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Uni-Verse Acoustic Simulation System: interactive real-time room acoustic simulation is dynamic 3D environments

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Uni-Verse Acoustic Simulation System (UVAS) is a newly developed interactive room acoustic simulation system that can handle dynamically changing 3D geometric models in real-time. The system can share such models with other application, such as visual renderers or 3D modelling tools, over a network using the Verse protocol.

UVAS is implemented using the beam-tracing method. It is build as two separate but highly integrated parts. The first part is handling the geometry, it's responsibility is to find audible sound sources and relevant reflection paths in the simulated environment. The second part is handling the audio rendering, producing the audible result of the simulation based on information given by the first part. This paper will focusing on the first part