SOMATOM go.Up

Datasheet for 64-slice configuration
syngo CT VA20

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

siemens.com/somatom-go-up

SIEMENS
Healthineers

Make success your daily business

The SOMATOM go. platform

In CT imaging today, it's 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.

Expand your successful CT business

SOMATOM go.Up

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.

SOMATOM go.Up features a 2.2 cm Stellar detector able to deliver up to 64 reconstructed slices with interleaved volume reconstruction (IVR) – for faster scanning, fewer motion artifacts, and shorter breath-hold times.

Highlights

The mobile workflow

A central element of optimizing performance and generating daily revenue is an entirely new approach to operating the scanner. Built around a new mobile workflow, the SOMATOM go.Up features a line-up of innovative solutions – tablet, remote control, camera, and a new work-place design – that bring an unparalleled level of flexibility and mobility to daily CT routines. The solutions also help to enhance patient comfort for potentially higher levels of patient satisfaction.

The GO technologies

Another important factor contributing to high performance is workflow automation. The 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 factors key to running a successful business.

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[1]. 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.

Tin Filter

Inherited from high-end dual source scanners, the Tin Filter (Sn) cuts out lower energies to reduce dose and optimizes contrast 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 extremely useful in orthopedic examinations.

[1]*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.*

Highlights

Siemens Healthineers Connect Plan[1]

Our service model is an entirely new approach to improving scanner uptime, affording you financial certainty from day one. With many aspects of service – including spare parts[2] – 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 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™[3] 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.

As part of the educational excellence, the go.Up gives you access to blended learning and performance support activities on PEPconnect, the industry's first online personalized education experience. 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.

3 years

System Performance

Rapid Response

Education Excellence
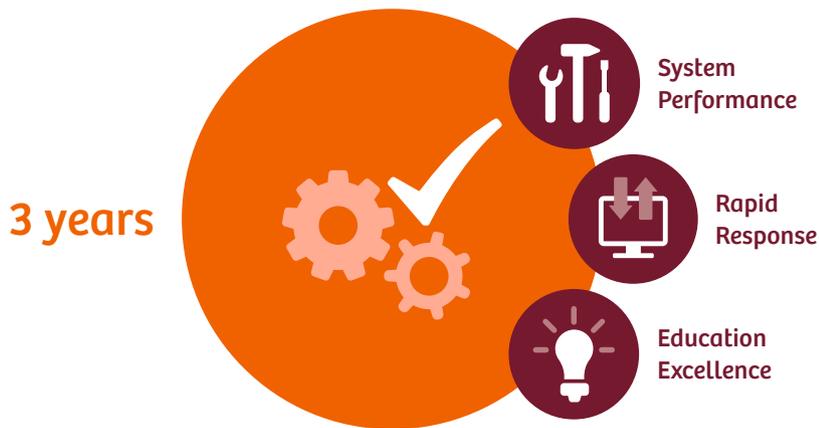
[1] *Powered by Smart Remote Services. Siemens Healthineers Connect Plan is subject to regional adaptions/restrictions.*
[2] *Excluding X-ray tube and tablet. Additional tube and tablet coverage solutions are optionally available.*
[3] *Requires LifeNet access – subject to country specific availability.*

System Configuration

Standard system hardware	• 1.0, 1.5 s rotation time • Multislice UFC (Ultra Fast Ceramic) detector • 70 cm bore size • 80 kW max. equivalent generator power (with SAFIRE[1]) • Chronon™ X-ray tube • Tin Filter • FAST IRS • CT patient table (227 kg / 500 lbs table load) • 9 fps IR, 13 fps FBP
Hardware options	• 0.8 s rotation time • Patient table foot switch • X-ray foot switch • 307 kg patient table • Dual 21" / 53 cm flat screen monitor with dual display functionality • Integrated Injector Arm
Standard workplace	• 23" / 58 cm flat screen monitor • External USB 3.0 disks support

Optional High Performance Package	• FAST AWP
	• High Power 80
	• High speed 0.8 s
	• iMAR
	• Recon&GO including:
	  - Inline Spine Ranges
	  - Inline Radial and Parallel Rib Ranges
	• CT View&GO including:
	  - Spine Ranges
	  - *syngo* CT CaScoring
	• CARE Contrast

Standard system software and applications	• *syngo* Examination • *syngo* Archiving & Network • SureView™ • IVR (Interleaved Volume Reconstruction) • HD FoV Pro[2] • Dual Spiral Dual Energy Acquisition • Video Capture and Editing Tool • Screen recorder • Exam Designer • WorkStream4D™ (direct 3D-recon) • Adaptive Signal Boost • *syngo* security package • IT Whitelisting

[1] *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.*

[2] *Scans on a Gammex 467 phantom with water inserts show HU accuracy of ± 20 HU and a skin line accuracy of ± 2 mm up to 70 cm. Clinical results may vary. Data on file.*

System Configuration

Standard GO technologies	• Scan&GO
	• Check&GO incl. FAST ROI
	• Recon&GO including:
	  - Inline Anatomical ranges
	  - Inline Table removal
	  - Inline Bone removal
	  - Inline Vessel Ranges
	  - Multi Recon
	• CT View&GO including:
	  - Vessel Extension
	  - Endoscopic View
	  - Lung Lesion Segmentation
	  - Diameter / WHO area
	  - ROI HU Threshold
	  - Dual Energy ROI
	  - 2D and 3D (MPR, MIP, VRT)
	  - Evaluation tools
	  - Filming
		Standard CARE applications	• CARE Child
			• CARE Dose4D™
			• CARE Topo
			• CARE Profile
			• CARE Filter
			• CARE Bolus CT
			• CARE Test Bolus
			• X-CARE
			• SAFIRE (Sinogram Affirmed Iterative Reconstruction)

		Optional CARE applications	• CARE Contrast
		Optional system software and packages	• *syngo*.CT Dental • *syngo*.CT Neuro Perfusion • Osteo @ CT View&GO • Neuro DSA @ CT View&GO • Guide&GO CT-Guided Intervention Package
Standard FAST applications	• FAST kV • FAST Planning • FAST ROI • FAST Contact	**Optional hardware and software applications for Radiation Therapy**	• Patient table RT • RTP Excellence package • Respiratory Motion Management • RT Image Suite Sim
Optional FAST computer	• FAST AWP • Ultra-FAST IRS	**Standard software applications for Radiation Therapy**	• HD FoV Pro[1]

[1]*Scans on a Gammex 467 phantom with water inserts show HU accuracy of ± 20 HU and a skin line accuracy of ± 2 mm up to 70 cm. Clinical results may vary. Data on file.*

System Hardware

| Gantry	
Aperture	• 70 cm / 27.6″
Depth	• 84 cm / 33″
Distance scan plane to gantry cover	• 25 cm / 9.84″ • The short distance from the gantry front to the scan plane allows for easy operator access
Distance focal spot to isocenter	• 53.5 cm / 21.1″
Distance focal spot to detector	• 98.3 cm / 38.7″
Scan field	• 50 cm / 19.7″ • 70 cm / 27.6″ with HD FoV Pro[1]
Physical tilt	• up to ± 30 degrees
Rotation time	• 0.8[2] s, 1.0 s, 1.5 s
Halo (incl. 2D Camera, Visual countdown, Mood Lighting) 	• 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.
Three laser light markers	• Coronal, sagittal, transversal laser light showing the isocenter position of the scan plane.
Integrated injector arm[3] 	• The unique gantry-mounted injector arm 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.

Tube Assembly	
Tube	• Chronon™ ball bearing X-ray tube
Tube current range	• 13–240 mA • 13–400[2] mA • Max. tube current equivalent to 600/1,000[2] mA utilizing SAFIRE
Tube voltage	• 80 kV, 110 kV, 130 kV, Sn110 kV, Sn130 kV
Tube anode heat storage capacity	• 3.5 MHU; equivalent to 8.75 MHU with SAFIRE • With iterative reconstruction technology the same clinical results can be achieved with less dose at maintained image quality. Therefore when using less dose the heat storage fills up more slowly.
Tube cooling rate	• 567 kHU/min
Focal spot size according to IEC 60336	• 0.8 x 0.4 / 8° • 0.8 x 0.7 / 8°
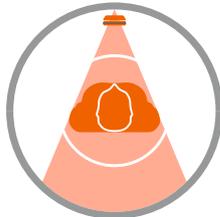
Tin Filter	
	• Inherited from high-end dual source scanners, the Tin Filter (Sn) cuts out lower energies to reduce dose and optimizes contrast at the interface between soft tissue and air.

[1] *Scans on a Gammex 467 phantom with water inserts show HU accuracy of ± 20 HU and a skin line accuracy of ± 2 mm up to 70 cm. Clinical results may vary. Data on file.*
[2] *Optional*
[3] *Optional. Availability depends on country-specific regulatory approval and release.*

System Hardware

Generator	
Max. power	• 32 kW; equivalent to 80 kW with SAFIRE

Data Measurement System	
UFC (Ultra Fast Ceramics)	• The Stellar detector keeps electronic noise low, increases dose efficiency, and improves spatial resolution. • Speed and efficiency based on Siemens Healthineers' proprietary scintillator material with ultra-short decay, extremely low afterglow and high absorption for optimized image quality and high dose efficiency.
Max. number of slices/rotation	• 32 (acquired slices) • 64 (reconstructed slices)
Number of detector rows	• 32
Number of detector elements	• 24,576
Number of projections 1 s/360°	• 1,536
Sequence acquisition modes	• 32 x 0.7 mm, Sn32 x 0.7 mm, 1 x 10 mm, 1 x 5 mm
Spiral acquisition modes	• 32 x 0.7 mm, Sn32 x 0.7 mm
Adaptive Signal Boost	• The Adaptive Signal Boost amplifies low signal areas of the CT data when high attenuation is present – such as when imaging obese patients or patients with metal implants.

Acquisition Workplace (AWP)	

Computer integrated into the gantry	• Hardware integrated into the gantry to:
	  - enable Flexible Room Design (see Installation part)
	  - minimize the elements of the new workplace design to a monitor, keyboard, mouse and the control box

High performance computer CPU	• Intel Xeon 3.3 GHz[1]
RAM	• 16 GB DDR4 RAM
Graphics card	• Intel® HD Graphics P530[1]
Hard disk	• 480 GB SSD

Patient Table	
Max. table load	• 227 kg / 500 lbs • 307 kg / 676 lbs[2]
Max. table feed speed	• 200 mm/s
Vertical table travel range	• 46–88.5 cm / 18"–35" • 47.5–90.0 / 18.7"–35.4"[2] • 48.2–90.7 cm / 19"–35.7"[3]
Vertical travel speed	• 28.3 mm/s
Scannable range	• 160 cm / 63" with patient table extension[4] • 200 cm / 63" with patient table extension[2/4]
Patient table foot switch[4]	• Foot Switch located on the bottom edge of the patient table allowing table positioning. • Speeds up patient preparation and keeps the operator hands sterile.
X-ray foot switch[4]	• Foot switch for triggering scans from the examination room

[1]*Or equivalent*
[2]*Optional with the 307 kg patient table*
[3]*Optional with the RT patient table*
[4]*Optional*

New Workplace Design

Thanks to gantry-integrated reconstruction and acquisition systems, 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.

Image Reconstruction	
Real-time display	• Real-time image display (512 x 512) during spiral acquisition on the workplace • Wireless transfer of images for preview on the tablet. Transfer starts immediately after the end of scanning
Slice thickness	• 0.6–10 mm
Recon field	• 5–50 cm / 1.9"–19.69" • 5–70 cm / 1.9"–27.6" with HD FoV Pro[1]
Maximum reconstruction rate	• 13 fps for FBP, 9 fps for IR • 23 fps for FBP, 20 fps for IR[2]
Recon matrix	• 512 x 512
HU scale	• - 8,192 to + 57,343
Advanced algorithms	• Iterative Beam Hardening Correction (iBHC) for reduction of beam hardening artifacts, e.g. in head images • Large selection of reconstruction kernels to adapt to specific clinical needs
Wide range of freely selectable slice thickness for prospective and / or retrospective reconstruction	

Standard monitor	• 23" / 58 cm flat screen • 1,920 x 1,080 resolution
Additional monitor[2]	• Yes
Dual monitor[2]	• Yes
Image storage	• 38 GB, up to 75,000 images • 150 GB, up to 300,000 images[2]
Additional storage	• External USB 3.0 disks for quick and easy raw data storage are supported

[1] *Scans on a Gammex 467 phantom with water inserts show HU accuracy of ± 20 HU and a skin line accuracy of ± 2 mm up to 70 cm. Clinical results may vary. Data on file.*
[2] *Optional*

Standard System Software and Applications

syngo Examination

Exam Designer	
Easy and intuitive way to change and manage scan protocols	

Topogram	
Length	• 128–1,600 mm / 5–63" with table extension[1]
	• 128–2,000 mm / 5–78.7"[1/2] with table extension[1]
Scan times	• 1.36–8.76 (10.76)[1/2]s
Scan speed	• 200 mm/s
Views	• a.p., p.a., lateral
Real-time topogram	
Manual interruption possible once desired anatomy has been imaged	

Patient Communication	
Integrated patient intercom	
Automatic Patient Instruction (API)	• Freely recordable
	• 54 API text pairs
	• Presets in eighteen languages available

Sequence Acquisition	
Reconstructed slice widths	• 1.5, 2, 3, 4, 5, 6, 7, 8, 10 mm
Partial scan times (240°)	• 0.54[1], 0.67, 1.01 s
Scan times (full scan)	• 0.8[1], 1.0, 1.5 s
Acquisition with or without table feed	
Dynamic Serio Scan	
Automatic clustering of scans	

Multislice Spiral Acquisition	
Reconstructed slice widths	• 0.6, 0.8, 1, 1.5, 2, 3, 4, 5, 6, 7, 8, 10 mm
Temporal resolution	• 400 ms[1]
	• down to 200 ms[1] (bisegment)
Scan times full scan (360°)	• 0.8[1], 1.0, 1.5 s
Reconstruction increment	• min. 0.1 mm
Pitch factor	• 0.09–1.5
Spiral scan time	• max. 300 s
Scan length	• max. 160 cm / 63" with patient table extension[1]
	• max. 200 cm / 78.7" with patient table extension[1/2]

[1]Optional
[2]Optional with the 307 kg patient table

Standard System Software and Applications

syngo Examination

WorkStream4D™

4D workflow with direct generation of axial, sagittal, coronal, or double-oblique images from standard scanning protocols

Elimination of manual reconstruction steps

Reduction of data volume, since virtually all diagnostic information is captured in 3D slices

Patient Registration

Direct input of patient information on the workplace immediately prior to scan

Pre-registration of patients at any time prior to scan

Special emergency patient registration (allows examination without entering patient data before scanning)

Transfer of patient information from HIS/RIS via DICOM Get Worklist

IVR (Interleaved Volume Reconstruction)

IVR is a method to use the measured data as efficiently as possible to improve the spatial sampling in z-direction by reconstructing 64 slices for all spiral scans independent of pitch.

HD FoV Pro[1] (Field of View)

Special image reconstruction algorithms using a FoV up to 70 cm that provide visualization outside of the normal scan FoV.

Dual Spiral Dual Energy

The included *syngo* Single Source Dual Energy Scan mode feature offers the possibility to acquire two spiral data sets in sequence at different energies. Two different kV levels are utilized to combine tissue information. With the dual energy ROI viewer it is possible to evaluate the behavior of different tissues at different energies as an indication of their atomic composition.

syngo Security Package

Provides functionality for user management and flexible access control for patient data

IT Security – Whitelisting

Whitelisting is a widely used security process in IT, designed to secure a system from viruses and malware. Working in the opposite way to commonly known blacklisting, the system knows what state it is delivered in and will ignore all other outside threats.

SureView™: Siemens Healthineers' Patented Solution for Multislice CT Reconstruction

Pitch independent image quality
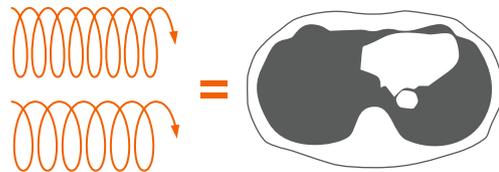
Excellent for clinical workflow: Forget about compromises in your clinical workflow. Just specify the slice thickness in your protocols according to your clinical needs. SureView automatically takes care of providing excellent volume image quality – with exceptional performance.

Multiply your clinical performance with SureView: High-quality imaging at any scanning speed. SureView allows the CT scanner to automatically select the necessary pitch value to achieve the coverage and scan time defined by you, while keeping selected slice thickness and image quality.

Auto Field of View Adaption

When positioning the scan range, the width of the range is automatically adapted to cover the whole body of the patient.

CINE Display

Display of image sequences

Automatic or interactive with mouse control

Max. image rate: 30 frames/s

[1]Scans on a Gammex 467 phantom with water inserts show HU accuracy of ± 20 HU and a skin line accuracy of ± 2 mm up to 70 cm. Clinical results may vary. Data on file.

Standard System Software and Applications

syngo Examination

teamplay

With SOMATOM go.Up 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.

With teamplay you can distribute one master protocol to all your SOMATOM go. scanners – for consistent quality.

SOMATOM go.Up is compatible and ready for teamplay. For more information and experiences please visit: www.siemens.com/teamplay

syngo Archiving & Networking

|	
Screen Recorder	• Integrated solution for imaging and visualization of 4D information, allowing the generation and editing of video files for improved diagnoses, recording, and teaching. A wide range of multimedia formats are supported, e.g., AVI, Flash (SWF), GIF, QuickTime (MOV), streaming video.
Image Transfer / Networking	• Interface for transfer of medical images and information using the DICOM standard. Facilitates communication with devices from different manufacturer. • DICOM Storage (Send/Receive) • DICOM Query/Retrieve • DICOM Basic print • DICOM Get Worklist (HIS/RIS) • DICOM SR viewer • DICOM Storage Commitment • DICOM Viewer on CD/DVD

Standard GO Technologies

Scan&GO[1]

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.

Check&GO
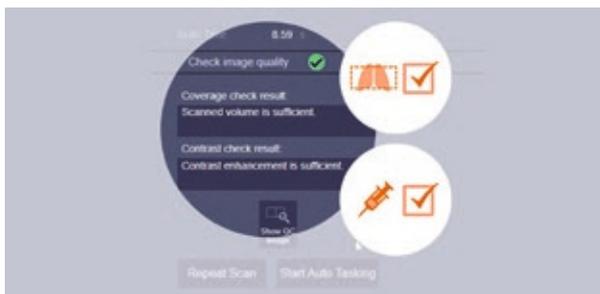
This intelligent algorithm flags up problems with coverage or contrast distribution as they occur. Correct issues on the go, prevent subsequent errors in multiphase scans, and avoid archiving suboptimal images.

Check&GO is available both on the AWP and on the Scan&GO tablet application.

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.

Recon&GO including:

Multi-recon	• Simultaneous reconstruction of different MPR orientations or image impressions (kernel and window settings)
Inline Anatomical Ranges	• Powered by ALPHA (Automatic Landmark Parsing of Human Anatomy), this technology automatically recognizes anatomical landmarks in the acquired images and creates ready-to-read standard orientations for different joints and body regions
Inline Table and Bone Removal	• Zero-click bone-free VRT reconstruction that facilitates a precise vascular assessment by visualizing blood vessels without interfering anatomical structures
Inline Vessel Ranges	• Zero-click vessel centerline extraction and anatomical labeling of the main vessels with display of Curved Planar Reconstruction to simplify reporting of findings and stenosis assessment

[1]Availability depends on country-specific approval and release of the wireless devices

Standard GO Technologies

CT View&GO
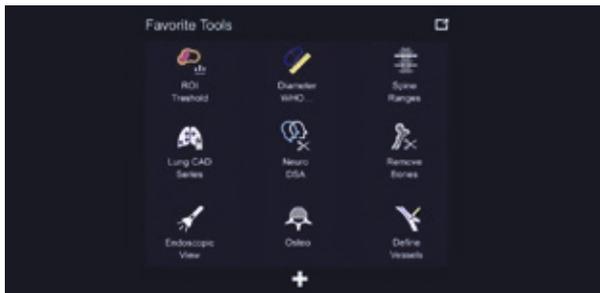
As an all-in-one, cross-specialty viewing solution, CT View&GO provides a large variety of clinical applications and tools for smooth reading in just one workflow

Customizable user interface, through a Favorite Toolbox

Automatic distribution and filming of images and results

Window width and center freely selectable

Single window

Multiple window settings for multi-image display

Organ-specific window settings, e.g., for soft tissue and bones

Image zoom and pan

Evaluation Tools @ CT View&GO

Parallel evaluation of more than 10 Regions of Interest	• Circle • Irregular • Polygonal
Statistical evaluation	• Area / volume • Standard deviation • Mean value • Min. / max. values
Profile cuts	• Horizontal • Vertical • Oblique
Distance measurement	
Angle measurement	
Online measurement of a 5 x 5 pixel size ROI	
Freely selectable positioning of coordinate system	
Crosshair	
Image annotation and labeling	

Filming and Printing @ CT View&GO

Filming	• Digital film documentation, connection to a suitable digital camera • Connection via DICOM Basic print • Automatic filming • Interactive virtual film sheet • Customizable film formats with up to 64 images • Filming parallel to other activities • Independent scanning and documentation • Freely selectable positioning of images onto film sheet • Configurable image text
Printing	• Documentation on postscript printer supported

Standard GO Technologies

3D Visualization @ CT View&GO

Real-time MPR	• Real-time multiplanar reformatting of secondary views • Variable slice thickness (MPR thick, MPR thin) and distance with configurable default values • Viewing perspectives - Sagittal - Coronal - Oblique - Double oblique - Freehand (curvilinear)
MIP and minIP	• MIP: Maximum Intensity Projection • MinIP: Minimum Intensity Projection • Thin MIP function for projection within a small slab to focus on particular vascular structure
***syngo* VRT (Volume Rendering Technique)**	• Advanced 3D application package for the optimal display and differentiation of different organs through independent control of color, opacity, and shading

Post-processing applications @ CT View&GO

Table and Bone Removal	• Fast accurate presentation of subtracted CT Angiographic data sets
Vessel Extension	• Set of tools and layouts for guided creation of CPR (Curved Planar Reconstructions) for enhanced vascular assessment – for aneurysms or peripheral artery disease, for instance • Comprehensive length and diameter measurements
Endoscopic View	• Virtual Endoscopy software enabling visualization of airways and intestines
Diameter / WHO area	• Longitudinal lesion measurements and WHO for enhanced clinical decisions in oncology
ROI HU Threshold	• Evaluation and display of tissue densities within a certain HU range. This can help to quantify fat or assess lesions for hypodense areas as a possible indicator of therapy response.
Dual Energy ROI	• Basic evaluation of the behavior of different tissues at different energies as an indication of their atomic composition
Lung Lesion Segmentation	• The Lung Lesion Segmentation tool in CT View&GO performs an automated segmentation of solid and subsolid lesions in lungs, providing the volume and diameter according to the LungRADS guidelines.

Standard FAST Applications

FAST Planning @ AWP

It detects the ROI based on organ characteristics, and sets the scan parameters accordingly. The automatic parameter settings provide precise organ coverage without over scanning, and limit the need for rescans due to incorrect positioning. In addition, this function can be used in critical clinical situations where there is no time for extensive manual preparation.

FAST Planning @ Scan&GO tablet

In addition to the Acquisition Workplace (AWP), FAST Planning is also part of the Mobile Workflow as it is integrated in the Scan&GO tablet user interface. The automatic and precise organ coverage leverages the mobility of the user as FAST Planning is applied on the topogram image which is wirelessly sent from the gantry computers to the tablet. The user can also decide if he would like to adjust further the scan plane by using the touch screen on the tablet and define the new axial and transaxial ranges manually.

FAST Contact[1]

FAST Contact is the easiest way to contact our service experts directly from the scanner console for technical and clinical application support. LifeNet – our fleet management tool – also tracks and archives service tickets generated with FAST Contact.

FAST ROI

The FAST ROI feature automatically identifies regions of interest and calculates HU in the aorta and the pulmonary trunk for automatic triggering of bolus-tracking examinations.

FAST IRS

Powerful Image Reconstruction System that allows faster pre-processing and reconstructions of the CT data, with up to 13 images/second

FAST kV

Automatic mAs adaptation to keep the proper correlation between kV and mAs performed by the scanner

[1]LifeNet and FAST Contact is subject to country specific availability.

Standard and Optional CARE Applications

CARE Child

Special pediatric clinical protocols with 80 or 110 kV selection and a wide range of mAs settings. The X-ray exposure is adapted to the child's (and small adult's) weight and age, substantially reducing the effective patient dose.

CARE Filter

Specially designed X-ray exposure filters installed at the tube and the collimator for protocol individual optimization of patient dose and image quality

Permanent filtration of X-ray tube assembly	• Equivalent to 5.5 mm Al @ 140 kV
Tube collimator	• Equivalent to 0.5 mm Al in the isocenter

CARE Bolus CT

Scan mode for contrast bolus triggered data acquisition

Significant improvement of the planning procedure by enabling an optimum spiral scan start after contrast injection

The procedure is based on repetitive low dose monitoring scans at one slice level and analysis of the time density curve in an ROI (Region of Interest).
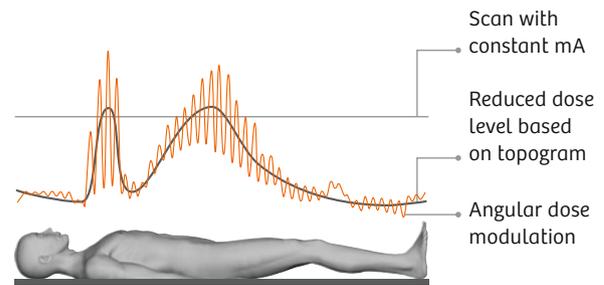
CARE Bolus CT allows the planning and the execution of contrast workflows within the Scan&GO user interface.

CARE Topo

Real-time topogram

Manual interruption possible once desired anatomy has been imaged

CARE Dose4D™

Scan with constant mA

Reduced dose level based on topogram

Angular dose modulation

Automated tube current adjustment for optimum diagnostic image quality at lowest possible dose, depending on patient size and anatomy

Fully automated dose management for adults and children

X-CARE

Reduce the organ dose for dose-sensitive body parts while maintaining image quality. Organ dose reduction for radiation-sensitive peripheral organs, e.g., eye lenses. Keep the average $CTDI_{vol}$ constant with automated tube current adjustments and use by simply selecting the dedicated right protocols.

Protocol Password Protection

Prevent unauthorized access to scan protocols and avoid unauthorized modifications.

DICOM SR Dose Reports

DICOM structured file allows for the extraction of dose values ($CTDI_{vol}$, DLP) to create transparency and document dose values.

DoseLogs

Whenever a limit exceeds the set up reference dose levels, automatically a report is created on the system. The report can for example be used for audit purposes.

Standard and Optional CARE Applications

Dose Notification

The software checks the dose values per chronicle entry. May help to protect from over-radiation and warn the operator in case set dose thresholds are exceeded.

Dose Alerts

The software checks the accumulated dose per z-position. May help to protect from over-radiation and warn the operator in case set dose thresholds are exceeded.

CARE Contrast[1]

Facilitates contrast enhanced clinical workflow by synchronizing CT scan and contrast media injection using a single button control. It speeds up clinical workflow and allows efficient and confident monitoring of patients during contrast media injection and scan start.

SAFIRE (Sinogram Affirmed Iterative Reconstruction)
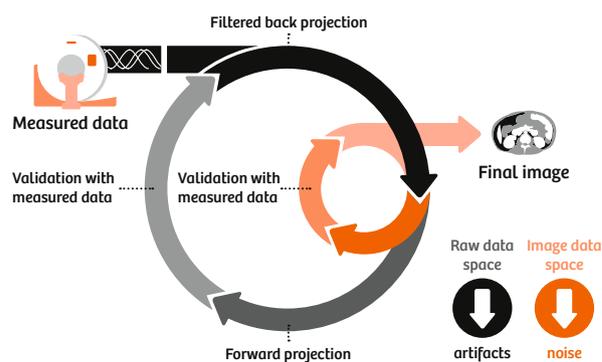
Siemens Healthineers' next generation iterative reconstruction technology. SAFIRE is a unique method that reduces image noise without loss of image quality or detail visualization by introducing multiple iteration steps now also in the raw-data in the reconstruction process. As determined from SOMATOM Definition Flash data, SAFIRE enables up to 60% dose reduction[2].

SAFIRE is easily incorporated into daily routine to maintain high patient throughput thanks to an excellent reconstruction speed.

[1]*Optional*
[2]*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.*

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 allows you to scan with 400 mA at 80 kV for enhanced iodine contrast

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 contrast increase is extremely beneficial for contrast-enhanced studies.

High Speed 0.8 s

The High Speed 0.8 s mode adds increased volume coverage with a faster rotation time of 0.8 seconds, providing extended clinical capabilities. With this option a longer spiral scan can be acquired in the same scan time or the same volume and the same slice thickness can be scanned in less time.

CARE Contrast

Facilitates contrast enhanced clinical workflow by synchronizing CT scan and contrast media injection using a single button control. It speeds up clinical workflow and allows efficient and confident monitoring of patients during contrast media injection and scan start.

iMAR
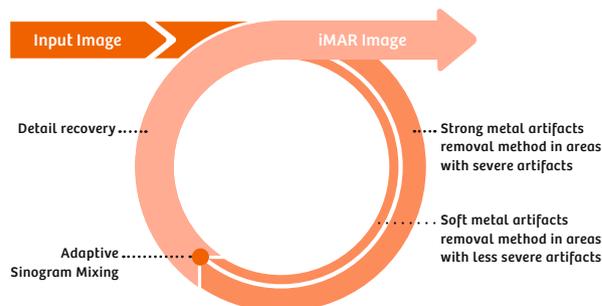
iMAR is a metal artifact reduction algorithm based on the Adaptive Sinogram Mixing. The Adaptive Sinogram Mixing combines a strong metal artifact removal method in areas with severe artifacts and a soft correction in areas with less severe artifacts. The result is an outstanding image quality with metal artifacts removed while valuable information remains even for challenging cases like spine implants, pacemakers, dental fillings and neuro coils.

Compatible with HD FoV Pro[1], extended CT scale and dose reduction features

Simple user interface

FAST AWP

Powerful Acquisition Workplace hardware that allows faster post processing of CT data with CT View&GO

Ultra-FAST IRS

Ultra-FAST IRS for further increased reconstruction performance and workflow optimization, with up to 23 images/second reconstructions. Take advantage of even more Recon&GO and CT View&GO workflows running faster in the background, while you take care of your patients.

syngo CT CaScoring

This application provides total and relative Calcium Scoring with Coronary Age calculation based on trial data. Supported by an ECG signal integrated into the tablet.

[1]*Scans on a Gammex 467 phantom with water inserts show HU accuracy of ± 20 HU and a skin line accuracy of ± 2 mm up to 70 cm. Clinical results may vary. Data on file.*

Optional High Performance Package

Recon&GO

Inline Radial and Parallel Rib Ranges

Zero-click reconstruction of radial and parallel rib specific visualization that adapts the rib cage anatomy according to the radiologist's reading needs – displaying all ribs spread out in one plane. Automated rib labelling and numbering

Inline Spine Ranges

Zero-click reconstruction of anatomically aligned spine reconstructions. The software detects and labels vertebrae within a predetermined scan area, and calculates their position for anatomically correct image reconstruction. This delivers time savings for a complete spine reconstruction, while reducing the risk of mislabeling associated with manual preparation.

CT View&GO

Spine Ranges

Guided reconstruction of anatomically aligned spine Curved Planar Reconstructions (CPR)

Automatic detection and labeling of vertebrae

Optional System Software and Applications

*syngo.*CT Dental[1]

Allows reformatting panoramic views and paraxial slices through the upper and lower jaw, and enables the display and measurement of mandibular bone structures (even on a 1:1 scale) as the basis for OR planning and oral surgery.

CT Osteo @ CT View&GO

Non-invasive measurement of the bone mineral density of the lumbar spine to help early diagnosis of osteopenia and osteoporosis, and to assess the effectiveness of treatment. Osteo CT measurements are standardized to the ESP Phantom (ESP: European Spine Phantom). Includes table mat and reference phantom for Osteo CT studies.

Neuro DSA @ CT View&GO[1]

By enabling single-click, bone-free visualization, Neuro DSA (digital subtraction angiography) allows quick and easy neurovascular assessment without increasing dose, as it uses the standard, non-enhanced head scan for the subtraction.

*syngo.*CT Neuro Perfusion[1]

Available both as guided or automated (Auto Stroke) workflow, visualizes blood perfusion in the brain. This can help in acute ischemic stroke to estimate the extent of tissue at risk to infarct (penumbra) that is potentially salvageable with further therapy. Allows for quantitative evaluation of fast Dynamic serio sequence. It enables a quick and reliable assessment of the type and extent of cerebral perfusion disturbances in three dimensions, from one set of dynamic CT images.

Guide&GO[2]

The first tablet- based solution for CT-guided inter-ventions. 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.

It features:
- CT-guided intervention workflow supported by the Guided Path in the Scan&GO tablet user interface
- Image based navigation for fast location of the slice target position
- Autorepeat functionality for the sequential scans
- iMAR removes or mitigates artifacts in a wide variety of clinical situations.[3]
- Toggle functionality between predefined window settings
- Laser cross hair visualization
- Tin Filter low dose protocols for spiral scans
- Intuitive tools at the tablet:
  - Zoom/Pan
  - Window presets
  - Free windowing
  - Distance measurements
  - Show/Hide graphics
- Pleurical patient table side rails
- Goose neck tablet and remote control holders for improved ergonomics

[1] *Requires FAST AWP or High Performance Package*
[2] *The tablet application is intended as an orientation aid for needle path planning or needle position monitoring. The tablet display is not intended to be used for diagnostic imaging. Refer to the user documentation for verification of the results.*
[3] *Requires iMAR or High Performance Package*

Optional System Software and Applications

Lung CAD Package	
Inline Lung CAD	• Zero-click Lung CAD (Computer Aided Detection) series reconstruction, designed as second reader tool to assist radiologists in the detection of pulmonary nodules during review of CT examinations of the chest • Detection of solitary nodules, as well as those adjacent to vessels and pleural surfaces
Lung CAD @ CT View&GO	• Lung CAD (Computer Aided Detection) is a fully automated, computer assisted second reader tool, designed to assist radiologists in the detection of pulmonary nodules during review of CT examinations of the chest. • Lung CAD potentially makes results more objective and consistent, and shortens the radiologists' learning curve since the skill in interpreting diagnostic images may vary among interpreting physicians. • Detection of solitary nodules, as well as those adjacent to vessels and pleural surfaces

Hardware and Software Applications for Radiation Therapy

Radiation Therapy	
SOMATOM go.Up configuration is very well suited for Radiation Therapy, with its ergonomic flared gantry opening for easy patient positioning	
Patient Table RT[1]	• Dedicated patient table fully compliant with AAPM TG-66, compatible with third party companies carbon-fiber overlay such as Quantum from Qfix
RTP Excellence package[1]	• Therapy kit that optimizes the RTP installation process
HD FoV Pro[2] (Field of View)	• Special image reconstruction using a FoV of up to 70 cm algorithms that provide visualization outside of the normal scan FoV

Respiratory Motion Management[1]	
4D Acquisition & Reconstruction	• Advanced 4DCT/respiratory gating package that allows for retrospective acquisitions • Acquire, reconstruct, generate MIP, minIP, and AverageCT • Compatible with multiple respiratory gating hardware devices
4D Image assessment and contouring	• Supports 4D image review and contouring. Contouring propagation (i.e. contouring target volume on 1 phase and propagate to other phases) • Semi-automatic ITV generation and calculation of the tumor trajectory with mid ventilation phase • Postprocessing (image creation) • Direct4D for creation of tMIP, tminIP, AverageCT • Deformable registration

[1]*Optional*
[2]*Scans on a Gammex 467 phantom with water inserts show HU accuracy of ± 20 HU and a skin line accuracy of ± 2 mm up to 70 cm. Clinical results may vary. Data on file.*

Hardware and Software Applications for Radiation Therapy

RT Image Suite Sim[1]

RT Image Suite Sim is a dedicated RT software that is designed to make simulation, image assessment, and contouring easier and better integrated. Work more efficiently and comfortably with an efficient, flexible, and well integrated tool

Patient marking features	• Reference point and isocenter management, and display of laser crosshairs on volume rendering of patient skin with Virtual Laser View • Direct Laser Steering for compatible LAP lasers, DICOM transfer of coordinates for LAP lasers and text-file based transfer of coordinates for other laser manufacturers
Image handling features	• Rigid image registration including automatic registration of images, Region-of-Interest based registration, multiple registrations per image pair, export of registration matrix and registered image series • Simple integration of multiple images into the contouring workflow with display of up to 4 images series over two panels (2 series + 2 fused series) and parallel contouring on multiple images
Contouring features	• The application supports image review and contouring on CT, MR, PET, PET-CT, CBCT, 4D CT, time-resolved CT / MR images (e.g., perfusion) • Fast and efficient contouring with 3D contouring, adaptive smart brush, contour cropping, contour preview, contour re-size, organ templates
AutoContouring	• The software detects and contours organ at risk within a predetermined scan area • Model based (9 organs) and Atlas based (10 organs) for organs at risk are available
Beam Placement	• Beam definition (manual or automatic tools), MLC configuration to define the default field size • Auto Beam Adjustment according to the tumor volume, Nudge tool to adjust the beam shape on DRR

[1]Optional

Image Quality

Low-contrast Resolution	
Low-contrast resolution is the ability to see …	• a small object • with a certain contrast difference • on a particular phantom • with a particular dose (CTDI$_{vol}$)

Phantom	CATPHAN (16 cm)
Object size	• 3 mm
Contrast difference	• 3 HU
CTDI$_{vol}$ (32 cm)	• 12.84 mGy
Technique	• 1.0 s, 10 mm, 130 kV

Phantom	CATPHAN (20 cm)
Object size	• 5 mm
Contrast difference	• 3 HU
CTDI$_{vol}$ (32 cm)	• 12.84 mGy
Technique	• 1.0 s, 10 mm, 130 kV

Isotropic Resolution

Isotropic voxels using Siemens Healthineers' proprietary SureView technology

High-contrast Resolution	
50% MTF	• 12.0 lp/cm (± 10%)
10% MTF	• 14.6 lp/cm (± 10%)
2% MTF	• 15.1 lp/cm (± 10%)
Technique	• Tungsten wire in air • 105 mA, 130 kV, 1.5 s, 5 mm

Homogeneity	
Cross-field uniformity in a 20 cm water phantom	• max. ± 4 HU • typ. ± 2 HU

Phantom positioned near center of rotation

Dose, CTDI$_{100}$ Values mGy/100 mAs				
Phantom Ø			kV 110	kV 130
16 cm	A		13.1	19.7
	B		14.2	20.9
32 cm	A		3.9	6.1
	B		7.8	11.9
A: at center		B: 1 cm below surface		
Technique		• PMMA-Phantom • Absorbed dose for reference material air • Max. deviation: ± 20% for tube currents < 25 mA ± 30% for tube currents < 25 mA • Expected deviation: ± 10% for tube currents < 25 mA ± 20% for tube currents < 25 mA		

The actual exposure values, such as CTDI$_{100}$, CTDI$_w$, CTDI$_{vol}$, and DLP, may deviate from the values displayed at the scanner and from the values stated here.

Typical deviation	within ± 10%
Maximum tolerance	± 20%

The linearity of the radiation output (linearity of measured dose related to displayed mAs) is ± 10%

Installation

Components

Dimensions	Height (mm / inch)	Width (mm / inch)	Length (mm / inch)	Weight (kg / lbs)
Gantry	≤ 1,765 / 69.5	≤ 840 / 33.1	≤ 2,100 / 82.7	≤ 1,400 / 3,086
CT patient table (227 kg)	≤ 885 / 34.8	≤ 700 / 27.6	≤ 2,500 / 98.4	≤ 500 / 1,102
CT patient table (307 kg)[1]	≤ 900 / 35.4	≤ 700 / 27.6	≤ 2,560 / 100.8	≤ 500 / 1,102
RT patient table[1]	≤ 950 / 37.4	≤ 700 / 27.6	≤ 2,480 / 97.6	≤ 500 / 1,102

Power Supply	
Nominal voltage ± 10%	• 380–480 V
Nominal line frequency ± 10%	• 50; 60 Hz

Power Consumption	
Max. power consumption	• ≤ 50 kVA
Standby	• ≤ 2 kVA

Protection Against Input Power Instability	
Controllers	• 300 ms
***syngo* Acquisition Workplace**	• 3 min, with UPS[1]
Frequency stability	• ± 5% at 50 and 60 Hz

Sound Design	
Standby	• 50 dB(A)
Peak	• 65 dB(A)

Electromagnetic Compatibility

This product is in compliance with IEC 60601-1-2 and fulfills CISPR 11 Class A.

| Room Environment	
Temperature range	• 18–30 °C / 64.4–86 °F
Relative air humidity without condensation	• 20–75%
Heat dissipation (gantry, table and integrated computers)	• ≤ 5.3 kW scanning
Heat dissipation (image reconstruction and Acquisition system)	• ≤ 1.1 kW

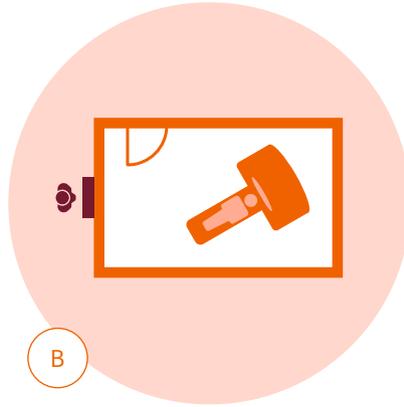| Surface Area for Installation[2]	
System footprint (surface area covered by gantry and moving table top)	• 4 m2 / 43 ft^2
Flexible room design minimum requirement	• 12 m^2 / 130 ft^2

[1] *Optional*
[2] *Subject to local regulations. Safety distances must be checked according to country specific requirements.*
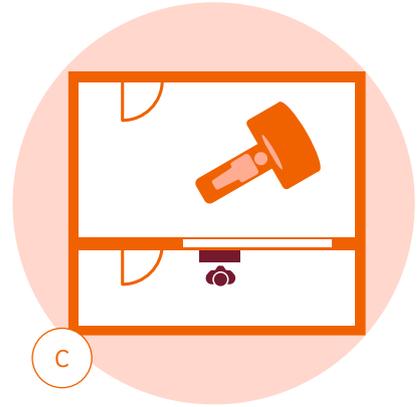
Installation
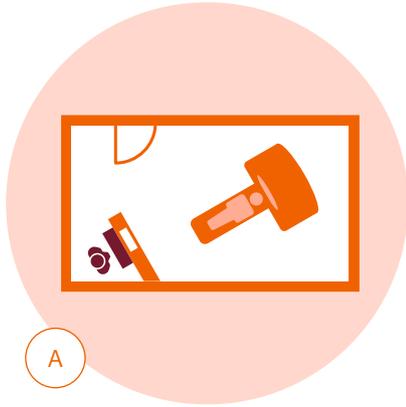
A) Follow the "niche" concept to work in the examination room.

B) Position the workstation outside the room, e.g., in the corridor.

C) Minimize the room requirements of a separate control room.

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

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The statements by Siemens Healthineers' customers described herein are based on results that were achieved in the customers' unique setting. Since there is no "typical" hospital and many variables exist (e.g. hospital size, case mix, level of IT adoption) there can be no guarantee that other customers will achieve the same results.

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