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New free hand ultrasound system improves work flow and reduces scan time

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Researchers have developed an automated 3-D mapping and labeling system that reduces scan time and improves the work flow, efficiency, and accuracy of routine freehand ultrasound exams, according to a study to be presented at the ARRS 2010 Annual Meeting in San Diego, CA.

"The labeling and measuring of free hand ultrasound images are operator dependent, time consuming, and are usually manually performed," said Calin Caluser, MD, lead author of the study. "The new 3-D mapping and labeling system that we have developed automatically records information and replaces steps in the image acquisition process (that are typically performed manually) with a simple key stroke," said Caluser.

The study measured the timing and accuracy of the new system in a realistic breast ultrasound phantom with small masses scattered throughout. "Results showed that the average scanning time per target using the new mapping and labeling system was up to 16 seconds per target; compared to at least 51 seconds per target using the standard scanning protocol. The system accurately measured and recorded the location of the masses in relation to the nipple (up to 2 mm), which is difficult to obtain using the manual method," said Caluser.

"The new system can be added to any existing ultrasound machine and the reduced time for scanning the patient can translate in improved work flow and efficiency," he said.

"In addition to the reduced examination time, there are other potential

benefits to the patients. The mapping and labeling system can help obtain a second opinion from a different physician, may reduce the number of repeat ultrasound exams, and also could help in planning a patient's treatment. With clinical experience, we hope to improve the system and bring more features to help the patients and health care providers," said Caluser.

Provided by American College of Radiology

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