

### Healthcare Sector Imaging & Therapy Systems Division

#### **Siemens Demonstrates Strong Commitment to Cancer Care at ASTRO 2011**

Showcases wide-ranging portfolio of oncology care solutions

**Miami, September 29, 2011 – Siemens Healthcare returns to the Annual Meeting of the American Society for Radiation Oncology (ASTRO), October 2-6 in Miami, with a broad range of solutions that multiply chances – for life. At this year’s booth (#203), Siemens will demonstrate its strong commitment to battling cancer with a portfolio that covers the spectrum of oncology care, with a particularly strong focus on diagnostic oncology imaging in in-room and outside-the-room imaging as well as in radiation therapy.**

To highlight Siemens’ commitment, the booth will feature live presentations on Siemens’ premier innovations for the ARTISTE™ Solution linear accelerator. One stage will feature IM-RealART™ Solution, based on the CTVision™ system in conjunction with the PROWESS® RealART Treatment Planning software, and the latest Siemens’ stereotactic offering with a high dose rate of 2,000 MU/minute at four flattening filter-free energy selections. Siemens will spotlight the power of Molecular Imaging in Oncology with the large-bore Biograph® mCT positron emission tomography (PET)/computed tomography (CT) system. The InLine-kView imaging, CTVision and the Biograph mMR – the world’s first integrated whole-body molecular MR with simultaneous data acquisition technology – will further demonstrate Siemens’ strengths in imaging: on-board, inside and outside the treatment room.

#### **MR in Oncology**

Siemens redefines Magnetic Resonance in Oncology with its unique Total imaging matrix (Tim™) technology with ultrafast, high-quality imaging. Tim technology enables multi-region exams without patient or coil repositioning, and enhances oncologic imaging workflow and efficiencies to the next level. *syngo* MR applications powered by Tim provide image morphology, access function (fMRI), and metabolites (spectroscopy) non-invasively. Tim also enables radiotherapy planning through a partnership with CIVCO and the company’s flat tabletop indexing system and positioning accessories. And Siemens’ proven MR excellence combined with high-sensitive PET technology in a revolutionary design could further support tumor characterization and customized radiotherapy planning.

The Biograph mMR, the world's first integrated whole-body molecular MR with simultaneous data acquisition technology, received FDA clearance in June. This revolutionary system comprises a MR scanner and an integrated PET system with an architecture that performs as one. With this new 3 Tesla (3T) hybrid system, Siemens engineers have succeeded for the first time in simultaneously capturing MR and PET data with a whole-body system. While MR provides exquisite morphological and functional details in human tissue, PET goes further to investigate the human body at the level of cellular activity and metabolism. The innovative system has the potential to be a particularly valuable tool for identifying oncological conditions of disease and in supporting the planning of appropriate therapies.

### **Biograph mCT 20 Excel**

Siemens also will showcase the power of Molecular Imaging in Oncology with the large-bore Biograph® mCT. Designed to ensure that PET/CT imaging is available to medical institutions worldwide – including community hospitals, smaller imaging centers and emerging markets exploring hybrid imaging for the first time – Biograph mCT 20 Excel offers unique imaging technologies such as 20-slice adaptive CT; standard PET time of flight; HD•PET for uniform resolution across the entire field of view; and HD•Chest, a technology that reduces blur created by respiration during PET•CT studies. Biograph mCT 20 Excel boasts a large 78 cm bore and 227 kg (500-pound) capacity table optimized for large patients. The large bore also easily accommodates radiotherapy positioning devices for more accurate treatment planning and patient comfort.

Biograph mCT 20 Excel matches the Biograph's reputation for high uptime and is recognized by industry reporting organizations such as MDBuyline for system performance and reliability. As with all Biograph systems, Biograph mCT 20 Excel has a full upgrade path on both CT and PET to ensure that the system can grow to meet the needs of expanding healthcare facilities.

### **Multiple-X: high dose rate speeds up stereotactic radiation therapy**

For the Artiste linear accelerator, Siemens has developed the new Multiple-X feature, which is capable of significantly increasing the speed of stereotactic radiation therapy. Stereotactic treatment is a highly precise guided radiation treatment in which very high doses are applied to a tumor in one or more radiation sessions known as fractions.

At present, patients undergoing stereotactic radiation spend up to 60 minutes on the treatment table. The usual radiation dose rate in monitor units (MU) is between 50 and 500 per minute. With Multiple-X, Artiste enables a dose rate of up to 2,000 MU per minute, boosting the efficiency of radiation delivery and potentially shortening treatment time by up to 80 percent.

Different intensities of energy are necessary for radiation therapy depending on the position and type of the tumor. Multiple-X provides four different levels of beam energies without flattening filters (flattening filter free beams, FFFB): 7 MV (megavolts), 11 MV, 15 MV and 17 MV. These energy options can be combined with one flat energy, enabling further application options such as intensity-modulated radiation therapy (IMRT), 3D conformal radiotherapy (3DCRT) and other stereotactic radiation therapies with a conventional beam.

### **In-Line kView – innovative imaging for radiation therapy**

For image-guided radiation therapy (IGRT), Siemens offers In-Line kView, an innovative imaging method. A treatment beam optimized for imaging is used on the accelerator equipped with a flat panel imager to record 2D and 3D images of a tumor and surrounding tissue. The resulting image quality is comparable to that of X-ray images, but requires a smaller dose than the MV imaging process commonly used in radiation therapy.

Assisted by intelligent software applications, the clinician compares the image recorded by In-Line kView with the CT image from the planning phase to adjust patient positioning prior to treatment. If the tumor shifts or the patient is in the wrong position, the patient can be quickly repositioned prior to the treatment. The In-Line kView imaging option also allows selection of the imaging quality depending on the dose rate, thus supporting dose management for the patient.

### **CTVision**

CTVision is comprised of a CT gantry on rails system, a Siemens linear accelerator and a treatment table located within the treatment room offering precise positioning accuracy. This unique in-room combination provides low-dose CT imaging with diagnostic image quality immediately prior to treatment for a fast and focused image-guided radiation therapy (IGRT).

The CT gantry travels smoothly on rails, enabling fast image acquisition, while the patient remains positioned on the treatment table. CTVision offers the same high-contrast diagnostic CT image quality as the original planning CT in the treatment room. The CT images feature the best soft-tissue contrast of any IGRT modality, which facilitates rapid image comparison and repositioning decisions. With CTVision, a CT scan can be performed and the treatment delivered during a single time slot – in one room.

With its exceptional mechanical strength and unique lifting mechanism, the rotatable 550 TxT Treatment Table enables the treatment of patients weighing up to 550 pounds (250 kg). The *syngo*<sup>®</sup> Adaptive Targeting<sup>™</sup> software automatically matches the newly acquired CT images with

the planning CT and proposes the table offset. Intelligent tools simplify comparison of the two diagnostic image data sets.

**Modular, flexible, expandable: the Artiste linear accelerator**

The Artiste linear accelerator provides a broad portfolio of software and hardware tools for fast and precise conventional radiation therapy, including IGRT, ART (adaptive radiation therapy), IMRT, SRT, and SBRT (stereotactic body radiation therapy).

One hundred and sixty computer-controlled tungsten leaves continuously adapt the radiation to the tumor's contours. The multileaf collimator 160 MLC, a standard component of Artiste, combines fast leaf movement of 4 cm per second with high resolution and low radiation leakage. High accuracy in positioning of the leaves and an abrupt drop in the dose in the penumbra enable radiation therapy of high precision while simultaneously protecting healthy surrounding tissue.

The **Siemens Healthcare Sector** is one of the world's largest suppliers to the healthcare industry and a trendsetter in medical imaging, laboratory diagnostics, medical information technology and hearing aids. Siemens offers its customers products and solutions for the entire range of patient care from a single source – from prevention and early detection to diagnosis, and on to treatment and aftercare. By optimizing clinical workflows for the most common diseases, Siemens also makes healthcare faster, better and more cost-effective. Siemens Healthcare employs some 48,000 employees worldwide and operates around the world. In fiscal year 2010 (to September 30), the Sector posted revenue of 12.4 billion euros and profit of around 750 million euros. For further information please visit: [www.siemens.com/healthcare](http://www.siemens.com/healthcare)

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