Sound++

*Programmer’s Intro*

**Introduction**

Welcome to Sound++! Sound++ is a C++ audio system that uses OpenAL. It is designed to be simple and easy to use so you can add an immersive soundscape to your game or application. Sound++ offers you these features:

* Full 3D audio with the Doppler Effect (Sounds must be mono for 3D audio).
* Play both WAV and OGG files from audio sources.
* Stream OGG files from the disk.
* Load a sound once and play it from multiple sources with the tag system.
* Record sounds and instantly save them for use in other parts of the application.
* Record and playback audio in real time.
* Comprehensive debug output to log files.
* Write signal processing plug-ins to bring your audio to life.

**Installation**

To install Sound++, first move the sound++ folder to your desired install location (C:\Program Files (x86) is recommended). Next, open Visual Studio. Go to Project Settings -> C/C++ -> General. Under Additional Include Directories, add the include folder of your Sound++ installation. Next, go to Project Settings -> Linker -> General. Under Additional Library Directories, add the libs folder of your Sound++ installation. Finally, under Project Settings -> Linker -> Input, add SoundPlusPlus.lib to Additional Dependencies. If you receive multiply defined symbol errors upon compilation, you may have to go to Project Settings -> C/C++ -> Code Generation and change the Runtime Library option from Multi-threaded DLL to Multi-threaded. You are now ready to start using Sound++.

**Class List**

**Spp\_AudioManager**

This is the primary manager for your audio. Use this to load and unload WAV and OGG files, as well as for getting a reference to the spp\_AudioListener and managing global audio settings, such as the Doppler factor or active audio device.

**spp\_AudioListener**

This is the audio listener for the scene. It serves as your users’ entrance into the soundscape you create, as they will hear only the sounds the Listener hears. There can only ever be one listener at a time.

**spp\_AudioSource**

This is the most basic form of playing audio in your application. It can play WAV files and OGG files simultaneously. A source can have as many sounds as you like associated with it, and you can configure/play each sound individually or all together.

**spp\_StreamingSource**

The streaming source is intended for use with large files that are too big to load into memory all at once. It must be updated continuously so it can continue to read data from the disk when needed. It can only play OGG files.

**spp\_AudioRecorder**

This is the primary method of getting recorded sounds into your application. Once you start an AudioRecorder, it must be updated continuously so it can continue to get data from the microphone. After recording has stopped, the recorded sound can be added to the sound manager for use by sources.

**spp\_Microphone**

Microphones record sound data and play it back in real time. Once the recording has started, it must be updated continuously so it can get data from the recording device.

**spp\_ProcessingPlugIn**

This class serves as a base class for custom signal processing plug-ins. Simply override the ProcessSamples function and add the plug-in to the audio manager or a streaming source.