Glossary

AGC　See **automatic gain control.**

AIFF　See **Audio Interchange File Format.**

AIFF-C　See **Audio Interchange File Format Extension for Compression.**

alert sound　See **system alert sound.**

Alert Sounds control panel　A subpanel of the Sound control panel that allows the user to select a system alert sound. See also **Sound In control panel, Sound Out control panel, Volumes control panel.**

allophone　A distinct variety of a phoneme in a particular language that is never used contrastingly with any other allophone of the phoneme.

amplitude　A modification to the wave amplitude of a sound to make it sound louder or softer. See also **speech volume.** Compare **wave amplitude.**

Apple Mixer　See **Apple Mixer component.**

Apple Mixer component　A sound component that is responsible for mixing together the audio data streams from all open sound channels.

Apple Sound Chip (ASC)　A custom chip that, in conjunction with other circuitry, generates a stereo sound signal that drives the internal speaker or an external sound jack. Compare **Enhanced Apple Sound Chip.**

ASC　See **Apple Sound Chip.**

asynchronous sound play　The playing of sound during other, non-sound related operations. Compare **synchronous sound play.**

audio compression　A technique of reducing the amount of memory space required for a buffer of sampled-sound data, usually at the expense of audio fidelity. See also **audio expansion.**

audio component　A component that works with the Sound Manager to adjust volumes or other settings of a sound output device. Compare **sound component.**

audio data　See **sampled-sound data, sound, square-wave data, wave-table data.**

audio decompression　See **audio expansion.**

audio expansion　The decompression of compressed sound data. See also **audio compression.**

audio information record　A structure you can use to specify information about an audio component. Defined by the `AudioInfo` data type.

Audio Interchange File Format (AIFF)　A sound storage file format designed to allow easy exchange of audio data among applications.

Audio Interchange File Format Extension for Compression (AIFF-C)　An extension of the Audio Interchange File Format that allows for the storage of compressed sound data.

audio port　Any independently-controllable sound-producing hardware connected or attached to a sound output device. A sound output device can have several audio ports.

audio selection record　A structure you can use to specify that only part of a sound be played. Defined by the `AudioSelection` data type.

automatic gain control (AGC)　A feature of sound recording that moderates the recording to give a consistent signal level.

base frequency　The pitch at which a sampled sound is recorded. The wave of a sampled sound may include frequencies other than the base frequency (and need not even include the base frequency).

baseline pitch　See **speech pitch.**

buffered expansion   Audio expansion of a sound that does not occur while the sound is playing. Compare **real-time expansion.**

callback procedure   An application-defined procedure that is invoked at a specified time or based on specified criteria.

channel   A portion of sound data that can be described by a single sound wave. Do not confuse with sound channel or speech channel. See also **monophonic sound, stereo sound.**

chunk   Any distinct portion of a sound file.

chunk header   The first segment of a chunk, which defines the characteristics of the chunk. Defined by the `ChunkHeader` data type.

codec   See **compression/decompression component.**

command   See **embedded speech command, sound command.**

command delimiter   A sequence of one or two characters that indicates the start or end of an embedded speech command.

component   A piece of code that provides a defined set of services to one or more clients. Applications, system extensions, and other components can use the services of a component. See also **audio component, sound component.**

component description record   A structure that contains information about a component. Defined by the `ComponentDescription` data type.

Component Manager   A collection of routines that allows your application or other clients to access components. The Component Manager manages components and also provides services to components.

compressed sound data   Sampled-sound data that has been subjected to audio compression.

compressed sound header   A sound header that can describe noncompressed and compressed sampled-sound data, whether monophonic or stereo. Defined by the `CmpSoundHeader` data type. See also **extended sound header, sampled sound header.**

compression   See **audio compression.**

compression/decompression component (codec)   A component that handles data compression and decompression.

compression information record   A structure you use to specify information about a sound component that can decompress compressed audio data. Defined by the `CompressionInfo` data type.

computer-generated speech   See **synthesized speech.**

continuous play from disk   See **play from disk.**

continuous recording   A feature of a sound input device driver that allows recording from the device while other processing continues.

current sound input device   The sound input device that the user has chosen through the Sound In subpanel of the Sound control panel.

current sound output device   The sound output device that the user has chosen through the Sound Out subpanel of the Sound control panel.

DAC   See **digital-to-analog convertor.**

decompressed sound data   Sampled-sound data that has been subjected to audio compression and expansion.

decompression   See **audio expansion.**

delimiter   See **command delimiter.**

delimiter information record   A structure that defines the characters used to indicate the beginning and end of a command embedded in text. Defined by the `DelimiterInfo` data type.

dictionary   See **pronunciation dictionary.**

digital signal processor (DSP)   A processor that manipulates digital data.

digital-to-analog convertor (DAC)   A device that converts data from digital to analog form.

double buffering   A technique used by the Sound Manager to manage a play from disk. When using this technique, the Sound Manager plays one buffer of sampled-sound data while filling a second with more data. When the first buffer of sound finishes playing, the Sound Manager plays the data in the second buffer while filling the first with more data. See also **play from disk, sampled-sound data**.

drop-sample conversion   A form of sample rate conversion that uses an existing sample as an interpolated sample point. Compare **linear interpolation.**

DSP   See **digital signal processor.**

duration   The length of time that a sound takes to play.

EASC   See **Enhanced Apple Sound Chip.**

embedded speech command   In a buffer of input text, a sequence of characters enclosed by command delimiters that provides instructions to a speech synthesizer.

ending prosody   The rhythm, modulation, and stress patterns associated with the end of a sentence of speech.

Enhanced Apple Sound Chip (EASC)   A modified Apple Sound Chip that generates stereo sound using pulse-code modulation. Compare **Apple Sound Chip.**

enhanced Sound Manager   Any version of the Sound Manager greater than 2.0.

error callback procedure   An application-defined procedure that is executed whenever the Speech Manager encounters an error in an embedded speech command in a buffer of input text.

expansion   See **audio expansion.**

extended sound header   A sound header that can describe monophonic and stereo sampled-sound data, but not compressed sound data. Defined by the `ExtSoundHeader` data type. See also **compressed sound header, sampled sound header**.

FIFO   See **first-in, first-out.**

Finder sound file   A file of file type `'sfil'` containing a sound resource. If a user opens a Finder sound file, the Finder plays the sound resource contained within it. See also **sound file, sound resource.**

first-in, first-out (FIFO)   Characteristic of a queue in which the first item put into the queue becomes the first item to be taken out of it. Compare **last-in, first out.**

frequency   The number of times per second that an action occurs. An action's frequency is measured in cycles per second, or hertz. See also **period.**

gain   The ratio of the output volume to the input volume. See also **automatic gain control.**

hertz (Hz)   A unit of frequency, equal to one cycle per second.

instrument   A sampled sound played at varying rates to produce a number of different pitches or notes. See also **voice.**

interleaving   The technique of combining two or more channels of sound data by alternating small pieces of the data in each channel into a single data stream. See also **sample frame.**

interpolation   The process of generating sample points between two given sample points. See also **linear interpolation.**

kilohertz (kHz)   A unit of frequency, equal to one thousand cycles per second.

last-in, first out (LIFO)   Characteristic of a queue in which the last item put into the queue becomes the first item to be taken out of it. Compare **first-in, first out.**

LIFO   See **last-in, first-out.**

linear interpolation   A form of interpolation that uses the calculated mean of two sample points as the interpolated sample point. Compare **drop-sample conversion.**

MACE   See **Macintosh Audio Compression and Expansion.**

Macintosh Audio Compression and Expansion (MACE)   A set of Sound Manager routines that allow your application to compress and expand audio data.

megahertz (MHz)   A unit of frequency, equal to one million cycles per second.

microsecond   A unit of time equal to one millionth of a second. Abbreviated μs.

MIDI   See **Musical Instrument Digital Interface.**

MIDI Manager   The part of the Macintosh system software that controls the flow of MIDI data and commands through a MIDI interface.

MIDI note value   An integer that is defined to correspond to a frequency specified in hertz that is associated with a musical note.

millisecond   A unit of time equal to one thousandth of a second. Abbreviated ms.

modulation of speech   See **pitch modulation.**

monophonic sound. Sound consisting of a single channel. Compare **stereo sound.**

multichannel sound   See **stereo sound.**

Musical Instrument Digital Interface (MIDI)   A standard protocol for sending audio data and commands to digital devices.

noncompressed sound data   Sampled-sound data that has not been subjected to audio compression or that has been decompressed.

note   See **frequency, MIDI note value.**

offset-binary encoding   A method of digitally encoding sound that represents the range of amplitude values as an unsigned number, with the midpoint of the range representing silence. For example, an 8-bit sound stored in offset-binary format would contain sample values ranging from 0 to 255, with a value of 128 specifying silence (no amplitude). Samples in Macintosh sound resources are stored in offset-binary form. See also **two's complement encoding.**

packet   A unit of compressed sampled-sound data. One or more packets make up a sample frame of compressed sampled-sound data. See also **sample point.**

period   The time elapsed during one complete cycle. See also **frequency.**

phoneme   A speech sound in a language that a speaker of the language psychologically considers to be a single unit. A single phoneme may have several allophones.

phoneme callback procedure   An application-defined procedure that is executed whenever the Speech Manager is about to pronounce a phoneme.

phoneme descriptor record   A structure that contains information about all phonemes defined for the current synthesizer. Defined by the `PhonemeDescriptor` data type.

phoneme information record   A structure that contains information about a phoneme. Defined by the `PhonemeInfo` data type.

phonemic representation of speech   The representation of speech using a series of phonemes.

phonetic representation of speech   The representation of speech using a series of allophones.

pitch   A listener's subjective interpretation of a sound's frequency. See also **speech pitch.**

pitch modulation   A fixed-point value defined on a scale from 0.000 to 100.000 that indicates the maximum amount by which the frequency of generated speech may deviate from that corresponding to the speech pitch in either direction. A value of 0.000 corresponds to a monotone.

play from disk   The ability of the Sound Manager to play sampled sounds stored on disk (either in a sound file or a sound resource) continuously without audible gaps.

playthrough   A feature of sound recording that allows the user to hear, through the speaker of a Macintosh computer, the sound being recorded.

polyphonic sound   See **stereo sound.**

pronunciation dictionary   A list of words and their pronunciations, installed in a speech channel to override default speech synthesizer pronunciations of words.

pronunciation dictionary resource   A pronunciation dictionary stored in a resource of type `'dict'`.

prosody   The rhythm, modulation, and stress patterns of speech.

rate   See **sample rate, speech rate**.

real-time expansion   Audio expansion of a sound that occurs while the sound is playing. Compare **buffered expansion.**

recording   The process of creating an analog or digital representation of a sound. See also **sampling.**

sample   See **sample point.**

sampled sound   Any sound defined using sampled-sound data.

sampled-sound data   Any set of values that represent the sample points of a sampled sound. The values can be in either offset-binary format or two's complement format.

sampled sound header   A sound header that can describe monophonic, noncompressed sampled-sound data. Defined by the `SoundHeader` data type. See also **compressed sound header, extended sound header.**

sample frame   An interleaved set of sample points (for noncompressed sampled-sound data) or packets (for compressed sampled-sound data).

sample point   A value representing the amplitude of sampled-sound data at a particular instant. One or more sample points make up a sample frame of noncompressed sampled-sound data. See also **packet.**

sample rate   The rate at which samples are recorded. Sample rates are usually measured in kilohertz or megahertz.

sampling   The process of representing a sound by measuring its amplitude at discrete points in time. See also **recording.**

sifter   See **sound component.**

sound   Anything perceived by the organs of hearing. See also **frequency, pitch, stereo sound, timbre.**

sound channel   A path that sound data traverses from an application to the sound output device. A sound channel is associated with a queue of sound commands and with other information about the audio characteristics of the sound data. See also **sound channel record.**

sound channel record   A structure that represents a sound channel. Defined by the `SndChannel` data type.

sound channel status record   A structure whose address you pass to the `SndChannelStatus` function. Defined by the `SCStatus` data type.

sound command   An instruction to produce sound, modify sound, or otherwise assist in the overall process of sound production. See also **sound command record.**

sound command record   A structure that describes a sound command. Defined by the `SndCommand` data type.

sound component   A component that works with the Sound Manager to manipulate audio data or to communicate with a sound output device. See also **audio component, compression/ decompression component, sound output device component, utility component.**

sound component chain   A chain of sound components that links a sound source to a sound output device.

sound component data record   A structure that specifies information about the data stream generated by a sound component. Defined by the `SoundComponentData` data type.

sound component information selector   A value of type `OSType` that indicates the kind of information a sound component should return or modify.

Sound control panel   A control panel that allows the user to specify basic sound-related settings and preferences. See also **Alert Sounds control panel, Sound In control panel, Sound Out control panel, Volumes control panel.**

sound data   See **sampled-sound data, sound, square-wave data, wave-table data.**

sound double buffer header record   A structure that you use to manage your own double-buffering scheme. Defined by the `SndDoubleBufferHeader` and `SndDoubleBufferHeader2` data types.

sound double buffer record   A structure that you use to manage your own double-buffering scheme. Defined by the `SndDoubleBuffer` data type.

Sound Driver   A device driver on the original Macintosh computers that provided sound generation. The Sound Driver is now obsolete; it has been replaced by the Sound Manager.

sound file   A file of file type `'AIFF'` or `'AIFC'` that can be used to store sampled-sound data and information about that data. See also **Audio Interchange File Format, Audio Interchange File Format Extension for Compression, chunk, Finder sound file, sound resource.**

sound header   A data structure (usually stored in a sound resource) that contains information about a buffer of sampled-sound data. See also **compressed sound header, extended sound header, sampled sound header.**

Sound In control panel   A subpanel of the Sound control panel that allows the user to select a sound input device. See also **Alert Sounds control panel, Sound Out control panel, Volumes control panel.**

sound information list   A structure that specifies the information associated with a sound component information selector. Defined by the `SoundInfoList` data type.

sound input device   Any hardware device (such as a microphone or audio digitizer) that records sound.

sound input device driver   A standard Macintosh device driver used by the Sound Manager to manage communication between applications and a sound input device.

sound input device information selector   A variable of type `OSType` that is used to specify the type of information that an application or the Sound Input Manager is requesting from a sound input device driver.

Sound Input Manager   The part of the Macintosh system software that controls the recording of sound from sound input devices.

sound input parameter block   A parameter block that contains information about sound recording. Defined by the `SPB` data type.

Sound Manager   The part of the Macintosh system software that manages the production and manipulation of sounds on Macintosh computers.

Sound Manager status record   A structure filled in by the `SndManagerStatus` function, which gives information on the current CPU loading caused by all open channels of sound. Defined by the `SMStatus` data type.

Sound Out control panel   A subpanel of the Sound control panel that allows the user to select a sound output device. See also **Alert Sounds control panel, Sound In control panel, Volumes control panel.**

sound output device   Any hardware device (such as a speaker or sound synthesizer) that produces sound.

sound output device component   A sound component that communicates with a sound output device. See also **compression/ decompression component** and **utility component.**

sound parameter block   A parameter block that describes the source data to be modified or sent to a sound output device. Defined by the `SoundParamBlock` data type.

sound recording dialog box   The dialog box displayed by the Sound Input Manager when you call `SndRecord` or `SndRecordToFile`.

sound resource   A resource of resource type `'snd '` that can be use to store sound commands and sound data. See also **sound file.**

sound resource header   The portion of a sound resource that describes the format of the sound resource.

sound source   The origin of a specific channel of sound.

source   See **sound source.**

source component   The sound component that provides input for a particular component.

source ID   A unique 4-byte identifier created by the Apple Mixer to refer to a single chain of sound components linking a sound source to the current sound output device. Defined by the `SoundSource` data type.

speech   The process or product of speaking. See also **sound, synthesized speech.**

speech amplitude   See **speech volume.**

speech attribute   A setting defined for a voice or a class of voices that affects the quality of speech generated by the Speech Manager. Speech attributes include **speech pitch, speech rate, pitch modulation, speech volume.**

speech channel   The data structure used by the Speech Manager to store settings related to speech generation. All speech must be generated through a speech channel. Defined by the `SpeechChannel` data type.

speech channel control flags   Constants that enable special Speech Manager features associated with speech generation.

speech command   See **embedded speech command.**

speech-done callback procedure   An application-defined procedure that is executed when the Speech Manager completes speaking a buffer of input text.

speech error information record   A structure that contains information about which Speech Manager errors occurred while processing a text buffer on a given speech channel. Defined by the `SpeechErrorInfo` data type.

speech extension data record   A structure passed to `GetSpeechInfo` or `SetSpeechInfo` to get or set synthesizer information. Defined by the `SpeechXtndData` data type.

speech information selector   A variable of type `OSType` that is used to specify the type of information that an application or the Speech Manager is requesting from a speech synthesizer.

Speech Manager   The part of the Macintosh system software that provides a standardized method for Macintosh applications to generate synthesized speech.

speech modulation   See **pitch modulation.**

speech pitch   A fixed-point value on a scale from 0.000 to 100.000 that indicates the average (or baseline) frequency a speech synthesizer should use in generating synthesized speech. A value of 60.000 corresponds to Middle C on a conventional piano keyboard. See also **pitch modulation.**

speech rate   A fixed-point value specifying the approximate number of words per minute that a speech synthesizer should use in generating speech.

speech status information record   A structure that contains information about the status of a speech channel. Defined by the `SpeechStatusInfo` data type.

speech synthesizer   The executable code that is linked to a speech channel and manages all communication between the Speech Manager and the Sound Manager.

speech version information record   A structure that contains information about the speech synthesizer currently being used. Defined by the `SpeechVersionInfo` data type.

speech volume   A fixed-point value on a scale from 0.000 to 1.000 that indicates the average amplitude a speech synthesizer should use in generating synthesized speech. A value of 0.000 corresponds to the lowest possible volume, and a value of 1.000 corresponds to the highest.

square-wave data   Any set of values that represent a sound by its frequency, amplitude, and duration.

stereo sound   Sound that simultaneously consists of two or more channels. Also called *polyphonic sound* or *multichannel sound*. Compare **monophonic sound.**

synchronization callback procedure   An application-defined procedure that is executed whenever the Speech Manager encounters an embedded synchronization speech command in a buffer of input text.

synchronous sound play   A playing of sound by the Sound Manager that prevents other code from executing until the sound is done playing. Compare **asynchronous sound play.**

synthesized speech   The product of converting nonaural tokens (such as written or digitally-stored words or phonemes) into speech. See also **Speech Manager.**

synthesizer   See **speech synthesizer.**

system alert sound   A sound resource stored in the System file that is played whenever an application or other executable code calls the `SysBeep` procedure.

text   The written representation of language.

text-done callback procedure   An application-defined procedure that is executed when the Speech Manager has finished processing (although not necessarily speaking) a buffer of input text.

text-to-speech   See **synthesized speech.**

tick   A unit of time equal to one sixtieth of a second.

timbre   The tone of a sound, which can range from clear to buzzing.

two's complement encoding   A system for digitally encoding sound that stores the amplitude values as a signed number—silence is represented by a sample with a value of 0. For example, with 8-bit sound samples, two's complement values would range from –128 to 127, with 0 meaning silence. The Audio Interchange File Format (AIFF) used by the Sound Manager stores samples in two's complement form. Compare **offset-binary encoding.**

uncompressed sound data   See **decompressed sound data, noncompressed sound data.**

utility component   A sound component that performs some modification on sound data and does not communicate directly with any sound output device. See also **sound component, sound output device component.**

version record   A structure that contains version information. Defined by the `NumVersion` data type.

voice   (1) The set of parameters that specify a particular quality of synthesized speech. A voice is designed to work with a particular speech synthesizer. (2) A sampled sound played at varying rates to produce a number of different pitches or notes. See also **instrument.**

voice description record   A structure that contains information about a voice. Defined by the `VoiceDescription` data type.

voice file information record   A structure that contains information about the file in which a voice is stored and the resource ID of the voice within that file. Defined by the `VoiceFileInfo` data type.

voice specification record   A structure that provides a unique specification that you must use to obtain information about a voice. Defined by the `VoiceSpec` data type.

volume   See **amplitude, speech volume.**

Volumes control panel   A subpanel of the Sound control panel that allows the user to select volumes. See also **Alert Sounds control panel, Sound In control panel, Sound Out control panel.**

VOX recording   A feature that allows sound recording only when the sound to be recorded exceeds a certain amplitude.

VOX stopping   A feature that stops sound recording when the sound falls below a certain amplitude.

wave amplitude   The height of a sound wave at an instant of time. Compare **amplitude.**

waveform   The shape of a wave (a graph of a wave's amplitude over time).

wavelength   The extent of one complete cycle of a wave.

wave table   A sequence of wave amplitudes measured at fixed intervals.

wave-table data   Any set of values that represent a sound by a wave table.

word callback procedure   An application-defined procedure that is executed whenever the Speech Manager is about to speak a word.