Who is AuSIM?

AuSIM is an up-and-coming company located in Los Altos, California, near Stanford University and in the heart of Silicon Valley. It was founded in 1998 by William Chapin to provide positional 3D audio simulation solutions to mission-critical applications. Mr. Chapin is a designer and an engineer, with over a dozen years' experience in 3D simulation technologies. He has gathered a team of bright, enthusiastic engineers and acousticians to help grow AuSIM into the world leader in Audio Simulation.

Engineering Solutions with Audio Simulation for Mission-Critical Applications

Check us out!
http://audiosimulation.com

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AuSIM
Engineering Solutions

What does AuSIM do?

AuSIM develops technology and products based on the simulation of audio propagation to a listener. This simulation is achieved by digitally shaping an original signal (a "sound source") in the same way it would be shaped naturally, after propagating across a room and entering a listener's ear canals.

How is Audio Simulation useful?

With the amazing amount of information available today, our visual systems are becoming overloaded with data. Yet most aural information displays are extremely limited in content, similar to grayscale images with no depth of focus. Audio Simulation puts color and depth, lost when the sound does not propagate through air, back into the reproduced sound, so that each sound can be readily distinguished from many others.

Most listeners have a natural ability to tune in to a particular sound, such as a voice at the next table in a crowded restaurant. Audio Simulation enables this so-called "cocktail party effect" for reproduced sounds such as telephony, musical recordings, data auralizations, alarms, broadcasts, voice synthesis, and sound effects. By making these sound more natural, the long-term listener is able to process **more information, more intelligently,** with less fatigue. Better performance saves time and money.

What is AuSIM3D™?

The sound is adjusted through filtering with digital signal processing (DSP) techniques, using algorithms extracted from models of our physical world. AuSIM analyzes the physics of sound and the behavior of waves interacting with objects and the listener's head to formulate models that approximate the real world. These models and algorithms constitute AuSIM's technology, called AuSIM3D™.

When modeled closely on the physical world, Audio Simulation creates a realistic environment for the listener(s). As part of modeling the physical world, AuSIM3D™ accounts for the 3D position and 3D orientation of not only the listener but of all of the sound sources potentially audible to that listener. AuSIM3D™ continuously updates the model as the listener and sound sources move through the environment.
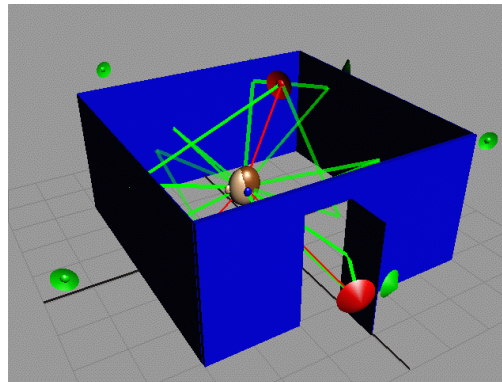
Developing AuSIM3D™ involves the measurement and analysis of physical sound wave interactions with physical objects, the creation of innovative models of these interactions ever more closely approximating the real world, the extraction of these models into efficient algorithms, and the implementation of the algorithms into optimized software. Rendering AuSIM3D™ involves real-time sensing of the listener and other physical attributes to be mapped into the synthetic world and real-time processing of 3D vectors, filter coefficients, and sound samples. Audio Simulation requires expertise in the areas of physics, wave mechanics, acoustic theory, linear systems, control systems, signal processing, and real-time system engineering.

Who needs AuSIM3D™?

AuSIM is focused on mission-critical applications, in which the listener's work performance depends on the ability to discern aural information. The fighter pilot who recognizes the sound of threats from behind and below can save lives and resources with improvements in the aural displays. Air-traffic controllers can recognize pilots by coincident position of voice and radar indication. Teleconferences can be more natural and more efficient with positioned voices. Search-and-rescue training can be more effective with accurately localized audio cues.

AuSIM3D™ can save time, money and even lives. **Every person who uses headsets as a part of their work could do that work better with AuSIM3D™.**