resolution.



## Speed and accuracy in routine neuro examinations

SOMATOM go.Up optimizes image quality and reduces dose in routine neuro examinations. Its speed and accuracy allow a crisp visualization of the brain and the supraaortic vessels with reduced venous contamination. An optimized workflow provides dynamic 4D quantification and visualization of perfusion data.



## High-quality angiography for vascular exams

SOMATOM go.Up allows high-quality angiography exams of central and peripheral arteries with good iodine contrast, sub-millimeter slices, and precise timing.



## Intuitive functions in CT-guided intervention



Benefit from Guide&GO, the first tablet-based solution for CT-guided interventions. Control the entire procedure from the tablet and remote control, and navigate images using intuitive touchscreen functions familiar to any smartphone user.

## Fast and efficient routine scanning

It is clinically and financially essential for CT facilities to have fast and efficient routine workflows without compromising on image quality or dose. Combined with GO technologies, SOMATOM go.Up offers speed, accuracy, and low dose, allowing scans of long ranges at the speed of a breath-hold while maintaining high spatial resolution.

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. A low dose is therefore essential for optimal patient care.

One contributor to low dose is the new tabletop. It is exceptionally thin and allows X-rays to penetrate the material more easily, thus minimizing the radiation needed for each scan.

Tin Filter technology also plays a key role in keeping dose levels low. Clinical experience furthermore shows that it reduces beam-hardening artifacts, which, in combination with the high-end metal artifact reduction provided by iMAR, makes it extremely useful for orthopedic examinations.

In order to speed up thorax and abdominal scanning and thus reduce motion artifacts, SOMATOM go.Up offers a 2.2 cm Stellar detector with sub-mm slices across its full width.

In addition, the powerful hardware of FAST IRS combined with Recon&GO streamlines your reading workflow by providing ready-to-read images wherever you want thanks to inline anatomical ranges. This feature can create automatic orientations for all joints and body regions and send them directly to the PACS or your film printer. This way, you have direct access to curved parasagittal reconstructions of the spine, for instance.



### Stellar detector

The Stellar detector lowers image noise in every scan, while advanced iterative reconstruction from SAFIRE delivers excellent image quality at very low doses.<sup>10</sup> This provides excellent and homogenous image quality, even in complex areas, such as the base of the skull, making it especially relevant for routine neuro imaging.

The Stellar detector's high-end technology includes fully integrated components and an advanced 3D anti-scatter collimator. It keeps electronic noise low, increases dose efficiency, and improves spatial resolution. The smart configuration of the detector elements simplifies access, eases maintenance, and increases scanner uptime.

**The Stellar detector's integrated electronics and Ultra Fast Ceramic material deliver enhanced scan results with lower image noise and less dose.**



#### Multiphase contrast-media-enhanced imaging of the kidneys

- 3 mm reconstructions
- Tube voltage: 130 kV
- CTDI<sub>vol</sub>: 9.8 mGy

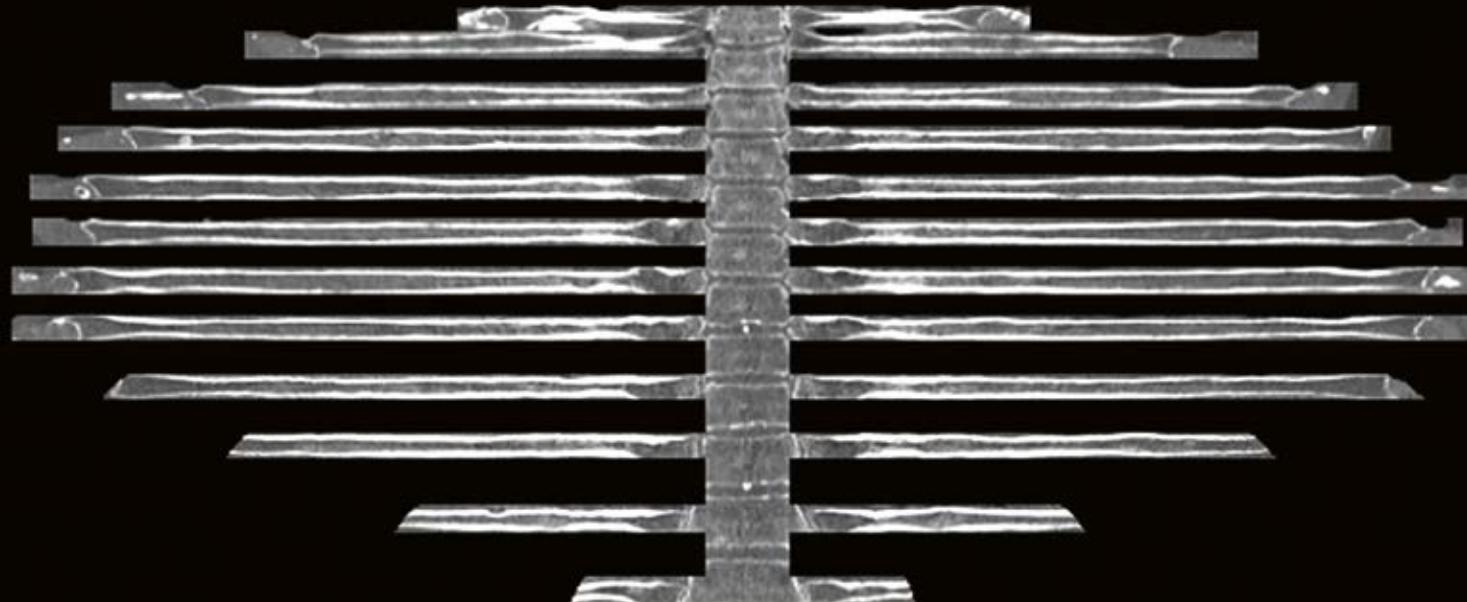
Courtesy of Erlangen University Hospital, Erlangen, Germany

#### Abdominal imaging of bariatric patients

- Coronal 3 mm MPR ranges
- Tube voltage: 130 kV
- CTDI<sub>vol</sub>: 15.36 mGy

Courtesy of Centro Hospitalar de São João, Porto, Portugal

**Recon&GO streamlines reading workflows with rib unfolding.**

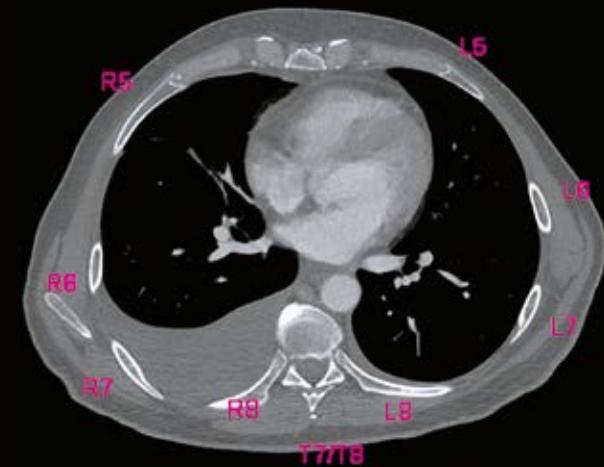


**Rib unfolding study**

- Inline rib ranges
- Tube voltage: 130 kV
- CTDI<sub>vol</sub>: 4.19 mGy

*Courtesy of Erlangen University Hospital, Erlangen, Germany*

**Recon&GO streamlines reading workflows with simultaneous labeling of ribs and spine in three planes.**



#### Simultaneous spine and rib labeling

- Axial and coronal MPRs
- Tube voltage: 130 kV
- CTDI<sub>vol</sub>: 4.19 mGy

Courtesy of Erlangen University Hospital, Erlangen, Germany

# High-quality CT angiography

CT angiography is now routine in many institutions, especially where the stenosis evaluation of central and peripheral vessels as well as stent planning are frequent tasks. High-quality angiography exams rely on good iodine contrast, sub-millimeter slices, and precise timing. SOMATOM go.Up can do all of this and more.

Its always-on 0.7 mm collimation over the complete detector width and high power reserves in the generator and tube enable uniform scanning over longer ranges, for instance in runoff examinations.

Its brand new, easy-to-understand interface emphasizes visual logic. This is evident, for example, in the new workflow timeline, which helps users fully understand the scan protocol and allows them to follow contrast timings at a glance.

Additionally, GO technologies increase the efficiency of your staff, irrespective of their level of experience. Check&GO, for example, verifies whether scan coverage is correct and contrast media properly distributed. FAST ROI automatically identifies regions of interest and calculates HU for the aorta in bolus-tracking examinations.

For efficient reading, CT View&GO provides automatic bone-free visualizations and tools to create curved planar reconstructions of any vessel with just two clicks.

Do you prefer to read your images directly in the PACS or film printer? Do you want to simplify communication with your referrers? Recon&GO offers inline bone-free angiograms and inline CPRs of the main vessels – ready-to-read in the environment of your choice.



## High Power 80

High Power 80 (high mA values in 80 kV imaging) allows you to scan with 400 mA at 80 kV for enhanced iodine contrast, which, combined with always-on sub-mm collimation, is especially beneficial for small distal vessels. The increased iodine contrast of the image allows you to reduce the amount of contrast media considerably – for better patient care and reduced examination costs.

High power 80 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.

**High Power 80 strikes the perfect balance for CT angiography and achieves better iodine contrast for sharper images.**



**FAST ROI automatically identifies the correct ROI in the aorta. The scan starts once a certain threshold is reached for perfect vessel visualization.**

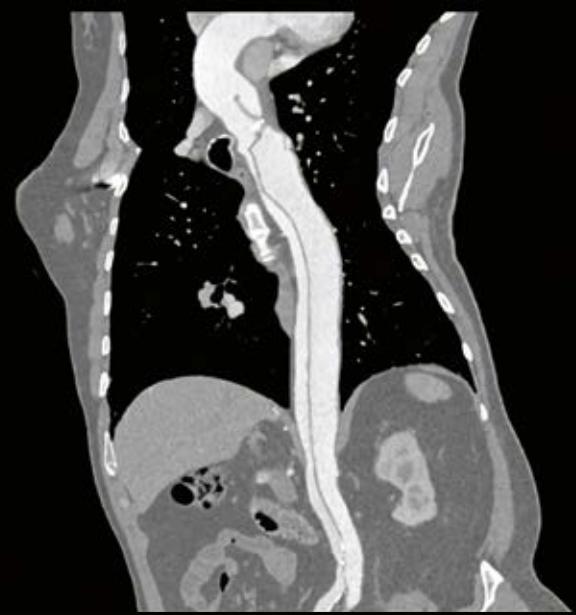


#### **CT angiography with low kV setting**

- VRT + bone removal and MPR in CT View&GO
- Tube voltage: 80 kV
- CTDI<sub>vol</sub>: 3.45 mGy

*Courtesy of Erlangen University Hospital, Erlangen, Germany*

**Fully automated, inline, bone-free CPR simplifies the evaluation of perfused vessels.**



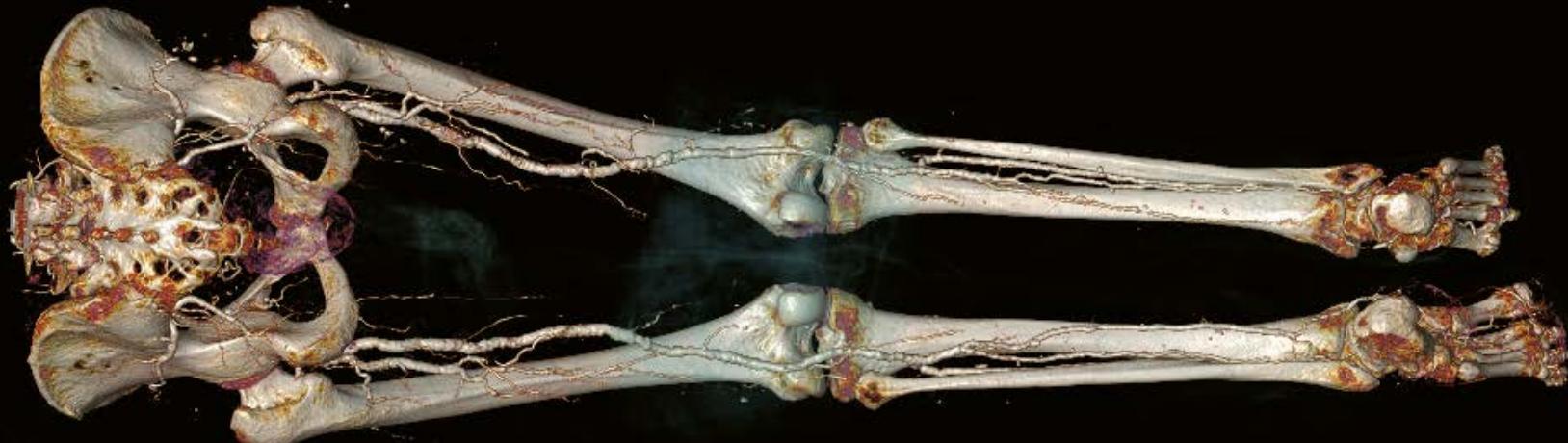
#### High-end study of the aorta

- Oblique VRT
- Tube voltage: 110 kV
- CTDI<sub>vol</sub>: 5.61 mGy

Courtesy of Centro Hospitalar de São João, Porto, Portugal

Cinematic VRT performed with syngo.via.<sup>11</sup>

**Scanning with low kV can reduce the amount of contrast media.**



**CT angiography at low kV and high mAs**

- Oblique VRT
- Tube voltage: 80 kV
- CTDI<sub>vol</sub>: 7.2 mGy

*Courtesy of Centro Hospitalar de São João, Porto, Portugal*

## Speed and accuracy in routine neuro examinations

When it comes to neuro imaging, the ability to make fast therapeutic decisions can save lives. From stroke-induced infarctions with extensive bleeding to subarachnoid hemorrhages and ruptured aneurysms, images that give a clear view of the situation are essential in determining treatment.

SOMATOM go.Up achieves the speed and accuracy necessary for CT angiography, and is capable of displaying neurovascular structures crisply and with reduced venous contamination. Thanks to its Stellar detector and constant sub-mm collimation, SOMATOM go.Up optimizes image quality and reduces dose in routine neuro examinations.

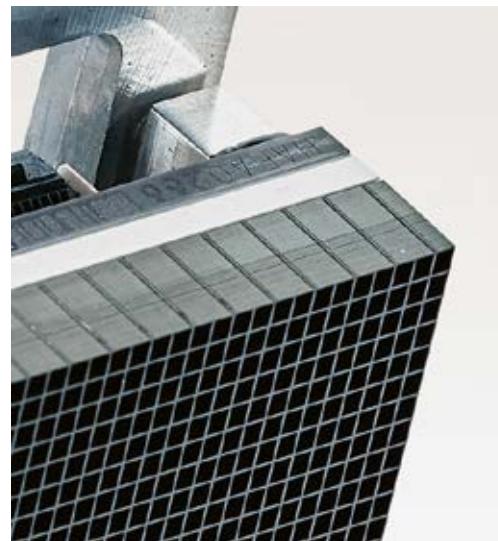
In order to display the patient anatomy properly, most neuro studies require dedicated orientations, for instance for the base of the skull, the inner ear, or the sinus.

To make it easier to integrate these into your clinical workflow, Recon&GO takes spiral data and creates inline anatomical ranges for standard neuro orientations.

If you need to perform sequential acquisition to improve image quality on the various planes, SOMATOM go.Up offers a tilting gantry that allows you to scan at the required orientation.

CT View&GO simplifies reading with its Neuro DSA (digital subtraction angiography) feature. By enabling single-click, bone-free visualization, Neuro DSA allows you to quickly and easily evaluate neurovascular disease and plan interventional treatments. It also does this without increasing dose, as it uses the standard, non-enhanced head scan for the subtraction.

Available both as guided or automated workflow blood perfusion in the brain is visualized. One clinical application is to visualize blood flow, blood volume and parameter mismatch in acute ischemic stroke and help to estimate the size of the core infarct as well as the extent of tissue at risk.

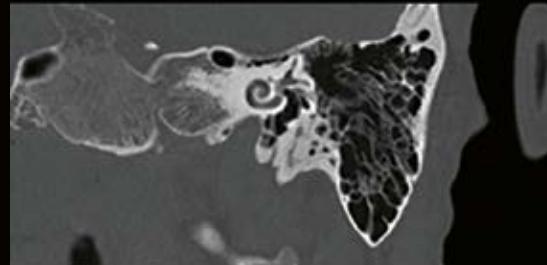


### Sub-millimeter collimation

In addition to high power reserves in the generator and tube, SOMATOM go.Up features continuous 0.7 mm collimation across the full detector width. It therefore achieves uniform scanning over longer ranges without compromising spatial resolution or speed. Moreover, SOMATOM go.Up always provides the thin slice data necessary for flexibility in postprocessing.

Therefore, if you need further details, such as additional orientations or postprocessing tasks, you can retrospectively use inline results for additional reconstructions. You will find these reconstructions ready-to-read directly in your PACS, your film printer, or any other reading environment.

**Streamline your reading workflow with inline MPRs from Recon&GO powered by ALPHA (Automatic Location and Parsing of Human Anatomy) technology, and one-click aneurysm evaluation via Neuro DSA.**



#### CT imaging of the skull base and inner ear

- 0.8 mm MPR
- Tube voltage: 130 kV
- CTDI<sub>vol</sub>: 33.1 mGy

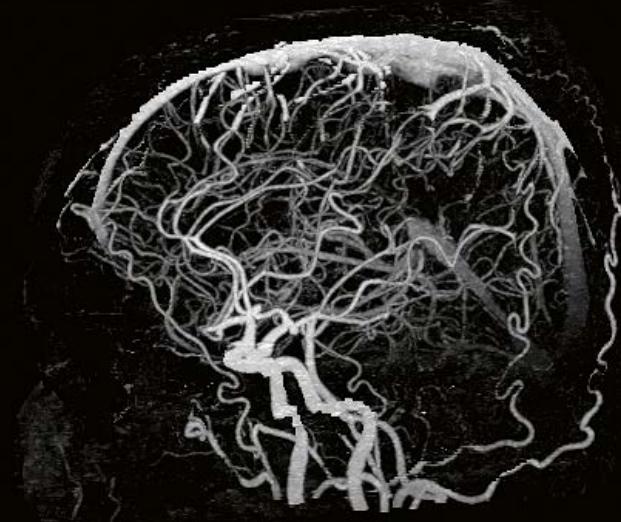
Courtesy of Erlangen University Hospital, Erlangen, Germany



#### Contrast-media-enhanced spiral CT of the brain

- Inline MPR
- Tube voltage: 130 kV
- CTDI<sub>vol</sub>: 41.2 mGy

Courtesy of Erlangen University Hospital, Erlangen, Germany

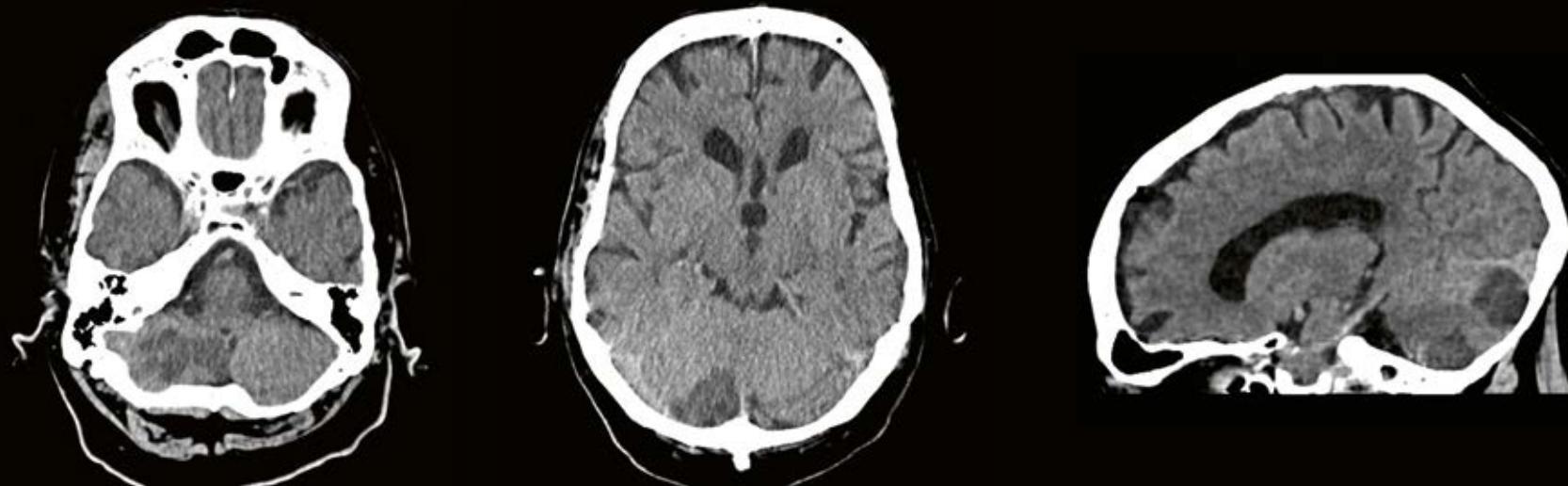


#### Digital subtraction angiography of the cerebral vessels

- MIP Neuro DSA in CT View&GO
- Tube voltage: 110 kV
- CTDI<sub>vol</sub>: 41 mGy

Courtesy of Erlangen University Hospital, Erlangen, Germany

**Excellent gray-white matter differentiation and beam hardening correction for the posterior fossa with iBHC advanced iterative algorithms.**

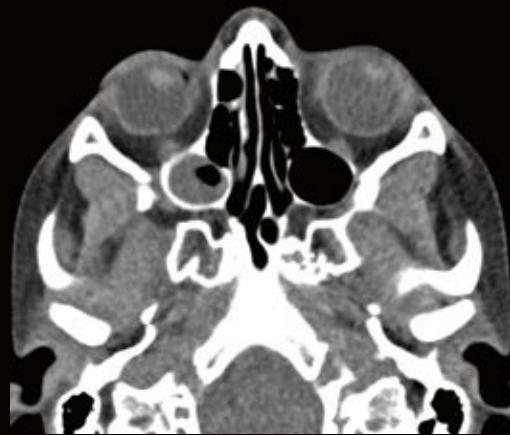
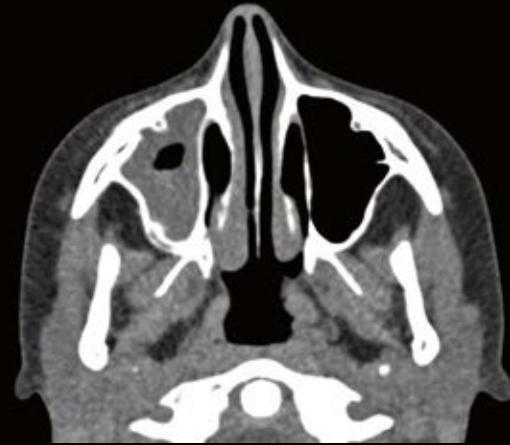


**Follow-up of stroke patient**

- Axial and MPR reconstructions
- Tube voltage: 130 kV
- $\text{CTDI}_{\text{vol}}$ : 44.4 mGy

*Courtesy of Erlangen University Hospital, Erlangen, Germany*

**Integrated Tin Filter technology reduces dose while increasing image quality in the interface between air and soft tissue.**



#### Low-dose sinus imaging

- MPR reconstructions
- Tube voltage: 110 kV + Tin Filter
- CTDI<sub>vol</sub>: 2.58 mGy

Courtesy of Centro Hospitalar de São João, Porto, Portugal

## Broaden your portfolio in preventive care

The potential benefits of early detection and preventive care in oncology, coronary artery disease, and other pathologies are huge, but CT imaging only makes sense if you can achieve excellent image quality at very low doses.

Thanks to its low-dose technologies, SOMATOM go.Up allows you to rise to these challenges and cover, in particular, lung cancer screening and colon imaging. And thanks to sub-millimeter collimation in every scan, SOMATOM go.Up provides high spatial resolution and helps improve the detection of occult lesions. For lung cancer screenings, dedicated low-dose lung protocols significantly reduce dose. And the non-invasive nature of CT colon imaging opens up early detection to more patients than conventional methods. Conventional colonography exams, after all, are unsuitable for some patients.

For both fields, CT View&GO offers dedicated optimized postprocessing tools to enhance your diagnostic confidence. The endoscopic view supports you during virtual colonoscopies, and the Lung CAD second reader tool helps the radiologist identify lung nodules.

Calcium scoring is also available for assessing the risk of coronary artery disease. Calcium scoring accurately visualizes and quickly quantifies calcified coronary lesions. The software provides a one-stop comprehensive analysis of number of lesions, volume, calcium mass, and Agatston score.

Preventive care is also key in osteoporosis, the most common reason for a broken bone among older people. SOMATOM go.Up offers a streamlined CT View&GO calculation of bone mineral density for early diagnosis and assessment of treatment efficiency in osteopenia and osteoporosis.

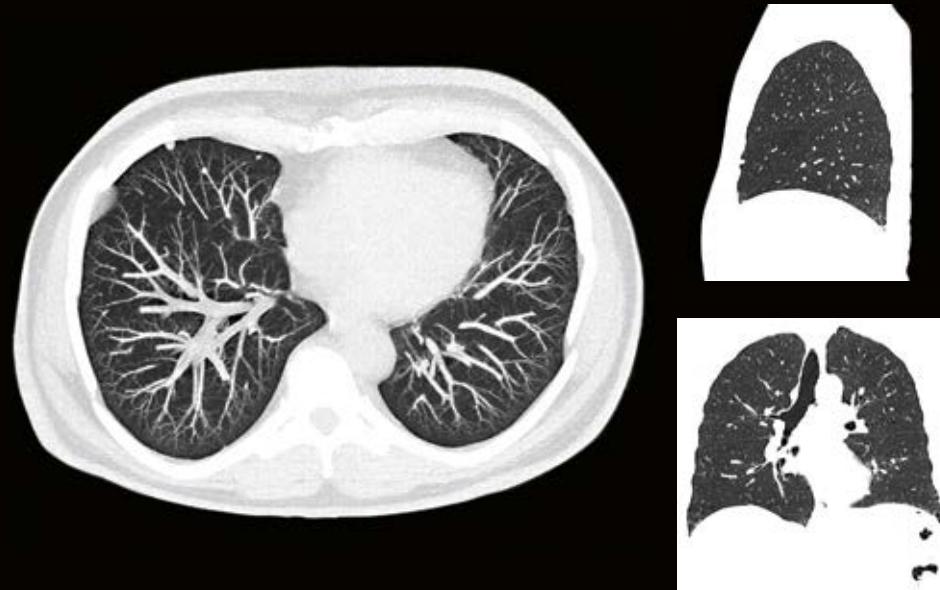


### Tin Filter

Inherited from high-end Dual Source scanners, the Tin Filter cuts out lower energies to reduce dose and optimize image quality at the interface between soft tissue and air. This has direct benefits in lung and colon imaging, for example.

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

**Tin Filter technology cuts out lower energies to reduce dose and enhance image quality at the interface of soft tissue and air.**



#### **Low-dose lung imaging for nodule visualization**

- Thick-slice MIP and coronal and sagittal MPR
- Tube voltage: 110 kV + Tin Filter
- CTDI<sub>vol</sub>: 1.28 mGy

*Courtesy of Erlangen University Hospital, Erlangen, Germany*

**CT View&GO offers an endoscopic view that gives users dedicated, optimized postprocessing tools to enhance diagnostic confidence.**

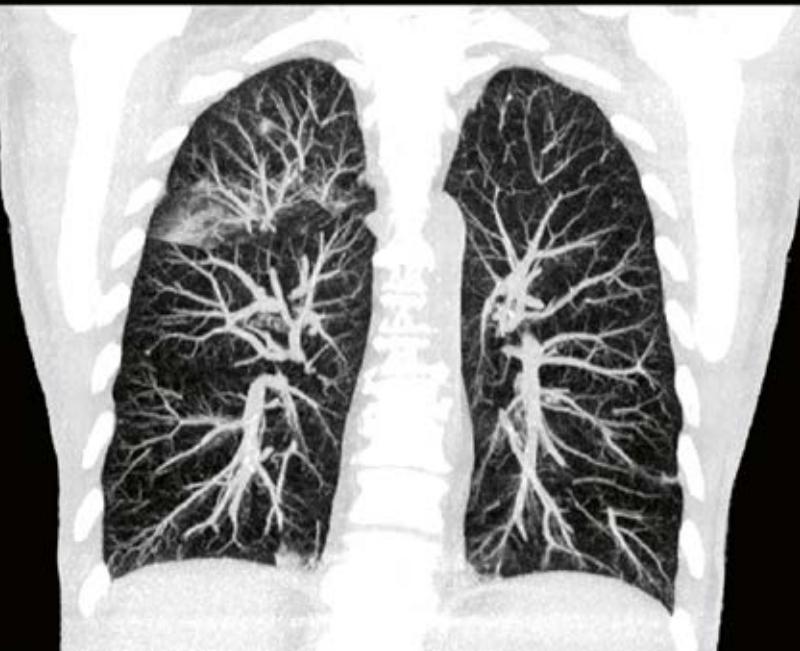


#### **Virtual colonoscopy**

- Endoscopic view in CT View&GO
- Tube voltage: 110 kV + Tin Filter
- CTDI<sub>vol</sub>: 0.63 mGy

*Courtesy of Erlangen University Hospital, Erlangen, Germany*

**Stay ahead of the competition with ultra-low-dose lung imaging for adults, powered by Tin Filter.**

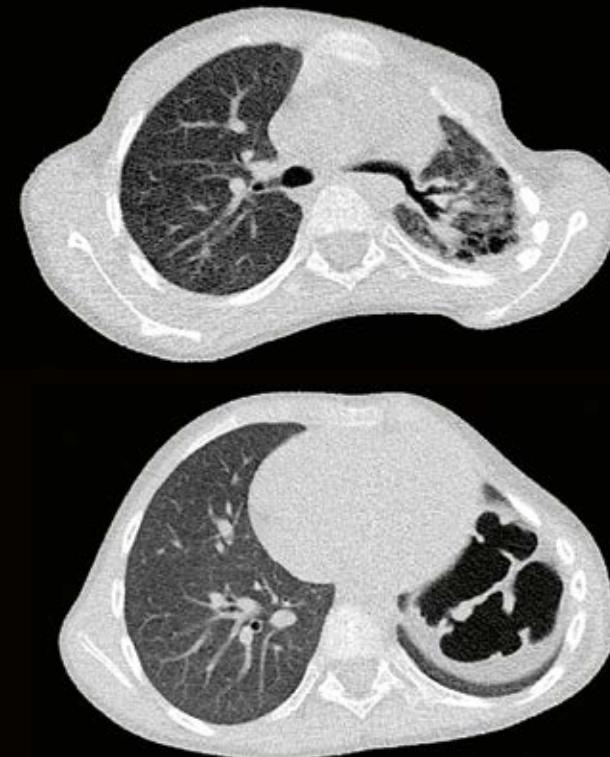


#### **Ultra-low-dose adult thorax imaging**

- Axial MPR and coronal MIP reconstructions
- Tube voltage: 110 kV + Tin Filter
- CTDI<sub>vol</sub>: 0.44 mGy

*Courtesy of Centro Hospitalar de São João, Porto, Portugal*

Combined with CARE Child protocols, Tin Filter enables ultra-low-dose pediatric studies.



#### Ultra-low-dose pediatric thorax imaging

- 3 mm reconstructions
- Tube voltage: 110 kV + Tin Filter
- CTDI<sub>vol</sub>: 0.16 mGy

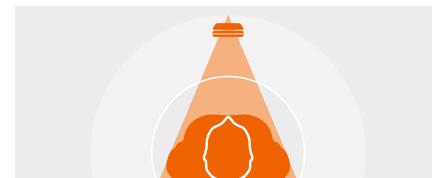
Courtesy of Centro Hospitalar de São João, Porto, Portugal

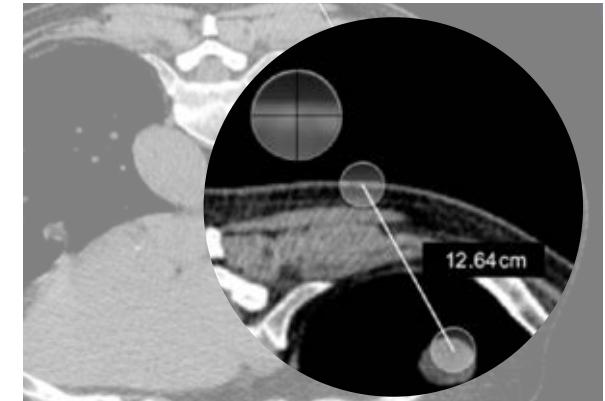
# Guide&GO: intuitive functions in CT-guided intervention

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>12</sup> Dedicated technology that can simplify workflows and maximize safety will help you optimally handle these procedures and patients.

## Tin Filter

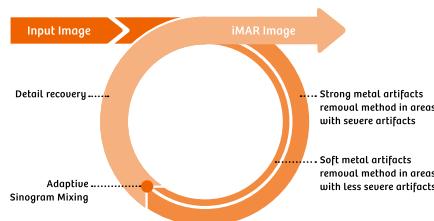
Interventional procedures usually require multiple scans. Tin Filter reduces dose in each of them. At the same time, it enhances contrast between soft tissue and air. This results in significantly less accumulated dose for both patients and interventionists. By reducing beam hardening artifacts, Tin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





## 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, 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.Up 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.

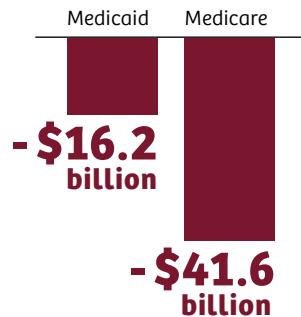
## Safe and accurate at low dose

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.

## 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>13</sup> forcing healthcare providers to find ways to keep costs as low as possible.

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

A professional photograph of a woman in a white lab coat and a man in a grey suit shaking hands over a dark wooden table. They are both smiling. The background is a bright, modern office or hospital setting.

## Go for financial certainty with an all-in-one solution

SOMATOM go.Up is designed with an eye to reducing the costs associated with investing in and maintaining a CT scanner. It features a flexible all-in-one solution that covers everything you need around the scanner.



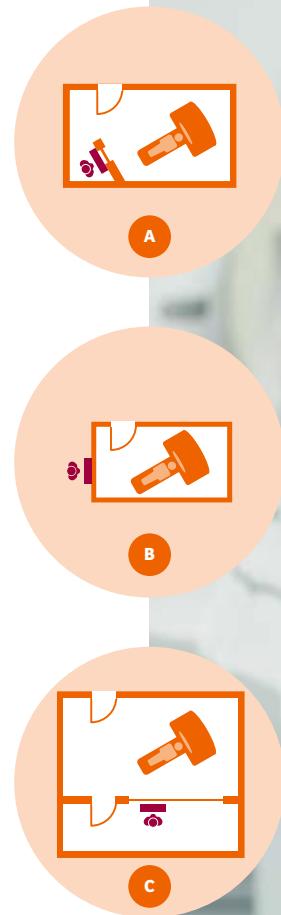
## Low initial investment

A key aim of the overall SOMATOM go. platform concept was to minimize your initial cost of investment. The result is a system that makes a Siemens Healthineers CT scanner more affordable than ever.

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 will choose, your operators are fully protected while the X-ray is on:

- Ⓐ niche setup in the examination room
- Ⓑ workstation outside the room, for example in the corridor
- Ⓒ traditional control room setup

This means you don't have to adapt your infrastructure to the scanner – SOMATOM go.Up adapts to you, so installation costs stay low.





## Improved tube lifetime and reliable components

The SOMATOM go. platform is equipped with durable components – such as the Stellar detector – that deliver outstanding reliability to keep the scanner running smoothly for longer. In addition, experts from the Siemens Healthineers Support Center provide ad hoc support whenever needed and quickly help identify and resolve any issues that might occur via Siemens Remote Service.

The improved reliability of the SOMATOM go. platform also extends to the heart of the scanner: the Chronon® tube. Featuring a highly robust design and 8.75 MHU equivalent anode heat capacity with SAFIRE, this X-ray tube is built to surpass the performance of its predecessor. By choosing tube coverage on top of the embedded service package, our customers benefit from more uptime and fewer service costs.



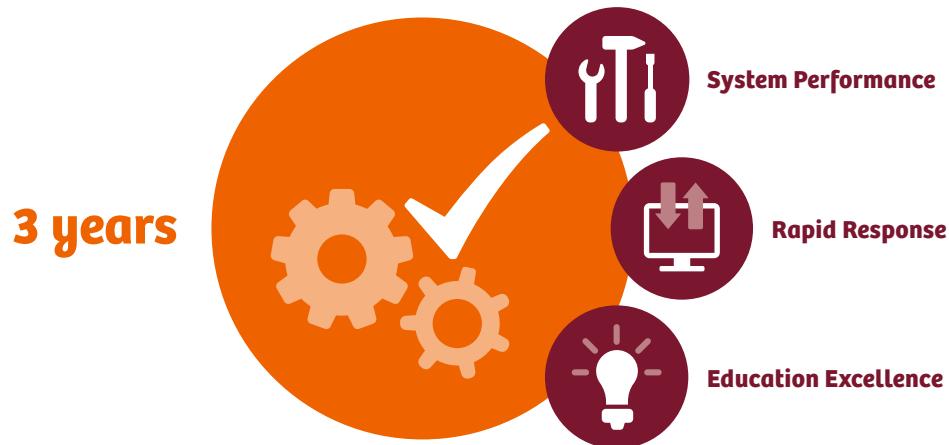
## Siemens Healthineers Connect Plan<sup>14</sup>

The Siemens Healthineers Connect Plan<sup>14</sup> is an all-new service plan that comes standard with the investment of SOMATOM go.Up. It fully utilizes the capabilities of the connection to our digital platforms – SRS, PEPconnect, LifeNet – and to our remote services. This allows you to receive seamless support, anytime. It covers the 2nd and 3rd year after system purchase and gives you the financial confidence to receive premium service, matching your total cost of ownership requirements.



## Maximize patient throughput

The tools of CT View&GO are also available in an optional second independent console for additional flexibility. This CT View&GO Workplace provides the ideal performance boost when higher throughput needs to be managed. Offering integrated cross-specialty viewing, and supported by a brand new hardware 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<sup>14</sup> in detail

Our service plan<sup>14</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>15</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.Up and the certified Siemens Remote Service 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>TM16</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>17</sup>

The purchase of SOMATOM go.Up 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.Up 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.

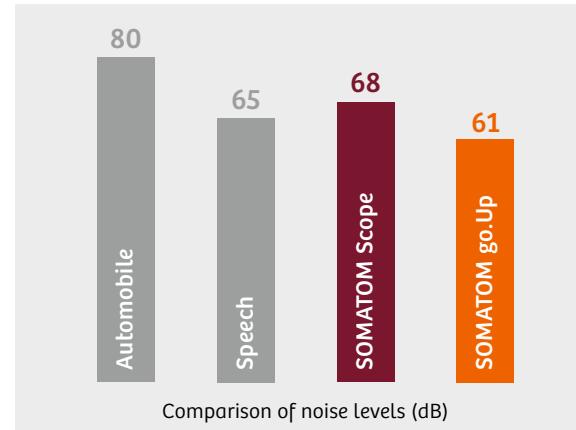
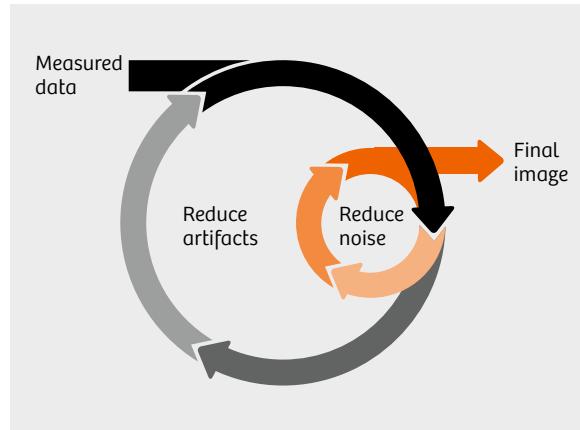
Stay on top in your profession with PEPconnect and make a difference in your patients' lives.





# Further highlights

SOMATOM go.Up combines technical solutions from high-end scanners with brand new innovations. Profit from proven Siemens Healthineers technology for advanced iterative reconstruction and gentle sound design – and discover practical new features.



## SAFIRE

SAFIRE (sinogram affirmed iterative reconstruction) is an iterative reconstruction algorithm that delivers excellent image quality at low doses<sup>10</sup>. It is fast, simple to use, and can be easily implemented into daily routine.

## Gentle voice and sound design

SOMATOM go.Up 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.Up with the High Performance Package, a bundle of software and hardware options to boost your performance.

## High Power 80

High Power 80 (high mA values up to 400 mA in 80 kV imaging) allows you to scan at 80 kV for enhanced iodine contrast and lower dose.

## iMAR

iMAR<sup>18</sup> (iterative metal artifact reduction) reduces artifacts in wide variety of clinical situations – for higher image quality.

## FAST Computers

FAST Acquisition Workplace (AWP) for more robust performance of CT View&GO, enabling a wider range of postprocessing functionalities.

## High speed 0.8 s

Increased volume coverage with a 20% faster rotation time (0.8 s) compared to the standard one, 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:** calcium scoring exams supported by an integrated ECG signal on the tablet.

## 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 .....	32 (64 with IVR)
Rotation times .....	up to 0.8 s
Tube .....	3.5 MHU (8.75 MHU equivalent value with SAFIRE <sup>10</sup> )
Power.....	32 kW (80 kW equivalent value with SAFIRE <sup>10</sup> )
High voltage .....	80, 110, 130 kV
mA .....	up to 400 mA (1000 mA equivalent value with SAFIRE <sup>10</sup> )
z-coverage .....	2.2 cm (32 x 0.7 mm)
Max. table load.....	up to 307 kg
Iterative reconstruction ..	SAFIRE <sup>10</sup>

## Innovative hardware

SOMATOM go.Up has a patient table with scannable range up to 200 cm that can hold up to 307 kg for bariatric patients. The table is equipped with newly designed accessories such as ① a paper roll holder, ② an infusion stand, and ③ RT positioning devices.





# Why Siemens Healthineers?

At Siemens Healthineers, we enable healthcare providers to achieve better outcomes at lower costs by expanding precision medicine, transforming care delivery, improving patient experience, and digitalizing healthcare.

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 5 million patients<sup>19</sup> globally every day. 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 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.

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

## Footnotes

- 1 *World health statistics 2016*
- 2 *United Nations, Department of Economic and Social Affairs, Population Division (2015)*
- 3 *European Society of Radiology. The consequences of the economic crisis in radiology, Insights Imaging (2015)*
- 4 *World Health Organization Global Health Expenditure database*
- 5 *Moreno, Courtney C. et al. Changing Abdominal Imaging Utilization Patterns: Perspectives From Medicare Beneficiaries Over Two Decades (2016)*
- 6 *Levin, David C. and Rao, Vijay M. Factors That Will Determine Future Utilization Trends in Diagnostic Imaging (20)*
- 7 *Ferrari VA, Whitman B, Blankenship JC, Budoff MJ, Costa M, Weissman NJ, et al. Cardiovascular imaging payment and reimbursement systems: understanding the past and present in order to guide the future. JACC Cardiovasc Imaging. 2014 Mar;7(3):324-32.*
- 8 *Moos SI, van Vemde DN, Stoker J, Bipat S. Contrast induced nephropathy in patients undergoing intravenous (IV) contrast enhanced computed tomography (CECT) and the relationship with risk factors: a meta-analysis. Eur J Radiol [Internet]. 2013 Sep [cited 2018 Jan 10];82(9):e387-99. Available from: [http://www.ejradiology.com/article/S0720-048X\(13\)00226-X/fulltext DOI: 10.1016/j.ejrad.2013.04.029](http://www.ejradiology.com/article/S0720-048X(13)00226-X/fulltext DOI: 10.1016/j.ejrad.2013.04.029)*
- 9 *Nijhof WH, Baltussen EJ, Kant IM, Jager GJ, Slump CH, Rutten MJ. Low-dose CT angiography of the abdominal aorta and reduced contrast medium volume: Assessment of image quality and radiation dose. Clin Radiol [Internet]. 2016 Jan [cited 2018 Jan 10];71(1):64-73. Available from: [http://www.clinicalradiologyonline.net/article/S0009-9260\(15\)00394-3/fulltext DOI: 10.1016/j.crad.2015.10.007](http://www.clinicalradiologyonline.net/article/S0009-9260(15)00394-3/fulltext DOI: 10.1016/j.crad.2015.10.007)*
- 10 *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.*
- 11 *Cinematic VRT is recommended for communication, education, and publication purposes, and is not intended for diagnostic reading. Not for distribution/use in the U.S.*
- 12 *IMV. 2016 CT market outlook report. Des Plaines, IL: IMV; 2016.*
- 13 *American Hospital Association [Internet]. Chicago, IL: American Hospital Organization; 2017. Underpayments by Medicare and Medicaid, Fact Sheet [cited 2017 Sep 27]; [p.2]. Available from: <http://www.aha.org/content/16/medicaremedicaidunderpm.pdf>*
- 14 *Powered by Siemens Remote Service. Siemens Healthineers Connect Plan is subject to regional adaptions/restrictions.*
- 15 *Excluding X-ray tube and tablet. Additional tube and tablet coverage solutions are optionally available.*
- 16 *Requires LifeNet access – subject to country-specific availability.*
- 17 *PEPconnect availability is subject to regional restrictions.*
- 18 *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.*
- 19 *Siemens AG, "Sustainable healthcare strategy – Indicators in fiscal 2014", page 3–4*



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