Adding Sounds to Simulated Ultrasound Examinations

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Technology description

The University of South Carolinais offering licensing opportunities for this novel method of ultrasound training with the addition of ausculatory sounds.
Invention Description:
This invention is a novel auscultation device, which incorporates a unidirectional microphone and appropriate probe of a standard clinical ultrasound unit, which enables the user to hear the functions of an internal organ, especially the heart. The audio file and video images this invention produces are combined in a digital recorder to produce an ultrasound image with accompanying, fully synched, audio sound of the examined organ. With this method, real-life heartbeats can be incorporated into an ultrasound manikin.
This invention enhances the learning experience for simulator-based instruction of ultrasound for better instruction regarding (a) physiologic and pathophysiologic functions of human and animal organs; (b) clinical ultrasound as an aid in diagnosis and treatment; and (c) essential methodology to become competent in the applications of ultrasound technology when conducting a physical exam.
Background:
Educational/skill acquisition needs within the Ultrasound Imaging discipline are no doubt enormous. With current skill shortages and high cost of devices, it is certainly cost effective for providers to have alternative means of training professionals that are both effective, cost efficient and quick. Simulator-based instruction is one way to achieve these goals and the subject technologies not only provide this opportunity but also come with unique capabilities that aren't available in existing systems.
A preliminary assessment of the technology niche shows that the market niche is open-lots of opportunities exist for growth. The market seems to be expanding due to higher demand, changing habits, the burgeoning emphasis on technology, and the paradigm shift towards greater emphasis on self-learning/assessment. Though a number of patents exist in this technology niche, a good number of them lack the unique capabilities of the subject technologies.

Application area

Immediate applications include ultrasonography of the heart, lungs, blood vessels and fetus.

Advantages

• Current ultrasound images do not incorporate auscultation sounds from the organ being viewed as this invention does.
• For better patient care and safety, ultrasound technology should be applied where appropriate while conducting a physical exam of the patient. This invention combines auscultation and ultrasound methods for simulation teaching modules to provide enhanced instruction.

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