**AUDIO FILE FORMATS**

Almost everyone is familiar with the most commonly used file formats – for music, mp3 and wmv, for video, avi and mpeg, and for images, jpeg and gif. Unfortunately, these common formats are not the only ones we run into on a daily basis in a professional environment.

**Technical Jargon:**

*File Format*: a specific way to encode data that is to be saved as a file. Please note that the file format does no encoding on its own – the encoding is left up to the codecs.

*Codec*: a program/algorithm that encodes/decodes data to convert a file between different formats. The popular media codecs are generally for shrinking file size (ie compressor).

*Lossy Codec*: refers to a codec that sacrifices file quality for the sake of compression (ie MP3)

*Lossless Codec*: does not destroy any data, regardless of whether or not the data is necessary for the file’s integrity (ie WAV and AIFF)

*Metadata*: information about the file that is stored within the file itself – for example, when a picture was taken and what type of camera it was taken with, or the artist of an audio track.

Bitrate: the number of bits processed per second. To put things into perspective, mp3’s generally have a bitrate of 128 kbit/s, while CD’s generally have bitrates of around 1.4 Mbit/s.

**Audio File Formats Explained**

*AIFF /WAV*

.aiff /.wav – These are both uncompressed, lossless formats, which means it takes about 10MB to save a minute’s worth of music. aiff was developed for Apple’s OSX, and wav for PCs, although both formats are compatible with both operating systems.

Wav is the format preferred by PC wielding audiophiles; mac users generally rip CD’s into the aiff file format. There are codecs like FLAC and WavPack that will compress .aiff and .wav files, although the resulting file will still be huge compared to the ubiquitous mp3 format.

*AAC*

.aac – Apple’s default audio format, AAC is a lossy compression scheme that was developed to replace mp3, but never achieved the prominence that mp3 has with listeners. Some argue that AAC produces the same quality audio at 96 kbits/s as a mp3 does at 128 kbit/s, but with the recent developments in mp3 codecs (particularly LAME), mp3s have performed far better in listening tests against AAC than in previous years. Nevertheless, when it comes to a sound quality to file size ratio, AAC beats MP3.

MP3 (http://en.wikipedia.org/wiki/Mp3)

MPEG-1 Audio Layer 3, more commonly referred to as MP3, is a patented digital audio encoding format using a form of lossy data compression. It is a common audio format for consumer audio storage, as well as a de facto standard of digital audio compression for the transfer and playback of music on digital audio players. MP3 is an audio-specific format that was designed by the Moving Picture Experts Group.

The use in MP3 of a lossy compression algorithm is designed to greatly reduce the amount of data required to represent the audio recording and still sound like a faithful reproduction of the original uncompressed audio for most listeners. An MP3 file that is created using the setting of 128 kbit/s will result in a file that is about 1/11th[1] the size of the CD file created from the original audio source. An MP3 file can also be constructed at higher or lower bit rates, with higher or lower resulting quality. The compression works by reducing accuracy of certain parts of sound that are deemed beyond the auditory resolution ability of most people. This is relatively similar to the principles used by JPEG, an image compression format

**Conclusion:**

If you’re willing to sacrifice the storage space, and have ears sensitive enough to tell the difference between a CD and a ripped track, go with .wav or .aiff. Otherwise, .aac and .mp3 encoded at bitrates above 256 kbit/s are indistinguishable from CDs for the average person. Depending on your client’s needs and delivery platforms will determine what format you encode your audio file into.

**http://www.makeuseof.com/tag/a-look-at-the-different-file-formats-available-part-1-audio/**