

Healthcare Sector Imaging & Therapy Systems Division

Siemens Intensifies Fast, Focused Cancer Treatment Approach at AAPM/COMP '11

FDA-cleared In-Line kView, Multiple-X and Definition AS Open help increase speed and precision of radiation therapy delivery for a virtually seamless oncology workflow

Vancouver, Canada, July 31, 2011 – Leveraging its strengths as an engineering company and a technology leader, Siemens will publicly introduce three new additions to its radiation oncology product portfolio – two involving imaging solutions and one a breakthrough in speed and effectiveness in treating cancerous tumors. Siemens' new In-Line kView™ megavoltage cone beam computed tomography (CT) solution has been added to its highly innovative ARTISTE line of linear accelerators, providing improved image quality and dose performance for its well-established MVision™ product. Also added to the ARTISTE is Siemens' Multiple-X™ option, which allows users to choose up to four unflattened beams with dose rates up to 2,000 monitor units (MU) per minute for potentially greater efficacy and shortened treatment times. Additionally, the Definition AS Open CT System, billed as “One of the World’s First Adaptive Simulators,” provides diagnostic image quality with 20 or 64 slices, a hugely innovative tool set required for advanced CT simulation and a comprehensive set of dose-reduction innovations. All three developments are scheduled for introduction at the 2011 Annual Meeting of the American Association of Physicists in Medicine (AAPM)/Canadian Organization of Medical Physicists (COMP), July 31-Aug. 3 at the Vancouver Convention Centre, Siemens Healthcare (Booth #737). Together, these innovative solutions help foster a seamless oncology workflow that further unites imaging and therapy and reflects Siemens' leadership in these critical areas.

Modular, flexible, expandable: the ARTISTE Solution

The ARTISTE Solution linear accelerator's digitally controlled design provides the ability to customize a system to the needs of specific patient treatment techniques or workflows and enables clinicians to make critical adjustments quickly, making adaptive radiation therapy (ART) a reality. The ARTISTE boasts leading-edge precision with a max/min measured central axis treatment circle of 0.7 mm/0.3 mm. The 160 MLC™ multileaf collimator provides best-in-class tumor conformity by combining fast leaf movement of 4 cm per second with a leaf accuracy of 0.5 mm and the lowest leakage for sparing

1 / 3

of healthy surrounding tissue. With the 550TxT™ treatment table accuracy of 0.5 mm supporting 550-pound patients on the table and a gantry accuracy of 0.1 mm, the ARTISTE with In-Line kView is designed for rapid, low-dose imaging. Multiple-X allows for fast, high-dose-rate treatments for critical procedures demanded by rapidly evolving clinical needs.

Multiple-X: high dose rate, faster procedures

With Multiple-X, the ARTISTE Solution provides a dose rate of up to 2,000 MU per minute, enabling the user to decrease treatment time. Multiple-X provides four selectable flattening-filter-free (FFF) beams at nominal energies: 7 megavolts (MV), 11 MV, 14 MV and 17 MV.

In-Line kView: innovative imaging for radiation therapy

In-Line kView offers ARTISTE users kV-like images with the ideal balance between imaging dose, image quality and speed with limited artifacts. Intelligent tools compare In-Line kView images with the planning CT for efficient and accurate table adjustments. A unique carbon target generates a broader spectrum of kV energies in the MV imaging beam and along with a more sensitive flat panel detector, In-Line kView can increase the contrast-to-noise ratio up to three times or reduce dose by up to two thirds compared to conventional MV cone-beam imaging. Additionally, with In-line kView, the imaging dose can be included in the treatment plan.

Definition AS Open: low-dose, high-quality CT

A slightly modified version of Siemens' highly successful diagnostic CT family, the SOMATOM Definition AS Open delivers diagnostic image quality (0.4 mm isotropic resolution) at low dose (~1cGy), enabling precise contouring for planning while minimizing patient exposure. Moreover, the system offers a diagnostic scan field of view (FOV), a 65 cm reconstructed FOV with high-accuracy CT numbers for planning purposes if needed, and an 80 cm reconstructed FOV (which is also the full bore size) for scanning the entire patient, therefore meeting a large variety of patient needs.

The Definition AS Open is presently the only CT simulator that can be upgraded from its standard 20-slice configurations to 64 slices for greater operational flexibility, patient comfort or advanced future applications. It has the exclusive Siemens Straton Tube,™ which prevents the need for tube cooling in virtually every case due to a unique design focused on dissipation rate as opposed to heat-loading for long respiratory gating runs with very short pitch rates down to 0.09. In addition, the CT simulator system has dose-sparing features, as well as a table top for simulation that deflects less than 2 mm and can support patients weighing up to 500 pounds. Additionally, Siemens offers unique gating capabilities that track amplitude, phase and/or time, and allows editing of the waveform at the console for a more optimal data set for treatment planning. Simulation features include advanced

segmentation and model-based contouring, iso-center calculation, automatic laser alignment, and beam line and aperture settings.

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