

SOMATOM go.Sim

Together, creating efficiency

[siemens-healthineers.com/radiotherapy/ct-for-rt/somatom-go-sim](https://www.siemens-healthineers.com/radiotherapy/ct-for-rt/somatom-go-sim)

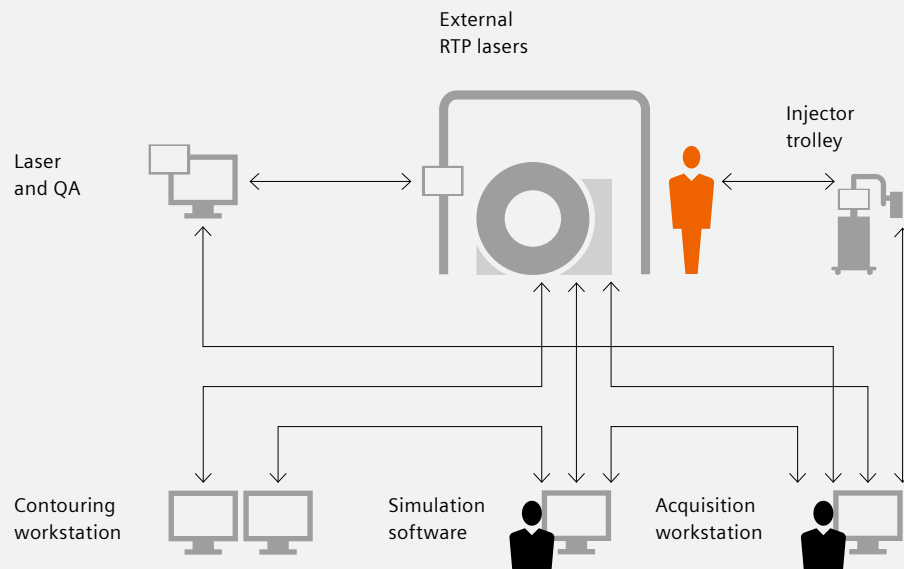


SIEMENS
Healthineers 

Staying competitive in a growing market

Today's healthcare providers are under increasing pressure to deliver radiotherapy to more patients than ever before. This demands innovative solutions that will allow you to work more efficiently and lay the foundations for the best possible treatments and better patient outcomes.

An imperfect workflow



The rise in RT patient numbers will potentially add further pressure to the already complex and challenging RT workflow. Patients go through a multistep process that involves multiple data exchanges. At Siemens Healthineers, treatment preparation is our area of expertise. That's why we want to optimize this part of the process by addressing the lack of integration in existing systems.

The challenges in CT simulation

60% of RT incidents are caused by manual operation and data exchange¹

1 Contouring is a major source of variability in RT planning²

49% of patients feel distressed and anxious³

Together, creating efficiency

Precise CT simulation requires fail-safe, reproducible, and streamlined workflows.

SOMATOM go.Sim is a single, integrated software and hardware solution that covers the entire CT simulation process. It was created for one reason – to minimize errors in a complex workflow so as to potentially reduce time to treatment. Driven by intelligence and automation, SOMATOM go.Sim simplifies your tasks and reduces the likelihood of errors. It helps you to shorten your workflow and save time so that you can focus on what matters most: your patient.

Our understanding of integration extends to every aspect of CT simulation. SOMATOM go.Sim delivers image optimization for target delineation, target margins, and even autocontouring. By integrating the power of AI, this CT simulator also eliminates the problem of variability in your starting point for treatment planning.

Its simple operating concept allows staff to spend more time with their patients. A single vendor service contract relieves the burden on administrators.

SOMATOM go.Sim is a dedicated CT simulator that can optimize clinical operations. Designed and developed considering the needs of the radiation therapy staff – we are together, creating efficiency.

Imaging, the foundation of radiation therapy

SOMATOM go.Sim

Together, creating efficiency



With streamlined efficiency

Integrated components are the key to efficient CT simulation. SOMATOM go.Sim aims to give you certainty with a streamlined workflow that is smooth, fast, and able to deliver reproducible and user-independent results. By providing precise contouring through deep learning AI segmentation, SOMATOM go.Sim gives you confidence that you are working from a consistent starting point.



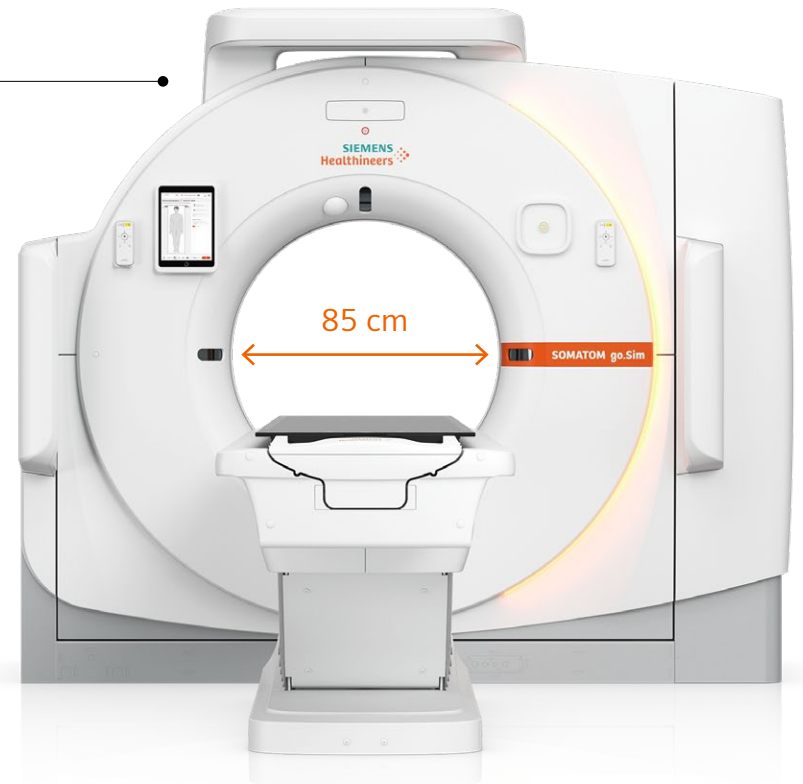
Leading the patient journey with quality

Because the image quality is crucial for tumor delineation and dose calculation, we've enhanced it further to help you lead the treatment planning path. By reducing metal artifacts and adding specific radiation therapy protocols for dual energy, you can gain visibility thanks to the higher soft tissue contrast.



With intelligent precision

Reducing pressure on operators gives you time to focus on patients and high-quality results. SOMATOM go.Sim is built on a concept that cares for the needs of both patients and users.



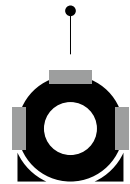
Key technical data

sFOV	Acquired slices / reconstructed slices	Z-axis coverage	Rotation time	Power	Max. table load
60 cm	32 / 64	1.92 cm	0.35, 0.5, 1.0 s	75 kW	227 / 307 ⁴ kg (TG-66 compliant tables)

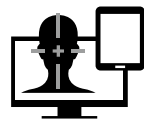
Take integration further

Help to reduce the potential of human errors with automated QA.

Direct Laser⁴ provides an automated laser QA procedure with integrated patient-marking lasers, and removes the need to switch workstations or interfaces.



+ RTP laser



+ Simulation software on tablet and workstation



+ Acquisition workstation

Enhance workflow efficiency.

Simplify the simulation process with an integrated prescription driven workflow¹¹ that uses **myExam Companion** for clinical decision support and the automatic selection of scan protocols, and straightforward patient documentation via **DirectSetup Notes^{4,10}**, all seamlessly integrated into the **Mobile Workflow** to reduce complexity.

Other features:

- **4D CT scanning and Respiratory Motion Management⁴** with FAST 4D provides automated and reproducible results.
- **iMAR⁴** is our proven metal artifact reduction algorithm for improved tumor visualization.
- **TwinSpiral Dual Energy⁴** aims to deliver images with sharp contrast for excellent soft tissue visualization.

Tailor images for precise target contouring.

Open the door to dose calculation using one calibration curve. **DirectDensity^{4,5}** enables you to personalize kV settings for each patient, eliminating the need for tube voltage-dependent calibration in the TPS.

Enhance tissue contrast and progress in sophisticated radiotherapy procedures.

Through **Dual Energy⁹** acquisition with **DirectSPR⁴** reconstruction, proton stopping power images are directly accessible. This reduces potential systematic errors associated with HU to stopping power conversion.



+ Contouring station



Courtesy of Leopoldina Krankenhaus Schweinfurt, Germany⁶

Optimize images specifically for consistent OOI contours and fewer side effects after treatment.

DirectORGANS⁴ offers the world's first contours generated by a CT simulator using an optimized reconstruction, and deep learning.

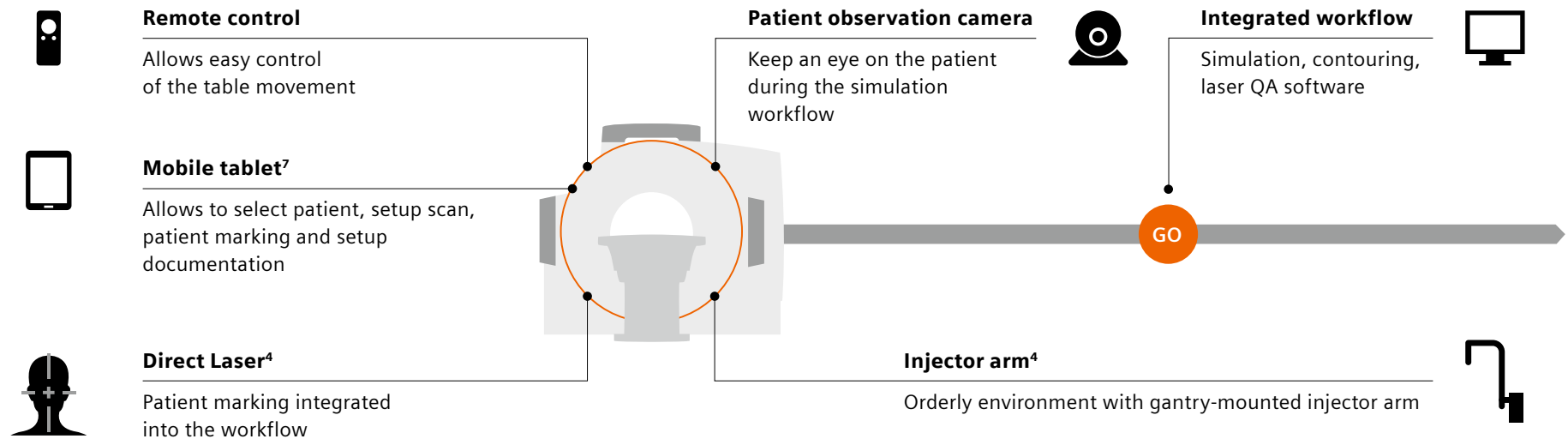


Co-creation

Powered by co-creation

To explore what really matters to you, we spoke to over 300 RT specialists: radiation oncologists, medical physicists, dosimetrists, RTTs, and financial decision-makers. We learned about your biggest challenges and created a CT simulator to address them.

Work closer to the patient with our trendsetting Mobile Workflow



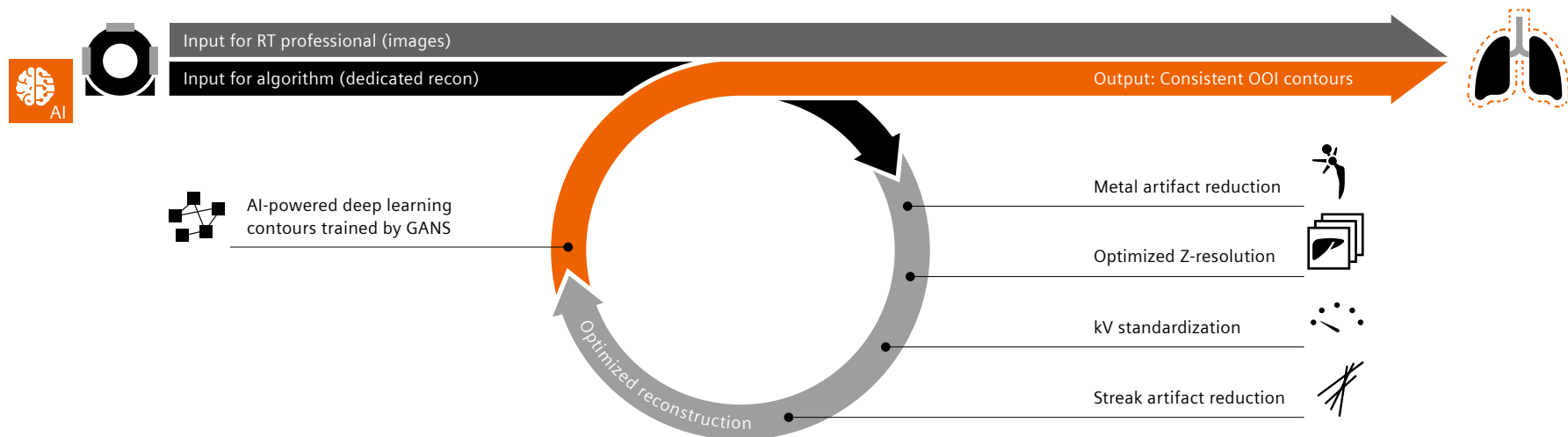
CT simulation is integral to the treatment planning process, requiring close proximity to the patient and meticulous attention to detail. SOMATOM go.Sim provides integrated support through simple operation via a mobile tablet. This functionality assists in steering laser positioning beams, guiding users through clinical routines, capturing comprehensive patient positioning, and photographing the entire setup. The result is a streamlined process.

With streamlined efficiency

- Simplified patient marking using a single system
- Accurate laser positioning with the integrated Direct Laser
- User-friendly interface and guidance throughout the entire simulation process via myExam Companion
- Thorough and integrated reporting of patient positioning with DirectSetup Notes^{4,10}



DirectORGANS offers precision with the world's first contours generated by a CT simulator



DirectORGANS (Optimized Reconstruction-based Generative Adversarial Networks) is a revolutionary, AI-based organs-of-interest (OOI) contouring solution.

Leveraging optimized reconstruction parameters, it delivers standardized input for the deep learning-based contouring solution to produce consistent OOI contours. This process runs in parallel to the reconstruction of the image for target contouring.

Experience the world's first contours generated directly at the CT simulator.

Drive precision for contouring

- Perform OOI contouring directly at the system, reducing the need for manual interaction.
- Leverage the power of optimized reconstruction and deep learning to streamline OOI contouring.
- Benefit from AI contouring enhanced by advanced imaging capabilities, coupled with Dual Energy⁹.
- Multi guidelines support allows to choose the preferred international guidelines

Clinical study from Unviersitäts-klinikum Erlangen, Germany⁸

Average rating of contours ⁸	Average contouring time per patient in min ⁸
90% clinically usable contours	Ø11.4 min time saving per case

- Clinical evaluation of 50 datasets for 5 sites with 10 cases each
- 2140 OOIs evaluated

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- ¹ Greenwalt J et al. Reducing errors in radiation therapy through electronic safety checklists. *Applied Radiation Oncology*. 2014; 5–9
- ² Jameson MG et al. A review of methods of analysis in contouring studies for radiation oncology. *J Med Imaging Radiation Oncol*. 2010; 54(5): 401–10
- ³ Kelly E et al. Reduced patient anxiety as a result of radiation therapist-led psychosocial support: a systematic review. *J Med Radiat Sci Sep*; 64(3): 220–231
- ⁴ Optional
- ⁵ As shown by measurements with a Gammex 467 Tissue Characterization Phantom comparing standard reconstruction and DirectDensity reconstruction. Image value to relative electron/mass density conversion for the standard reconstruction was based on a two-linear-equations approach with individual calibration for each tube voltage.
For DirectDensity images, a single tube-voltage-independent linear conversion was used. DirectDensity reconstruction is designed for use in Radiation Therapy planning (RTP) only. DirectDensity reconstruction is not intended to be used for diagnostic imaging.
- ⁶ Volume-rendered image is for illustration purposes only and not part of DirectORGANS.
- ⁷ Option of up to three additional tablets.
- ⁸ Study results from Universitätsklinikum Erlangen, Germany, using DirectORGANS VA40 and syngo.via RT Image Suite Organs RT VB50. Software version syngo.via RT Image Suite Organs RT VB50 is equivalent to DirectORGANS on SOMATOM go.Sim and SOMATOM go.Open Pro syngo CT VA40. Published in White paper DirectORGANS 2.0, Siemens Healthineers, 2021.
- ⁹ Only available in combination with DirectORGANS.
- ¹⁰ DirectSetup Notes is intended for digitalizing patient setup documentation to ease the RT workflow. The operation and the configuration of the feature must be conducted by trained healthcare professionals. Requires: ARIA CORE 18.1 MR1 or higher (incl. ARIA Documents Workspace, ARIA DICOM Worklist recommended), FHIR4ARIA 4.5 or higher, VAIS 1.8 or higher, SQL Server 2019 or higher.
- ¹¹ Requires: ARIA CORE 18.1 MR1 or higher (incl. ARIA Documents Workspace, ARIA DICOM Worklist recommended), FHIR4ARIA 4.5 or higher, VAIS 1.8 or higher, SQL Server 2019 or higher. Availability with 3rd party OIS systems to be clarified by customer with corresponding OIS vendor.