SOMATOM go.Open Pro

The future is in motion

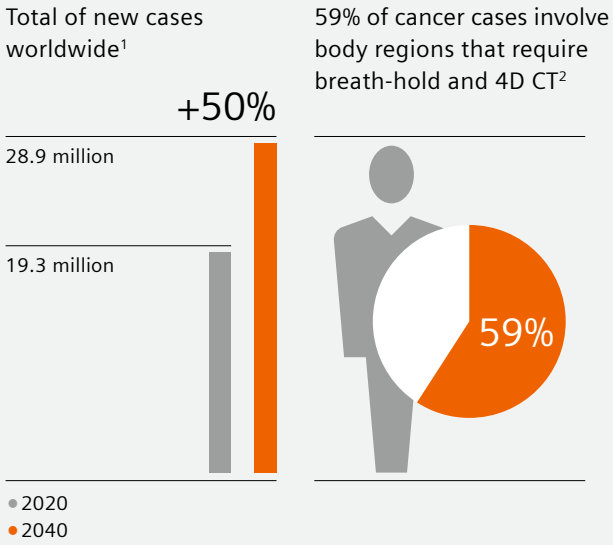
siemens-healthineers.com/somatom-go-open-pro

SIEMENS Healthineers

Staying competitive in a growing market

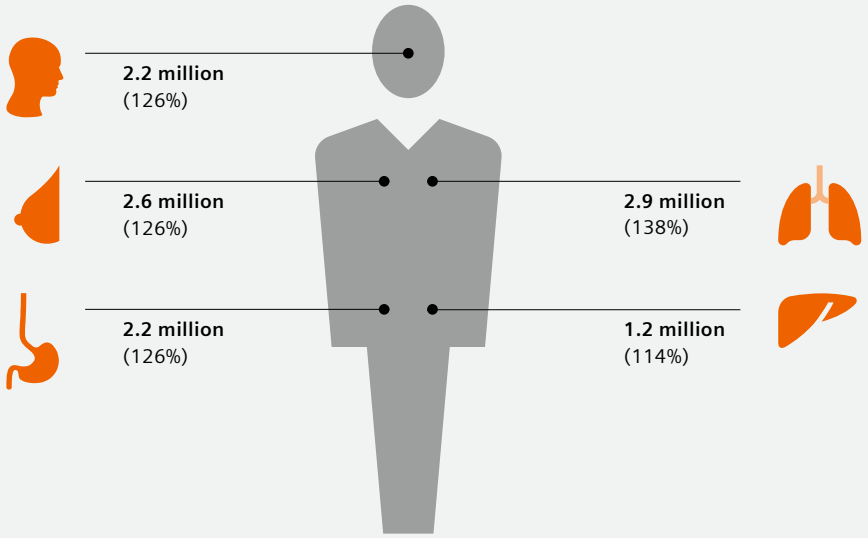
Healthcare providers are under increasing pressure to deliver radiotherapy to more patients than ever. This demands innovative, efficient solutions that will achieve the best possible treatments and optimal patient outcomes – particularly when you are working with challenging cases.

A growing problem



With cancer cases expected to surge between now and 2040[1], RT departments will have to treat more patients than ever. Motion will be a major obstacle in many of these cases.

Challenging cancers are on the rise



The number of patients with conditions that create challenges for treatment (e.g. head and neck, breast, lung, liver, stomach, and esophageal cancer) is set to grow significantly.[2] To manage this trend, you need technology that can push clinical boundaries and help you lead your field for years to come.

The future is in motion

Push the boundaries to better treat the most challenging cases

Curative intent, hypofractionated treatments, and image guided treatments hold enormous potential for patients. Yet they are only possible if the treatment planning data are absolutely precise. Many patients with conditions that present major challenges – such as the inability to hold one's breath – miss out on the benefits because current CT simulation cannot manage the individual complexities they present.

We believe the future is in motion – and this belief shaped the development of SOMATOM go.Open Pro.This advanced CT simulator is designed to provide clinicians the right starting point to support new treatment approaches with the necessary tools to manage the individual complexities of patients. By harnessing the power of a unique detector width, improved tumor contrast and intelligent real-time breathing adaptation, it delivers exceptional clarity for confident treatment planning. Input from RT specialists guided the design, so the fully integrated hardware and software are specifically tailored to your requirements. This streamlined solution was created to reduce errors in a complex workflow and potentially reduce time to treatment. It simplifies your tasks and reduces the likelihood of errors, allows to shorten your workflow and save valuable time.

With SOMATOM go.Open Pro, you and everyone on your team can push your clinical boundaries and remain at the forefront of your field for years to come.

Push the boundaries for challenging cases

Simulation reinvented

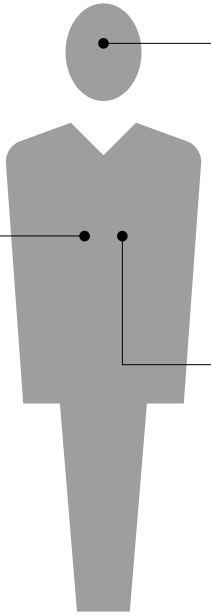
Welcome to a new world of CT simulation.

The future is in motion

SOMATOM go.Open Pro

Push the boundaries for challenging cases

A CT simulator that provides seamless patient marking and reduces unwarranted variations that can break down the barriers to modern treatments and individualized care – SOMATOM go.Open Pro allows you to push the boundaries for challenging cases.



Lung cancer

Direct i4D[3,4] is the world´s first 4D CT scan mode that intelligently adapts to the patient's breathing in real time.

Make 4D CT available for more patients and significantly reduce 4D CT motion artifacts[5].

Head & neck cancer

TwinSpiral Dual Energy[3] is a new form of dual-energy acquisition. It uses a Tin Filter for optimal spectral separation.

Aim for precise target delineation with TwinSpiral Dual Energy and Monoenergetic Plus[3].

Breast cancer

With a wide detector coverage and fast rotation times, SOMATOM go.Open Pro makes deep inspiration breath-hold feasible for more patients. It offers acquisition in breath-hold of just eight seconds.

Improve access to tailored treatment, and boost image quality for more confident contouring.

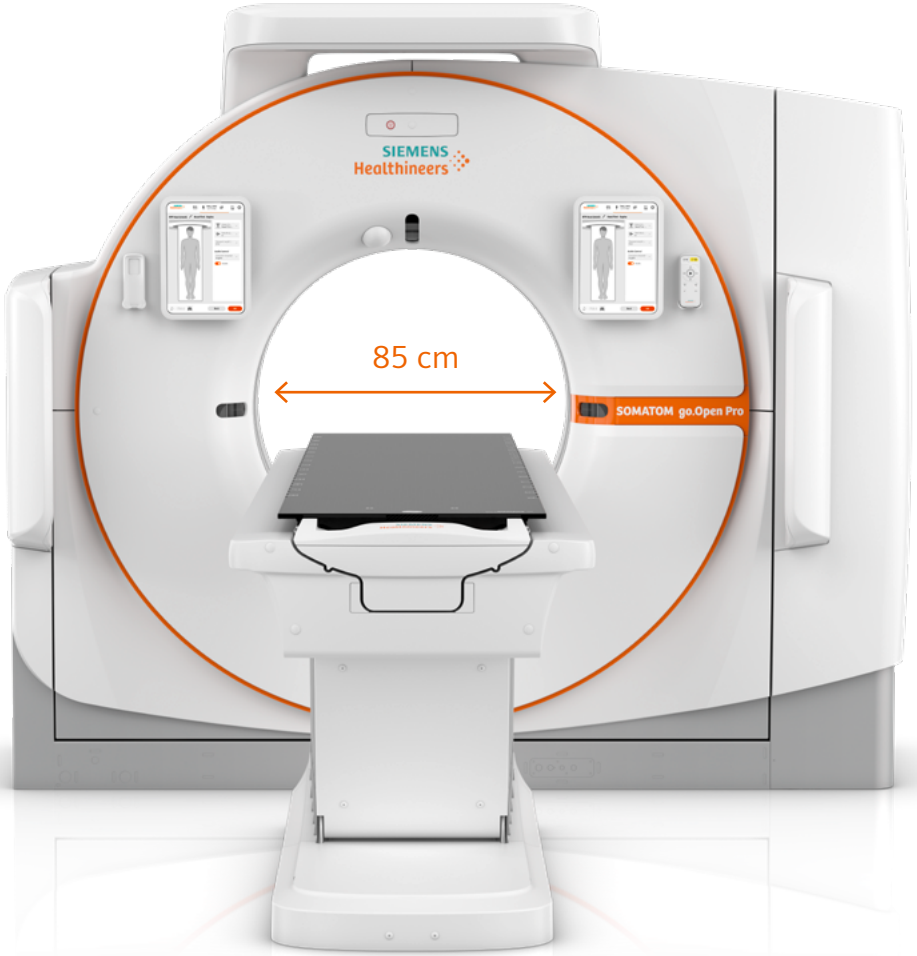
Improve patient experience

Reduce unwarranted variations with high-quality OAR contours

AI-powered DirectORGANS[3] delivers consistent organs-at-risk (OAR) autocontouring. It offers the world's first contours generated by a CT simulator using an optimized reconstruction, and deep learning.

Save time by eliminating manual steps with DirectORGANS[3] (e.g., ribs, sternum, and lung lobes contours).

Pave the way for research in the field of cardiac toxicity with cardiac chamber segmentation.



AI

Co-creation

Simulation reinvented

SOMATOM go.Open Pro reinvents simulation for multiple cancer types, driving precision, and caring for patients and users. Co-created with RT specialists, it features fully integrated hardware and software tailored specifically to your requirements. The flexible, intuitive system synchronizes data across all integrated components. It operates via one user interface and requires a single vendor service contract.

Spend less time managing CT simulation and more time focusing on your patients – in the calming and reassuring environment that SOMATOM go.Open Pro creates for them.

Key technical data

sFoV	Acquired slices / reconstructed slices	Z-axis coverage	Rotation time	Power	Max. table load
60 cm	64 / 128	3.84 cm	0.35[3], 0.5, 1.0 s	75 kW	227 / 307[3] kg (TG-66 compliant tables)

Simulation reinvented

Take integration further

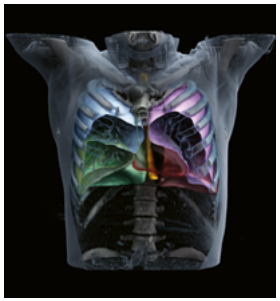
Minimize sources of errors in QA
Direct Laser[3] provides an automated laser QA procedure with no need to switch workstations or interfaces with integrated patient-marking lasers.

Personalize images for target contouring
DirectDensity[3,6] allows you to tailor kV settings for each patient, and eliminates the need for tube voltage-dependent calibration in the TPS.

Simplify the current practice for particle therapy
Dual energy acquisition with DirectSPR[3] reconstruction makes stopping power images directly available to reduce the systematic errors from HU to stopping power conversion.

+ RTP laser
+ Simulation software
+ Acquisition console
+ Contouring station

Reduce complexity and errors in laser steering
Direct Laser Steering, combined with the Mobile Workflow, enables a fast, seamless, and less error-prone workflow for patient marking.



Courtesy of Leopoldina Krankenhaus Schweinfurt, Germany[7]

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

DirectORGANS[3] offers the world's first contours generated by a CT simulator using an optimized reconstruction, and deep learning.

Other features:

- **4DCT scanning and Respiratory Motion Management**[3] with FAST 4D provides automated and reproducible results independent of the operator.
- **iMAR**[3] is our proven metal artifact reduction algorithm that gives you confidence in tumor visualization.
- **TwinSpiral Dual Energy**[3] delivers images with the goal of even sharper contrast for excellent soft-tissue visualization.

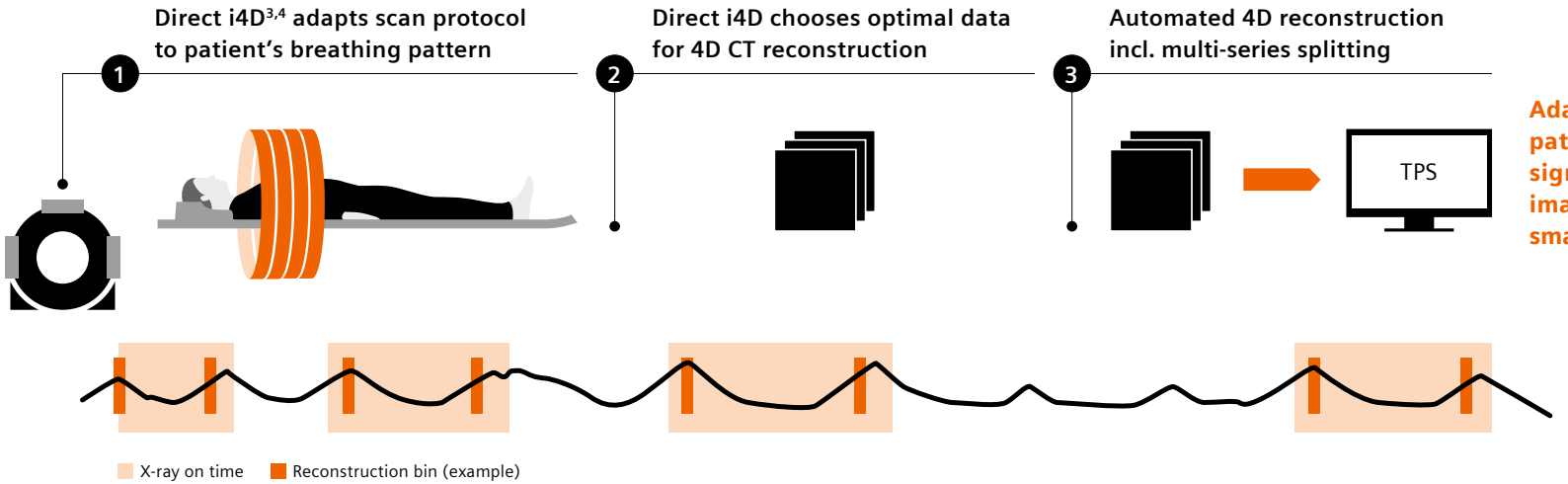
Co-creation

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.

Direct i4D

Reduce motion artifacts with real-time breathing adaptation



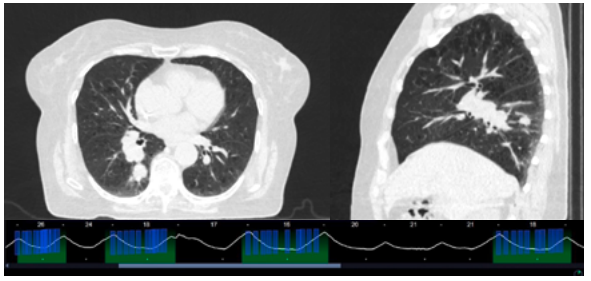
Adapting to the patient's breathing significantly reduces image artifacts for smaller target margins[5]

Direct i4D delivers the world's first 4D CT that adapts to the patient's breathing in real time.

During the 4D CT scan, SOMATOM go.Open Pro intelligently adapts the scanning parameters to the individual breathing pattern in real time. The system is therefore able to account for changes in breathing frequency and amplitude as illustrated above. Automated 4D reconstruction and optimized binning further reduces breathing induced artifacts and improves image quality. This can potentially decrease target margins, and leads to less dependency on user and patient.

Push the boundaries for lung and liver cancer treatment

- Robust and simple 4D image acquisition for every user, with potential to avoid re-scans and time-consuming edits
- Fewer motion artifacts for accurate visualizations of moving tumors
- More confident treatment planning with potential for smaller target margins



Courtesy of University Hospital Erlangen, Germany

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[1] *Union for International Cancer Control (UICCI), https://www.uicc.org; Cancer Research UK, www.cancerresearchuk.org*
[2] *International Agency for Research on Cancer, https://www.iarc.fr*
[3] *Optional*
[4] *Online gating device such as RGSC or Anzai is required.*
[5] *Werner et al. Intelligent 4D CT Sequence Scanning (i4DCT). Best of Physics at ASTRO 2018.*
[6] *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.*
[7] *Volume rendered image is for illustration purposes only and not part of DirectORGANS.*

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