

New Siemens SOMATOM Perspective CT Scanner Focuses on Cost-effectiveness

System marries high image quality and low radiation dose with price pressure sensitivity

Chicago, November 28, 2011 – At the 97th Scientific Assembly and Annual Meeting of the Radiological Society of North America (RSNA), Siemens Healthcare (Booth #822, East Building/Lakeside Center, Hall D) is unveiling the SOMATOM® Perspective¹ – the first computed tomography (CT) scanner to offer the eMode software solution, which may potentially determine the best correlation between dose, efficiency and image quality, and may adjust the required scan parameters automatically. Potentially suited to cover a variety of clinical fields, the SOMATOM Perspective may potentially allow clinics and practices to extend their range of available examinations. The system's operation can potentially be optimized for the individual scan – for example, in terms of tube current or scan velocity – relieving wear and tear on the CT. The system is an example of Siemens approach to delivering innovative solutions that provide maximum value to customers – primary goals of the Healthcare Sector's recently announced Agenda 2013.

The SOMATOM Perspective's eMode software (the "e" represents efficiency) can be selected from the user interface control panel. eMode may potentially determine and automatically select the scan parameters so that the CT operates with as low a load as possible, potentially minimizing wear and increasing the scanner's life cycle.

With its slim gantry and footprint of 18 square meters, the SOMATOM Perspective has the potential to be placed even in smaller rooms. On average, it may use just 71 kVA of electricity and may emit approximately 7 kW of heat. To help facilitate its use in daily routines and possibly minimize exam times, the SOMATOM Perspective is equipped with new available Fully Assisting Scanner Technologies (FAST) features that may potentially simplify and automate time-consuming, complex procedures, thus potentially supporting clinical personnel at every stage of the CT examination.

The Interleaved Volume Reconstruction method may potentially enable high-quality imaging, using information from 128 CT slices to facilitate detection of even extremely small diagnostic details. In combination with a 38 mm detector width, the SOMATOM Perspective can potentially scan long ranges rapidly, making it an option for thoracic examinations. A 50 cm area can potentially be scanned with high image quality in 5.21 seconds, possibly enabling the SOMATOM Perspective to image all body regions and address problems of neurology or oncology. Siemens Iterative Temporal Resolution Improvement Method (iTRIM) employs an iterative image reconstruction algorithm that may potentially raise overall image quality in cardiac examinations and curbs noise, possibly resulting in a 195-millisecond temporal resolution. Motion artifacts are potentially reduced, possibly enabling accurate diagnosis even during a rapid heartbeat.

Reduced patient dose, increased comfort

To the patient, the lowest possible radiation dose is as critical as high image quality. CARE (Combined Applications to Reduce Exposure) Dose4D adapts the X-ray tube current in real time for the entire scan region, ensuring consistently high image quality while keeping dose as low as possible for all organs and types of anatomy. Another potential dose-saving technology is Sinogram Affirmed Iterative Reconstruction (SAFIRE), a method for iterative CT image reconstruction based on raw data.² SAFIRE may potentially achieve a dose savings of up to 60 percent for a wide range of applications. With a reconstruction speed of up to 15 images per second, SAFIRE may be suited for daily clinical routines. An Illumination MoodLight with adjustable LED panel is integrated into the SOMATOM Perspective to brighten the sterile atmosphere of many exam rooms.

¹The SOMATOM Perspective CT scanner is pending 510(k) clearance, and is not yet commercially available.

²Depending on the clinical task, patient size, anatomical location, and clinical practice, the use of SAFIRE can help to reduce radiation dose while maintaining pixel noise, low contrast detectability and high contrast resolution. Phantom measurements showed that high contrast resolution and pixel noise are equivalent between full dose WFBP images and reduced dose SAFIRE images. Additionally, SAFIRE can reduce spiral artifacts by using iterations going back and forth between image space and raw data space. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task. A Model Observer evaluation showed that equivalent low contrast detectability can be achieved with 54% to 60% less dose using SAFIRE at highest noise reduction strength for thin (0.6 mm) reconstruction slices in simulated body and head phantoms for low contrast objects with different contrasts.

Some of the products mentioned here are not commercially available in all countries. Due to regulatory reasons, the future availability in any country cannot be guaranteed. Further details are available from the local Siemens organizations.

Launched by **Siemens Healthcare Sector** in November 2011, Agenda 2013 is a two-year global initiative to further strengthen the Healthcare Sector's innovative power and competitiveness. Specific measures will be implemented in four fields of action: Innovation, Competitiveness, Regional Footprint, and People Development.

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 51,000 employees worldwide and operates around the world. In fiscal year 2011 (to September 30), the Sector posted revenue of 12.5 billion euros and profit of around 1.3 billion euros. For further information please visit: www.siemens.com/healthcare.

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