

Healthcare Sector Imaging & IT Division

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Siemens Integrates ARFI Imaging Into Ultrasound

The Acuson S2000 ultrasound system with Virtual Touch applications improves liver diagnosis

Siemens Healthcare is presenting one of the most innovative technologies for its Acuson S2000 ultrasound system at the Medica from November 19 – 22, 2008 in Duesseldorf, Germany. The Virtual Touch Tissue Imaging and Virtual Touch Tissue Quantification applications are the first commercially available implementations of ARFI (Acoustic Radiation Force Impulse). Similar to a physical palpation exam, these leading-edge applications represent a new dimension of diagnostic information by interrogating the mechanical strain properties or stiffness of tissue, which may be correlated with pathology. Both applications are particularly suited to evaluating liver tissue.

An examination using Virtual Touch technology is not only faster than conventional methods, it is also significantly more comfortable for the patient. Virtual Touch applications can provide physicians with information that could previously only be obtained via a biopsy, an invasive procedure that is both time-consuming and stressful. Using Virtual Touch applications, tissue is compressed using acoustic energy enabling the evaluation of the mechanical properties of deep areas and the detection of changes in the tissue. Without any need for manual compression quantitative and qualitative information can be obtained.

Virtual Touch Tissue Imaging and Virtual Touch tissue quantification are the first implementation of ARFI and are highly promising in identifying early stages of liver diseases causing cirrhosis. Early studies show that Virtual Touch Tissue Quantification proved extremely sensitive in diagnosing fibrosis and distinguishing it from normal liver and cirrhosis. Dr. Mireen Friedrich-Rust at the Johann Wolfgang Goethe University Hospital in Frankfurt am Main, Germany, has found that "Virtual Touch Tissue Quantification is a promising procedure

for quantifying the liver fibrosis stage using B mode controlled ultrasound in patients with viral hepatitis.” The new technology is already in use at several hospitals in Europe.

Background information:

The Acuson S2000 ultrasound system is the latest ultrasound platform from Siemens Healthcare suited for general imaging, including vascular diagnostics and echocardiography, as well as obstetrics and gynecology. The system is also capable of integrating Siemens' ground-breaking Silicon Ultrasound technology, which introduces the first entirely new class of ultrasound transducers in 40 years. New applications for the Acuson S2000 were designed to enhance patient care and significantly improve workflow in hospitals and imaging centers.

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 more than 49,000 people worldwide and operates in 130 countries. In the fiscal year 2008 (Sept. 30), Siemens Healthcare reported sales of €11.17 billion, orders of €11.78 billion, and group profit of €1.23 billion. (Preliminary figures) Further information can be found by visiting <http://www.siemens.com/healthcare>.