

syngo.via for RT

Boosting efficiency

Simulation and
treatment preparation

siemens-healthineers.com/syngo.via



Edition
2020



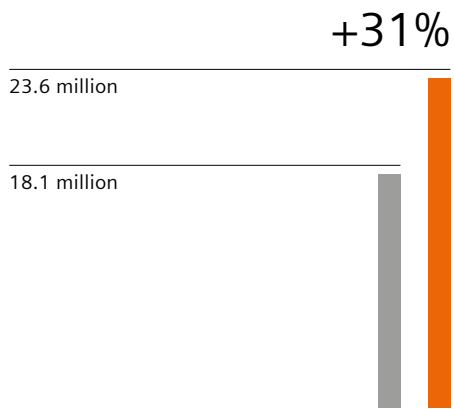
Radiation therapy in a dynamic healthcare environment

Like many other areas of healthcare, radiation therapy is a dynamic and fast-changing field. The number of patients receiving this type of therapy is continually rising.

At the same time, topics such as precision medicine, curative intent, and hypofractionated treatments have become increasingly relevant in recent years. More and more institutions in the U.S. are adopting stereotactic body radiotherapy (SBRT), and many are planning to offer stereotactic radiosurgery (SRS) in the future.

A growing problem

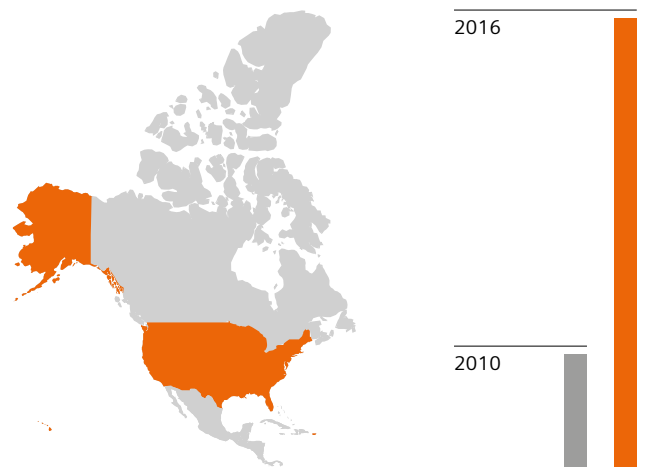
Total of new cases worldwide¹



- 2018
- 2030

Adoption of SBRT in the U.S.²

2010–2016



- 2010
- 2010–2016

To succeed in this environment, you need to treat more patients at a lower cost and master new treatments that will expand your clinical case mix.

¹ Union for International Cancer Control (UICCI), uicc.org; Cancer Research UK, cancerresearchuk.org

² IMV Radiation therapy survey 2015/16.

Boosting efficiency in simulation and treatment preparation

Software applications have a key role to play here, and advances in treatment delivery methods will make them even more important. If the applications can support efficient workflows and deliver precision for advanced therapies, they will drive clinical excellence in RT today and into the future.

That's why we developed syngo.via RT Image Suite for radiation therapy. Our solution reduces virtual simulation time and gives you fast access to accurate clinical information, wherever and whenever you need it. Other features – such as a comprehensive respiratory motion management, a MR-only workflow, a dedicated breast RT workflow, state-of-the-art deep-learning based organs-at-risk (OAR) autocontouring directly triggered at any CT simulator, and comprehensive dose information – will expand your practice and support new treatments.

A particularly user-friendly tool, this software makes simulation, image assessment, and contouring easier and more integrated. It simplifies and standardizes your daily tasks, and gives you the capabilities you need to go beyond the current standard.

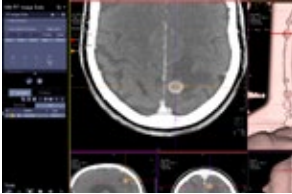
Ease what you do. Seize new opportunities.



Ease what you do

Work more comfortably with an efficient, straightforward, and well-integrated tool.

Faster marking, fewer errors

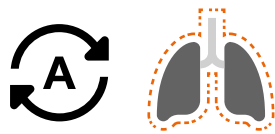
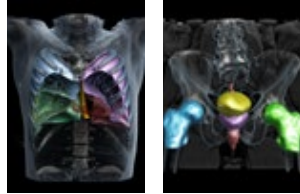


Create a fast, seamless, and more accurate workflow for patient marking with Direct Laser Steering¹



Single-click breast isocenter placement with automated contouring of the breast

Simplified contouring



Have organs-at-risk contouring ready before you arrive, with zero-click deep learning-based Organs RT¹ from any CT simulator (vendor neutral).

Streamline the workflow with one-click adaptive contouring¹

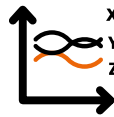
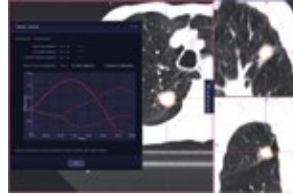


Simplify image assessment with smart contouring tools



Organs-at-risk contours with cloud-based AI-Rad Companion Organs RT²

Tumor trajectory and mid-ventilation phase



Offer new treatments by visualizing tumor trajectory and capturing mid-ventilation phase for CT, PET-CT and MR



Evaluate beam geometry fast, adapted to the tumor's shape

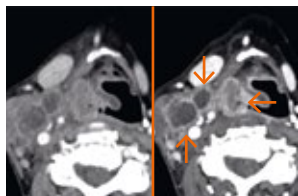
¹ Optional. This refers to the functionality syngo.via RTiS Auto-Contouring or Advanced Contouring.

² Optional. AI-Rad Companion Organs RT is not commercially available in all countries, and its future availability cannot be ensured.

Seize new opportunities

Go beyond today's standards.

Greater confidence

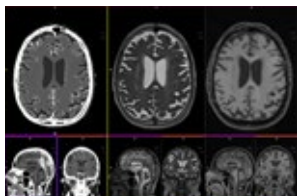


Gain more confidence in target delineation with *syngo.CT DE Monoenergetic Plus*¹



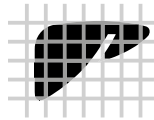
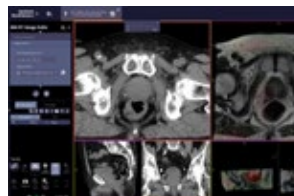
Enables accurate and automated SPR calculation with *syngo.CT DE DirectSPR*¹

MR-only workflow



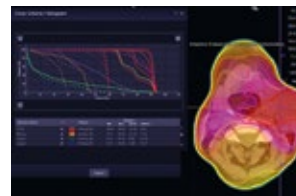
Use a straightforward MR-only workflow with Synthetic CT¹

Multimodality image management



Use multimodality images more confidently with Deformable Registration and Contouring Propagation¹

See the full picture



See the full picture for treatment decisions with RT Dose display¹



Discuss cases and get second opinions in real time with Expert-i



Access the whole world of *syngo.via* applications for support throughout the patient journey

¹ Optional

Ease what you do

For RT professionals, handling multimodality images can be cumbersome. Manual steps, awkward tools, and multiple workflows across unintegrated systems can all hamper the routine tasks of simulation, data preparation, and contouring.

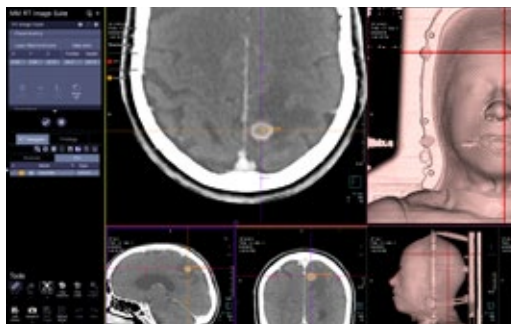
syngo.via makes many of your daily tasks more fluent, therefore your routine gets easier and more productive. With its fast, reliable, and seamless performance across all modalities, you can handle your clinical challenges with ease and confidence.

“We at CCGM shortened the virtual simulation step to an estimated 20 minutes, and thereby saved a significant amount of time for the radiation therapy department as a whole.”

Stéphane Muraro,
Centre de Cancérologie du Grand Montpellier (CCGM), Montpellier, France

Fast, accurate patient marking

Integrated patient marking helps you work faster and avoid errors. Direct Laser Steering^{1,2} transfers coordinates to a compatible LAP laser system with no need for an extra workstation. Virtual Laser View displays the laser line on a VRT as a visual reference for marking. Automatic placement of the breast isocenter requires just a single click.

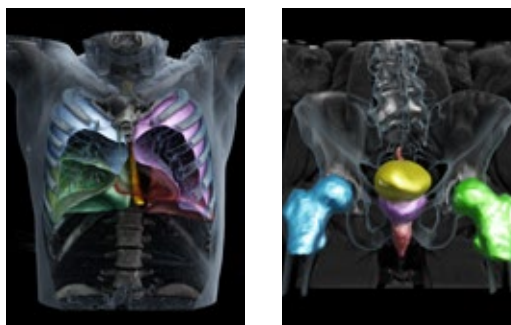


Faster marking, fewer errors

Courtesy of MAASTRO Clinic Maastricht, The Netherlands

AI-powered OAR contouring

Triggered at the scanner, Organs RT¹ makes virtual simulation part of the standard acquisition task. The AI-assisted technology uses deep learning to detect contours and organs for greater precision and reliability, regardless of the operator or CT simulator. The OAR contouring results arrive fast, so you can devote more time to treating your patients. This solution is also available cloud-based, providing scalability with flexible use models and cloud deployment. Provide a future proof solution with risk free subscription models.³

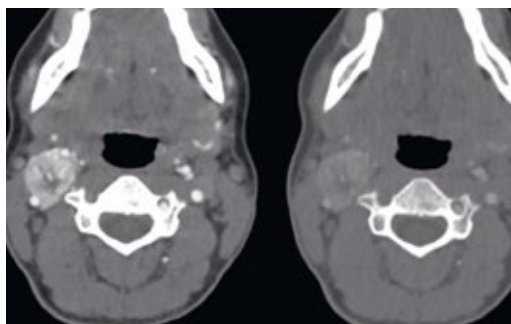


AI-based organs-at-risk contouring

Courtesy of Leopoldina Krankenhaus, Schweinfurt, Germany
 Courtesy of Aarhus University Hospital, Denmark
 Images created with CinematicRendering for illustration purposes.

Greater confidence for both target contouring and SPR calculation with Dual Energy

Dual Energy solution leverages the full power of modern CT simulation. syngo.CT DE Monoenergetic Plus¹ optimizes image contrast for enhanced contouring and gives you greater confidence in delineating tumors. syngo.CT DE DirectSPR^{1,4} generates Stopping Power Images directly available for dose calculation. It addresses your challenges in particle therapy with accurate and automated SPR calculation.



Greater confidence

Courtesy of Radiology Department, Hospital Particular de Viana do Castelo, Viana do Castelo, Portugal

¹ Optional. This refers to the functionality syngo.via RTIS AutoContouring or Advanced Contouring.

² Requires compatible laser system.

³ Requires AI-Rad Companion Organs RT.

⁴ DirectSPR is designed for Siemens SOMATOM Dual Energy scanners. TwinBeam DE images are not considered for SPR calculations with DirectSPR.

Seize new opportunities

As a radiation oncologist, you need to keep up with the demands of your field. New treatment techniques, accurate contouring and planning, and interdisciplinary cancer care demand state-of-the-art technology and collaboration tools that go much further than a simple sticky-note.

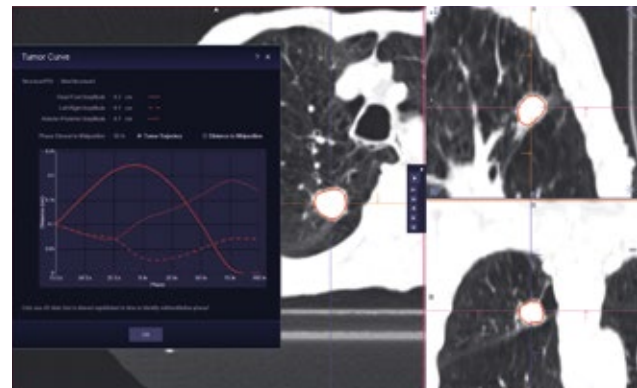
Clinical progress never stops and *syngo.via* is always up to date, applying the latest technologies like AI to help boost your clinical performance. As an open platform, *syngo.via* allows you to easily integrate your choice of apps and research prototypes, enabling you to pioneer new practices.

“The mid-ventilation approach helps to tailor the irradiating volume for a particular patient, avoiding excess irradiation of healthy tissue.”

Mirjana Josipovic,
senior medical physicist and PhD fellow, Rigshospitalet, Copenhagen, Denmark

Open up new treatment strategies with tumor trajectory and mid-ventilation phase

syngo.via RT Image Suite offers a new, convenient method for 4D imaging assessments: 4D contouring propagation with tumor trajectory. Semi-automatic contour propagation means you can easily propagate contouring over the different breathing phases¹ and quickly generate an ITV. The software also visualizes quantitative 3D tumor trajectories and semi-automatically calculates the phase when the tumor is closest to mid-ventilation position. This is the mid-position of the trajectory taking into account the time the tumor spends at each location. This approach could help reduce the PTV, decrease toxicity, and open up lung SBRT to more patients.²

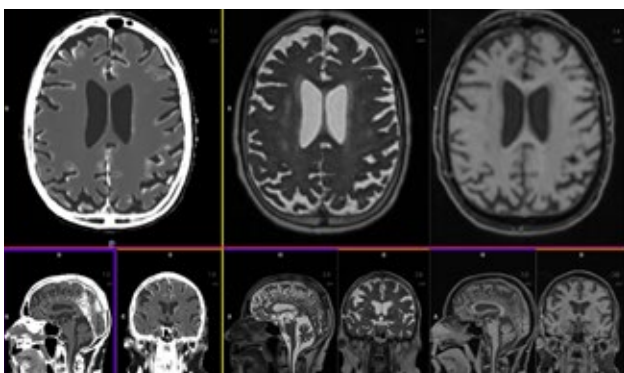


Tumor trajectory with mid-ventilation phase
 Courtesy of MAASTRO Clinic, Maastricht, Netherlands

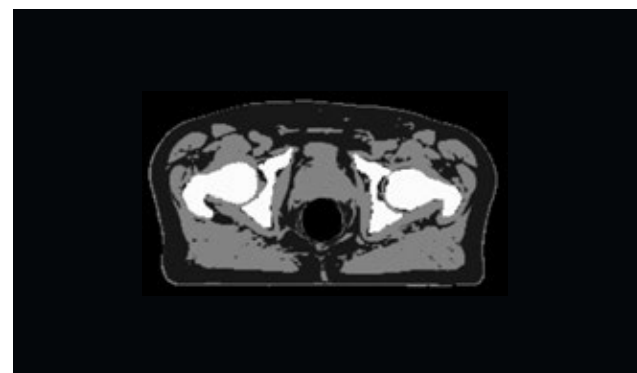
Acquire density information for dose calculations with Synthetic CT¹

The MR-only approach offers a straightforward workflow that gives you the density information you need for dose calculations. It removes the problem of registration

errors between CT and MR in radiation therapy – and fast scanning protocols and automatic preprocessing allow it to fit seamlessly into your clinical practice.



MR-only workflow
 Courtesy of Centre hospitalier de l'Université de Montréal, Montreal, Canada

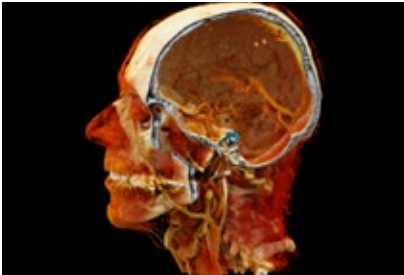


Courtesy of the University of Tuebingen, Tuebingen, Germany

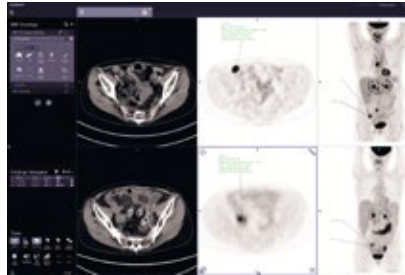
¹ Optional

² Mid-ventilation based PTV margins in Stereotactic Body Radiotherapy SBRT – A clinical evaluation Peulen et al.

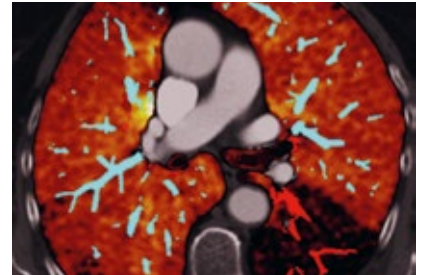
Additional advanced syngo.via applications



Cinematic VRT – Create photorealistic images with just one click²
Courtesy of University Hospital Heidelberg, Germany



Get the most out of your image, faster with syngo.MM Oncology³
Courtesy of University of Keio Gijyuku University Hospital, Tokyo, Japan



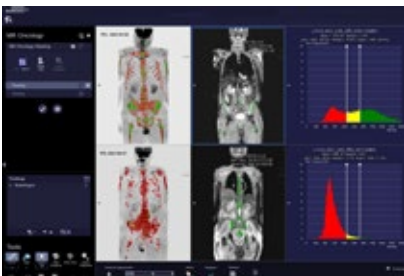
Visualize iodine concentration with syngo.CT DE Virtual Unenhanced¹
Courtesy of Ludwig-Maximilians Universität, Munich, Germany



Enable precision medicine with syngo.via Frontier prototypes (e.g., for investigating radiomics)⁴



Ready to use information with AI-Rad Companion Chest CT – personalize where it matters



ADC⁵-based whole-body tumor burden assessment with MR OncoTrend
Courtesy of Erlangen Imaging center (volunteer scan), Erlangen, Germany



A clearer view of complex pathologies, using patient-specific 3D models – Mimics inPrint on syngo.via OpenApps⁶

i Information

For more information about the technical specifications please visit:
siemens-healthineers.com/syngo.via

¹ Optional

² Cinematic VRT is recommended for communication, education, and publication purposes and not intended for diagnostic reading.

³ The future availability of syngo.MM Oncology cannot be guaranteed.

⁴ For research use only. Not for clinical use.

⁵ Apparent Diffusion Coefficient The product is currently under development; is not for sale in the U.S. Its future availability cannot be guaranteed.

⁶ Siemens Healthineers is neither the provider nor reseller nor legal manufacturer of Mimics inPrint. Any claims made for this product are under the sole responsibility of the legal manufacturer. Additionally, Mimics inPrint may not be commercially available in all countries. Please contact the legal manufacturer for more information.

Why Siemens Healthineers?

At Siemens Healthineers, our purpose is to enable healthcare providers to increase value by empowering them on their journey towards expanding precision medicine, transforming care delivery, and improving patient experience, all enabled by digitalizing healthcare.

An estimated 5 million patients globally everyday benefit from our innovative technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics and molecular medicine, as well as digital health and enterprise services.

We are a leading medical technology company with over 170 years of experience and 18,000 patents globally. With more than 48,000 dedicated colleagues in 75 countries, we will continue to innovate and shape the future of healthcare.



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