

Siemens Demonstrates Flash Speed, Lowest Dose at ACC 2009

SOMATOM Definition Flash sets the bar higher for cardiology

Orlando, Fla., March 26, 2009 – Siemens Healthcare (www.usa.siemens.com/healthcare) demonstrates the fastest speed and lowest dose for cardiac applications with the SOMATOM® Definition Flash dual source computed tomography (CT) scanner at the 58th Annual Scientific Session of the American College of Cardiology (ACC) from March 29-31 in Orlando, Fla., at booth #1842. Siemens CT covers the entire spectrum of cardiology, from early detection to acute care through follow-up.

“The SOMATOM Definition Flash requires only a fraction of the radiation dose that systems previously required to scan even the tiniest anatomical details faster than ever before,” said Kulin Hemani, vice president, CT, Siemens Medical Solutions USA, Inc. “Scanning the thorax, including the heart, can be done in only 0.6 seconds, taking the burden of breath-holding off the patient and allowing functional imaging for body regions up to 48 cm.”

Flexible cardiac examinations with a minimum radiation dose

Temporal resolution of 75 ms and scan speed of up to 43 cm/s make heart-scanning possible, with dose levels below 1 millisievert (mSv), whereas the average effective dose required for this purpose usually ranges from 8 mSv to 40 mSv. The patient is moved through the CT-scanner more than twice as fast as with any conventional system, and at the same time, requiring a much lower radiation dose than conventional scans. In comparison, the X-ray radiation that the average person is exposed to each year from natural sources amounts to 2 mSv to 5 mSv. The dose values of the new Siemens CT scanner lie far below those of an intracardiac catheter examination, thus opening up possibilities for using CT scanners for routine cardiological examinations.

A scan of the entire heart can be performed in only 250 milliseconds, which is less than half a heartbeat. In addition, it is possible for physicians to reliably display a heart with a fast pulse or an irregular heart beat without using beta blockers, thus simplifying the workflow and yielding clinical

and financial advantages. The SOMATOM Definition Flash is the only CT scanner on the market that enables the use of noninvasive cardiological diagnostic techniques as routine applications at the lowest possible radiation exposure levels.

Double contrast in routine daily work

The second generation of Dual Energy imaging will introduce a new imaging quality. The contrast in CT scans will be increased without having to apply the higher radiation dose previously required. This is achieved via a new, selective photon shield which blocks unnecessary parts of the energy spectrum. It thereby provides improved separation of the two simultaneous scans with low and high photon energy, without causing a higher radiation exposure than would result from an individual, conventional CT examination with only one energy source. Thus, the SOMATOM Definition Flash can always provide a double contrast which, for the first time ever, can also be used to classify the chemical composition of tissues via a CT scan in routine daily work.

Dose protection for radiation-sensitive organs

Another technical development for keeping the patient's radiation exposure as low as possible is the X-CARE application. For the first time ever, this application selectively reduces the radiation exposure of dose-sensitive anatomical regions, such as the female breast. This is done by switching the X-ray tube assemblies off during the rotation phase in which the anatomical regions concerned are most directly exposed to radiation. In this way, it is possible to reduce the radiation exposure of individual anatomical regions by up to 40 percent.

Furthermore, an adaptive dose shield blocks irrelevant prepiral and postpiral radiation with dynamic diaphragms, thus ensuring that only a minimum and clinically essential radiation exposure occurs. This enables an additional 25 percent reduction of the dose required for routine examinations. The CARE Dose4D software, which analyzes the individual cross-sectional anatomy in real time and adapts the emitted X-ray dose accordingly, also helps to reduce radiation exposure.

In addition, Siemens CT Acute Care Engine provides a complete clinical portfolio for imaging emergency patients from head to toe. Using fast, direct 3D reconstruction, images can be reviewed before the patient is off the table. The SOMATOM Definition Flash, in combination with CT Acute Care Engine, streamline clinical workflow for cardiac, vascular, musculoskeletal, and stroke evaluation, turning data into diagnostic outcomes within minutes. By combining CT scanner features and programs, solutions can be designed to meet and exceed a site's acute care needs.

The **Siemens Healthcare Sector** is one of the world's largest suppliers to the healthcare industry. The company is a renowned medical solutions provider with core competence and innovative strength in diagnostic and therapeutic technologies as well as in knowledge engineering, including information technology and system integration. With its laboratory diagnostics acquisitions, Siemens Healthcare is the first integrated healthcare company, bringing together imaging and lab diagnostics, therapy, and healthcare information technology solutions, supplemented by consulting and support services. Siemens Healthcare delivers solutions across the entire continuum of care – from prevention and early detection, to diagnosis, therapy and care. Additionally, Siemens Healthcare is the global market leader in innovative hearing instruments. The company employs around 49,000 people worldwide and operates in 130 countries. In the fiscal year 2008 (Sept. 30), Siemens Healthcare reported sales of €11.2 billion, orders of €11.8 billion, and Sector profit of €1.2 billion. Further information can be found by visiting <http://www.siemens.com/healthcare>.