




PRIMUS Linear Accelerator

Dependable Outcomes and Increased Productivity

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A Siemens PRIMUS medical device, likely a mobile X-ray unit, is shown in a clinical setting. The device is white and blue, with a large, curved, protective housing. A blue light fixture is visible in the upper left corner. The device is mounted on a stack of white, horizontal slats. The Siemens logo and the word "PRIMUS" are visible on the device's housing.

PRIMUS – Meeting the clinical and investment needs of every institution

Flexible

Reliable

Time-Saving

Affordable

Upgradable





Based on a fully digital infrastructure and advanced modular design, PRIMUS offers exceptional flexibility and advanced treatment techniques to meet clinical and financial requirements for facilities of all sizes.

Meeting Today's and Tomorrow's Treatment Needs

Advances in radiation therapy are enabling healthcare providers to deliver new levels of personalized care to patients. More than ever before, clinical teams require highly innovative tools that offer them:

- Flexible treatment options with a single delivery system
- Time-saving features that enhance staff productivity
- Reliable performance resulting in consistent patient care
- Affordable solutions for providing advanced treatments
- A clear upgrade path for rapid implementation of future technological developments

The PRIMUS™ Linear Accelerator fulfills all of these expectations.

Designed for clinics of all sizes, PRIMUS is an affordable, scalable solution for the full range of radiation therapy treatment options – from Conformal Radiation Therapy (CRT) to Intensity-Modulated Radiation Therapy (IMRT) and Image-Guided Radiation Therapy (IGRT), as well as other high-precision and adaptive therapies.

“Siemens’ integrated technologies are fast and efficient, and with 99% uptime, we are able to consistently treat 4.5 patients per hour on each of our five systems.”

Katrina Rech
Manager of Clinical Services
Adelaide Radiotherapy Centre
Adelaide, Australia

Easy Adaptation to Individual Needs

Around the world, the PRIMUS Linear Accelerator is known for its cost-effective operation and productivity-enhancing features.

Based on a fully digital infrastructure, PRIMUS integrates advancements in beam accuracy, treatment automation, and patient comfort – making it possible to treat a broader range of tumors safely and quickly, with the highest level of precision.

With flexibility in mind, the modular design of PRIMUS makes it easily configurable to specific clinical needs while providing a clear, scalable path for future requirements.



The PRIMEVIEW 3i Graphical User Interface enables therapists to spend more time with patients because less time is required to enter treatment parameters.

PRIMUS OPTIONS

BEAM SHAPING

Multileaf collimators (MLCs) focus the dose to the target more safely and quickly, enabling accurate shaping of the treatment beam

3-D MLC™

Fully integrated into PRIMEVIEW™ 3i workflow, the double-focused leaf design of the 3-D MLC ensures a uniform penumbra, low leaf leakage, and maximum patient clearance

OPTIFOCUS™ MLC

OPTIFOCUS MLC provides an even faster leaf speed and higher accuracy, making it an ideal choice for IMRT treatment delivery

TREATMENT AUTOMATION

Software solutions that support safe, accurate, and reproducible treatment delivery to enable higher patient safety and optimized clinical workflow

PRIMEVIEW 3i

Single, *syngo*®-based therapist workstation with integrated verification and record capability; the graphical user interface simplifies and accelerates patient and PRIMUS Linear Accelerator setup, imaging, and treatment delivery for improved patient comfort and throughput

SIMTEC™ AFS (AUTO-FIELD SEQUENCING)

Fully automated sequencing of gantry, collimator, MLC, OPTIVUE™ and table, including delivery verification and recording for conformal treatment delivery, increases patient comfort and throughput while minimizing unnecessary lag time

SIMTEC™ IM-MAXX™ SIMTEC IM-MAXX 2 FOR OPTIFOCUS

Fully automated IMRT sequencing for more rapid treatment delivery considering MLC motion between IMRT sub-fields; enhances accuracy and reproducibility for faster cinematic IMRT treatment delivery

VIRTUAL WEDGE™

Software-based workflow solution creates dose gradients across the treatment fields, reducing the need for replacement of physical wedges and eliminating unnecessary therapist entry into the treatment room

PATIENT POSITIONING and TUMOR VERIFICATION

Image-based solutions for verification and correction of target position to allow daily personalized high-precision treatment delivery

OPTIVUE 500

Fully automated and integrated digital portal imaging system for excellent image quality and resolution to verify patient positioning

OPTIVUE 1000ST

Special detector for enhanced resolution and higher soft-tissue contrast is ideal for targets such as the prostate, with or without the use of gold seeds

MVision™ with OPTIVUE 1000ST

Megavoltage cone beam (MCVB) imaging can be performed in under 3 minutes, making MVision an ideal solution for speedy routine daily patient positioning verification: one source, one beam, one detector

TREATMENT TABLES

Treatment couches meet increased demands for accuracy, stability, and precision in patient positioning

ZXT™ TREATMENT TABLE

Precise patient positioning with full control and verification from the control console and within the treatment room

550 TxT™ TREATMENT TABLE

Highest patient positioning accuracy and precision for all types of treatment protocols; accommodates patient weights up to 550 lbs (250 kg)

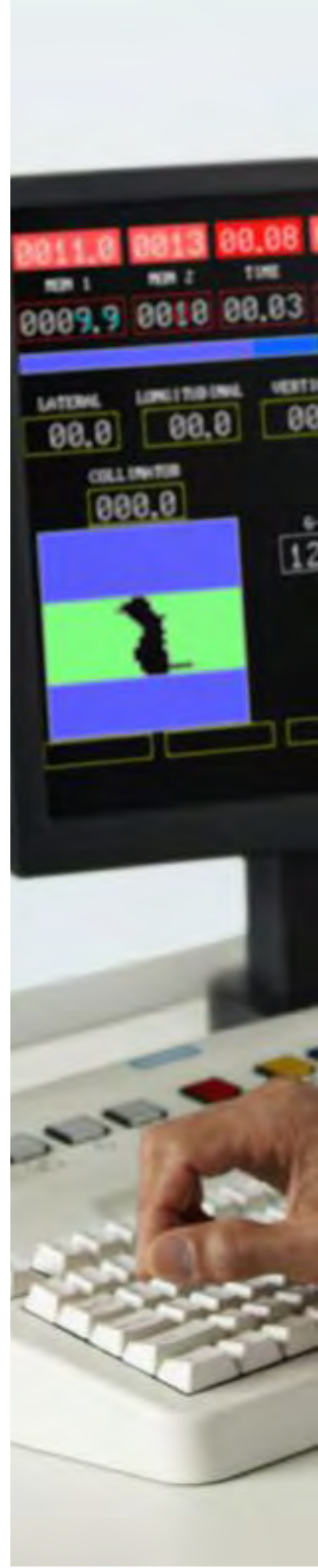


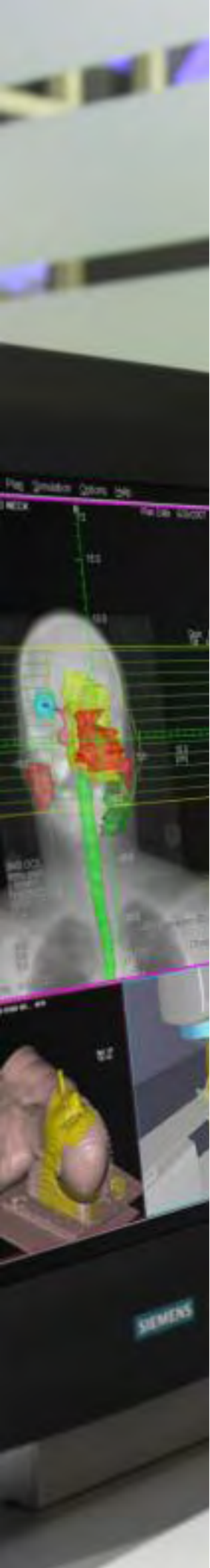
“With Siemens’ IMRT technology, we have increased the speed of our IMRT delivery by 40% – average treatment time is now 7 minutes!”

Dr. P.G.G. Kurup
Chief Medical Physicist
Apollo Speciality Hospital
Chennai, India

“Our ultimate goal is to image the patient in real time. MVision provides us with [cone beam] CT images of the patient in treatment position, and is therefore an important step toward fully adaptive radiation therapy.”

Dr. Russell Fuhrer
Clinical Director of Radiation Oncology
Allegheny General Hospital
Pittsburgh, Pennsylvania
USA





High-Precision IMRT – The Path to Greater Productivity

PRIMUS-based IMRT solutions integrate the technologies necessary to plan, simulate, deliver, and verify treatments, opening the way to greater productivity and throughput. Just as important, they also broaden the range of sites that can be treated today, while providing the scalability to take advantage of tomorrow's advances.

The comprehensive and selectable PRIMUS IMRT toolset incorporates advanced technologies, including SIMTEC IM-MAXX and IM-MAXX 2, OPTIFOCUS MLC, 3-D MLC, and PRIMEVIEW 3i Graphical User Interface. This toolset enhances the delivery of treatment through accurate, automated delivery of IMRT to a target volume in a safe, practical, and verifiable manner, with the inherent flexibility needed to address individual needs – ultimately leading to better workflow and more confident outcomes.



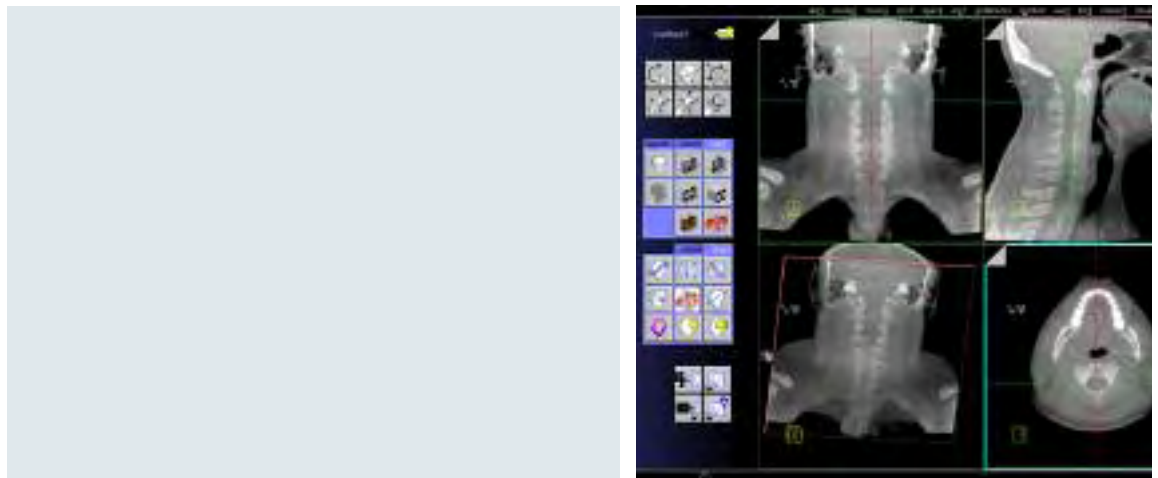
The Elegant Approach to IGRT – MVision

Innovation is the essence of the PRIMUS system, offering exceptional new approaches that maximize clinical performance and workflow efficiency.

MVision is just one such example. MVision is a unique, fully integrated technology that employs the existing treatment beam to provide excellent 3D target imaging. Using the treatment beam, 2D projection images are acquired at every degree as the gantry rotates in a 200-degree arc around the patient. This set of planar images is then reconstructed into a cone beam CT.

Available as an option on PRIMUS, MVision represents a major breakthrough in IGRT.

- Streamlined workflow optimizes convenience and accuracy
- In-line architecture eliminates the need for add-on imaging hardware, simplifying maintenance and quality assurance
- One source, one beam, one detector results in one isocenter for imaging and treatment, requiring only a single calibration
- MVCB imaging offers unique benefits in challenging situations, including large patients and targets in proximity to High-Z materials





Service Built on Experience

PRIMUS is backed by one of the most extensive service and support organizations in the world, offering a wide range of programs specifically designed to meet the needs of Siemens' radiation oncology customers.

- **Siemens Oncology Learning Center** offers comprehensive training on the efficient and effective operation and service of linear accelerator equipment and software
- **VELOCITY™** is an exclusive service that can speed commissioning time from three weeks to three days
- **MOMENTUM™** is a suite of services that allows customers to apply the latest treatment techniques with greater efficiency, speed, and effectiveness
- **Siemens On-Site Oncology Applications Specialists** work on-site with treatment staff to streamline workflow processes and develop greater user comfort and confidence with new technology and procedures
- **Siemens Remote Service (SRS)** is a comprehensive infrastructure for optimizing system availability, preventing unscheduled downtimes, and improving patient planning and throughput





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