

Company Overview

Check us out!
<http://audiosimulation.com>

AuSIM
Engineering Solutions

*Audio Simulation
for Mission-Critical
Applications*

AuSIM develops and delivers audio simulation solutions that enhance sound perception. The technology in AuSIM solutions enables the creation or augmentation of an acoustic environment by simulating the propagation of audio through that environment.

Human Auditory Perception

The under-utilized human auditory system is more capable than most people recognize. Sound propagating through the physical world to a listener's ears adopts an aural signature. Humans perceive these signatures and create a mental image of the environment that allows them to discriminate independently originating sounds. Humans do this effectively in noisy restaurants and lobbies, tuning into desired sound and tuning out noise, a perceptual phenomenon called the "cocktail-party effect".

The Problem

Audio technologies that do not simulate the propagation of sounds through a medium present false aural signatures. The correct spatial cues inherent to aural signatures must be both synthesized and preserved.

Solutions need Audio Simulation

Audio simulation creates and preserves the perceptual spatial cues in electronically transmitted sound. AuSIM's unique audio simulation technology is called AuSIM3D™. Applied to real-world tasks, AuSIM3D™ helps:

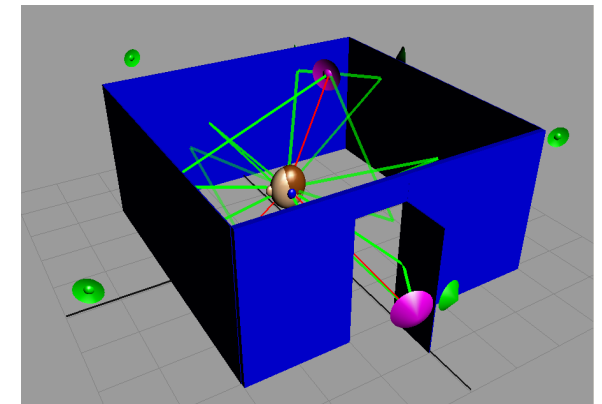
- Reduce fatigue with naturally-presented information.
- Maintain more efficient and productive workers.
- Increase accuracy and quality of listener's work and yield fewer critical and costly mistakes.
- Let listeners make better, cost-effective decisions.
- Save time, money and even lives

AuSIM3D™ Technology

AuSIM3D™ is a set of three complex mathematical models all based on the physics of sound waves:

- radiation away from the emitter (source model)
- transmission through an acoustic environment (environment model)
- entry into a human's ear canals (listener model).

These models depend on run-time parameters to synthesize the correct spatial cues to be applied to each discrete sound in the environment.



Wavetracing of audio propagation in a room

In real-time, AuSIM3D™ gathers dynamic acoustic properties, 3D position, and 3D orientation of all objects to drive the emitter, environment, and listener models. The models compute the unique signature for each sound as a composition of level changes (gain), time changes (phase), and frequency changes (color).

AuSIM3D™ supports hundreds of sounds, listeners, and environmental objects. AuSIM designed AuSIM3D™ for ultimate compatibility with visual and haptic simulation systems.

AuSIM3D™ Applications

AuSIM is focused on “mission-critical” applications in which completing tasks more efficiently and effectively creates an economic advantage. In mission-critical applications, operators are presented information such as data, images, voices, vibrations, and sounds that must be perceived effectively for optimal decision making.

AuSIM applications are everywhere.

- The audio engineer can place sound into a video so that it is perceived correctly in the scene, getting the task done quicker and creating a more effective ad.
- The driver’s education student can learn to react to realistic sound events in a simulator, putting fewer people at risk during the learning and creating a prepared driver for the real situation.
- With AuSIM improvements in aural displays, the fighter pilot can naturally react to the sound of threats from behind and below, saving lives and resources.
- Air-traffic controllers can recognize pilots by coincident position of voice and radar indication, increasing efficiency and reducing fatigue.
- Teleconferences with spatially consistent voices can be more natural and more efficient.

AuSIM Customers

Developers of these types of applications, who are looking for a competitive edge, are AuSIM customers. AuSIM3D™ provides the tools and the interfaces that developers need to create a believable sound environment. NASA, the US Navy and Air Force, universities, and forward-looking industrial companies have taken the AuSIM step towards developing next-generation applications.

About AuSIM

AuSIM Inc. is a world-leading developer of audio technologies located in the heart of Silicon Valley, near Stanford University. In addition, the company maintains AuSIM Satellite Studios, a complete audio recording and production facility in Scotts Valley, California. The studios produce both original sound content and revolutionary AuSIM3D™ sound recordings.

AuSIM Inc. was founded in 1998 to provide positional 3D audio simulation solutions. To develop such solutions, AuSIM maintains expertise in the following areas: physics, wave mechanics, acoustic theory, linear systems, control systems, signal processing, and real-time system engineering. AuSIM’s technical positions include integrated system designers, 3D simulation engineers, acoustic technologists, audio engineers, and software programmers. To inquire about current AuSIM opportunities, write us at jobs@ausim3d.com.

AuSIM invites inquiries about products, services, technology, and investment opportunities; simply send email to info@ausim3d.com or call (650) 32-AUSIM.

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