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Healthcare Sector
Imaging & Therapy Systems Division

Highly Efficient Workflow and Improved Diagnostic Confidence

ACUSON SC2000 ultrasound system, release 1.6, redefines imaging efficiency, measurements and image quality from 2D to 4D exams.

New Orleans, April 5, 2011 — Siemens Healthcare will showcase the 1.6 release of its ACUSON SC2000™ volume imaging ultrasound system at the 60th Annual Scientific Session and Expo of the American College of Cardiology in New Orleans, from April 2-5, 2011. At booth 1629, the company will exhibit unique, automated applications that significantly simplify echocardiography workflow and reduce exam times in both 2D routine exams and volumetric imaging and analysis. Building upon their leadership in echocardiography, Siemens will also demonstrate how IN Focus Technology, derived from the ACUSON Sequoia™ ultrasound system, redefines the paradigm of image quality and diagnostic confidence in echocardiography.

The ACUSON SC2000 system is the only system that delivers the same detail resolution across the entire image without sacrificing frame rates. “Siemens Ultrasound has always pioneered paradigm-shifting technologies,” said Dr. Norbert Gaus, CEO Clinical Products Division, Siemens Healthcare. “The IN Focus Technology acquires and processes information at an unprecedented 2.88 gigabytes per second, faster than any echocardiography system in the world. This leads to never-before-seen detail and contrast resolution throughout the entire field of view delivering more clinically relevant information, ultimately benefiting a patient’s diagnosis.”

An advancement to the legendary ACUSON Sequoia coherent image formation technology, IN Focus Technology enables the user to focus on the entire field of view instead of a single focal zone revealing more detailed information in one image. By using the power of 64 parallel receive beams, IN Focus dramatically improves image quality at all depths without any user intervention to ideally display the cardiac structure, motion and blood flow information for superior and efficient diagnostic imaging.

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Automated Measurements and Workflow Protocols Reduce Exam Times

The ACUSON SC2000 system exclusively features the eSie Measure™ Workflow Acceleration package. This is the first application in the industry to provide fully automated measurements for routine echo exams which increase workflow efficiency, as well as the reproducibility and quality of each exam, while additionally addressing the issue of repetitive stress injuries in sonographers. A result of developing artificial intelligence specifically for imaging systems, eSieScan™ workflow protocols developed by Siemens Corporate Research in Princeton, N.J., were integrated into the system to further streamline exam workflows on both the user level and in the entire lab. These protocols bring higher reproducibility and quality standards to the echocardiography workflow by increasing the consistency of results and ensuring that exams are complete. Customizable according to user or department requirements, eSieScan workflow protocols dramatically reduce the need for user interaction and the number of keystrokes during the imaging process.

“One of the most significant benefits using eSieScan workflow protocols is the reduction of exam times,” said Adrien Ntinunu, Sonographer at Ohio State University, Columbus, Ohio. “Typically, manual measurements can take an average of 20-25 minutes. The eSie Measure Workflow Acceleration package has saved us significant time in each exam. It is useful for every patient, especially for aortic insufficiency and aortic stenosis patients.”

From Volume to Quantification in 15 Seconds

Called “Echo in a Heartbeat,” Siemens’ unique real-time full-volume imaging capabilities on the ACUSON SC2000 system allow wider patient access by delivering vastly more diagnostic information than today’s conventional 3D imaging methods. In one heart cycle and without stitching or ECG gating, Echo in a Heartbeat acquires the full volume of the heart at a 90 by 90 degree angle and 16 centimeters depth at up to 40 volumes per second – including volumetric color flow and accurate volume quantification for the left and right ventricle. Easily integrated into a routine adult echocardiography exam, full-volume real-time imaging offers new workflow pathways to improve diagnostic confidence and efficiency.

In order to fully harness the clinical value that the information wealth of 4D imaging brings to patient care in echocardiography, Siemens has integrated a number of technologies resulting from the latest research and development into the ACUSON SC2000 real-time full-volume ultrasound system. eSie LVA™ (Left Ventricle Analysis) Volume is the latest knowledge-based application within a group of workflow acceleration techniques unique to Siemens. After acquiring a volume, eSie LVA automatically draws the contour of the left ventricle from the volume dataset, automatically generating Ejection Fraction (EF) and volume data in as little as 15 seconds. Using the latest machine learning

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technologies specifically developed for echocardiography by Siemens Corporate Research, the ACUSON SC2000 system compares the clinical case on hand with results from a database containing thousands of clinical cases. The full integration of the latest knowledge-based information technologies to detect and track volume contours enables this unmatched one-step calculation, which considerably reduces exam time and improves result consistency, finally leading to improved patient care. Giving physicians a better overview of available patient data, eSie LVA supports the standard American Heart Association (AHA) segmentation for 16 and 17 segments, standardizing exam protocols between computed tomography (CT), magnetic resonance imaging (MRI) and molecular imaging ultimately offering physicians more comprehensive information about their patients.

Knowledge-based Applications Deliver Rapid, Accurate, and Reproducible Results

Siemens will also showcase unique knowledge-based workflow applications on various platforms, which are designed to automate measurements for rapid, accurate, and reproducible results.

- *syngo*® Velocity Vector Imaging™ (VVI) technology uses individual vectors to display direction and relative velocity of tissue from frame to frame to instantaneously measure motion at any point in the cardiac cycle. This unique visual representation of cardiac contraction-relaxation mechanics allows easy gathering of information for a variety of applications, including rapid assessment of ventricular synergy in heart failure.
- Using sophisticated system intelligence based on learned pattern recognition technology, *syngo*® Auto Left Heart (Auto LH) technology automatically generates left atrial and left ventricular volumes and ejection fractions rapidly and reliably.
- Rapid Stress™ volume stress echo application features full-volume acquisition in one single heartbeat per stage and auto-extraction of reference planes for comparison. The resulting volume stress workflow enables the only volume stress echo solution for patients with arrhythmia. Consequently, faster acquisition time and comprehensive review of all wall segments in one single capture leads to potentially improved accuracy and time savings.

The here-mentioned products/features are not commercially available in all countries. Due to regulatory reasons, future availability in any country cannot be guaranteed. Please contact your local Siemens organization for further details.

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.

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