

Sound is one of the important components of computer games. To work with sound, there are special libraries called audio engines. However in comparison with commercial systems, open-source systems are significantly limited. The goal of this thesis is to create an open audio engine with functionality similar to a commercial system. The result of this thesis is a library for playing sounds in games that uses the XAudio2 library for processing audio data (application of sound effects and sending data to the sound card). Our library enables playback of complex sounds such as the sounds of car engine. This playback can be influenced by various parameters (for instance engine RPM) and various sound effects can be applied to these sounds (echo, reverb, low-pass filter or high-pass filter). The library also enables to connect the output of another audio source or transmit output buffer developers. The thesis also includes an editor for creating complex sounds. Editor also serves as a demonstration of the functionality of the library.