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How To...

Changing the Editing Mode

Acoustica always record and edit directly on the hard disk.   This allows files to be larger than the internal memory would handle.   Acoustica may edit directly on the file itself.   Any changes will then be permanent, and the save function is unavailable.   Another option is to let Acoustica make a temporary file on which all editing will be done.   The changes will not be permanent before saving the recording.

Changing the editing mode is done by selecting *Preferences...* under the *Options* menu.   Set the editing mode option to either *edit directly on file* or *copy to temporary file*.

Applying Effects

Acoustica features a variety of different effects.   The effects can be used to enhance the quality of the recording or simply to create fancy sounds.   To describe the results of the effects is difficult.   Thus, the user is urged to try out the effects to get a picture of what they do and their effect on different sounds.

The effects are imposed only on the marked sound section.

Acoustica's Effects
——Chorus...
——Compressor...
——Echo...
——External Effect...
——Fade...
——Flanger...
——Reverb...
——Reverse
——Stereo Enhancement...
——Time Stretch...
——Transpose...

Changing the Number of SMPTE frames

All timing in Acoustica is done in the SMPTE format.   This is a timing standard that is widely used.   The SMPTE timing standard is designed for   synchronization with moving pictures.   The smallest unit in the SMPTE time code is therefore measured in frames per second.   In Acoustica you can set the number of frames per second to 24, 25, 30 or 100.   The time code is divided into four sections as follows:

> hour : minute : second : frame number

Changing the number of frames per second is done by selecting *Preferences...* under the *Options* menu.

Deactivating a Channel

If the editing window contains a stereo recording, both channels will normally be marked. However, deactivating one stereo channel can be done by pressing the channel's button on the toolbar.   There is one button for each channel (
).   Further processing will now apply only to the remaining active channel.

Note
Recording, *Copy to File* and *Paste from File* are functions that are not affected by the channel deactivation.

Editing Recordings

Editing of the recording can be done in one of the following ways

· <u>Using the playlist</u>
· <u>Using cut, copy or paste</u>
· <u>Using copy to disk or paste to disk</u>

Note
The playlist is recommended for editing of large audio files.   It provides a much faster, efficient and safe way to edit.

Marking Sound Sections

All processing is done only to the marked sound section. The marked section has a gray background color. As default, the whole recording is marked. Changing the marked section can be done by one of the following ways.

——Marking on Screen
——Marking during Playback

Marking on Screen

The zoom button on the toolbar must be in the default position (⊞) to proceed with the following procedure.

To mark a smaller section for further processing, press the first mouse button at the starting point of the wanted section.   Keep the button pressed while dragging the mouse pointer to the desired end point of the section. The gray area will now indicate the marked section.   An alternative method of marking a section is to press the left button at the starting point and the rightmost button at the end point of the wanted section.

Marking during Playback

By pressing the *Home* key, the beginning of the marked section will be set to the current playback position.   Pressing the *End* key, the end of the marked section will be set.   This allows the user to select the marked section on the basis of what is heard, rather than on the basis of the visual representation of the recording.

Enabling or Disabling the Undo Function

The undo function recovers the recording as it was before the last operation was done. Before any processing can start, Acoustica copies parts of the recording to a temporary file if the undo option is enabled.   This process may take some time.   If the undo function is not needed, turn it off by selecting *Preferences...* under the *Options* menu.

Enabling or Disabling the Time Ruler

The time ruler in the edit window may be hidden by disabling the time ruler option in the Preferences dialog box.   Select *Preferences* under *Options* to open the Preferences dialog box.

The Realtime Spectrum Analyzer

Acoustica can show a realtime spectrum analyzer of 32 or 128 bands (dependent on whether or not a floating point processor is installed) during playback.   This option is enabled or disabled in the Preferences dialog box.   Select *Preferences* under *Options* to open the Preferences dialog box.

Selecting Audio Devices

If more than one audio input or output device is installed in the computer, you can choose among the installed devices by selecting *Device Settings...* under the *Options* menu.   A list of the available devices where the desired device may be selected will be displayed.

Setting up Directories

A default sound directory may be specified in Acoustica by selecting *Directories...* under the *Options* menu.   Acoustica will automatically enter this directory when the *Open...* under *File* is selected.   Acoustica makes heavy use of temporary files during run time.   The directory where these files are placed may be specified in the same dialog box.

Using the Playlist

Playlist windows are created using the *Create Playlist* command under the *Sound* menu or by opening a playlist file using the *Open Playlist...* also under the *Sound* menu.   The playlist is associated with the active editing window.

1. Mark the first section in the audio file that is to be included in the final cut.
2.   Click the *Add Segment* button ( ).   The segment is now added to the playlist.
3.   Repeat 1 and 2 until all the desired segments are added.

Segments can be removed (click the segment and press DEL).   Pause and wait for keypress elements can be added by clicking the *Add Pause* button ( ) or the *Add Wait for Keypress* button (
).

Doubleclicking an item in the list will allow setting of parameters regarding the element (only audio segment and pause elements).

Zooming Sound Sections

The zoom button on the toolbar must be in the default position () to proceed with the following procedure.

Press the first mouse button at the desired starting point of the wanted section and keep the button pressed while moving the mouse pointer to the desired end point of the section.   The selected section will then be shown filling the entire editing window.

Keyboard Shortcuts

SPACE BAR

   Starts and stops playback.

ESC

   Halts all active processes

CTRL + R

   Starts recording.

HOME

   Sets the beginning of the marked section during playback.   Otherwise, the button has no function.

END

   Sets the end of the marked section during playback.   Otherwise, the button has no function.

CTRL + N

   Creates a new edtiting window.

CTRL + O

   Opens a recording.

CTRL + S

   Saves the current recording.

CTRL + A

   Marks the whole recording.

CTRL + BKSP

   Marks the previously marked section.

SHIFT + A

   Views the whole recording.

SHIFT + BKSP

   Views the previously viewed section.

SHIFT + Z

   Toggles zoom or marking mode.

ALT + F4

   Exits Acoustica.

CTRL + F4

Closes the current window.

F1
Help system.

SHIFT + DEL
Cuts the marked section and copies it to the clipboard.

CTRL + INS
Copies the marked section to the clipboard.

SHIFT + INS
Pastes from the clipboard.

CTRL + M
Mutes the marked section.

CTRL + DEL
Deletes the marked section.

The Toolbar

Record button. Click to start recording (until the stop button is pressed).
Play button. Click to start playing (until the stop button is pressed).
Stop button.

Cut button. Click to cut the marked section and place it in the clipboard.
Copy button. Click to copy marked section to the clipboard.
Paste button. Click to paste the content of the clipboard at the start position of the marked section in the record.

Zoom mode button. Click to shift mode (zoom or mark mode). When the zoom button is in zoom mode, selecting an area by dragging the cursor with the mouse button pressed will expand this area to fill the whole window.   In mark mode, the area will be marked for later processing.
Expand button.   With the zoom button in zoom mode, the whole take will be displayed in the editing window.   In mark mode, the whole take will be marked.
Previous view button. In zoom mode, click to show the previously viewed section.   In mark mode, the previously marked section will be marked.

Left channel activate button.   Click to activate or deactivate the left channel (Processing only applies to an activated channel).
Right channel activate button.   Click to activate or deactivate the right channel (Processing only applies to an activated channel).

Creating a New Recording

To create a new recording in which recording is possible, select the *New...* command under the *File* menu.   A dialog box appears where the desired recording quality may be specified.

Opening an Existing Recording

To fetch a previously stored recording from the hard disk, select *Open...* under the *File* menu. A file dialog box will appear where the file name and directory may be specified.

Saving the Recording

Saving the recording is done by selecting the *Save* command under the *File* menu.   Note that saving recordings when editing directly on the file is not necessary since all changes will be done on the file itself.   If the recording has   no name, a dialog box where the file name may be specified is displayed.

Saving the Recording under a New Name

Saving the recording with a new name is done by selecting the *Save As...* command under the *File* menu.   A file dialog box will appear where the new name may be specified.

Exporting the Recording to Another Sample Format

If another sample format is desired for a file, select the *Export...* command under the *File* menu.   A format dialog box will appear.   The same sample format choices will be available as when a new recording is created.   After the sample format is specified, a file dialog box will be displayed where the file name and directory may be entered.

Exiting Acoustica

Exiting Acoustica may be done in two ways.   Either the *Exit* command under the *File* menu or the *Close* command on the system menu may be selected.

Undoing the Last Operation

If the undo option is turned on (Preferences), the last operation can be undone by selecting the *Undo* command under the *Edit* menu.   Note that the name of the last operation is written to the left of the menu item.

See Also
——Setting Preferences

Cutting Audio Sections

The cut function removes the marked section of the recording and places it in the clipboard, thus resulting in a shorter recording.

See Also
——Copying, Pasting

Copying Audio Sections

The copy function copies the marked section to the clipboard for later reinsertion with the paste function or the mix with clipboard content function.

See Also
——Mixing, Pasting

Pasting Audio Sections

The paste function inserts the content of the clipboard in the recording.

See Also
⸺Copying, Cutting

Mixing Audio Sections

The *Mix with Clipboard Content* function mixes the content of the clipboard in the recording. The volume of the original recording and the clipboard audio section can be separately adjusted in the volume dialog box.

See Also
——<u>Copying</u>, <u>Cutting</u>, <u>Pasting</u>

Muting Audio Sections

The *Mute* function overwrites the marked audio section with silence.

Deleting Audio Sections

The *Delete* function removes the marked section.   As opposed to the <u>Cut function</u> the *Delete* function does not copy the removed section the clipboard.

See Also
——<u>Copying to Files</u>, <u>Pasting from Files</u>

Copying Audio Section to Files

The Windows clipboard stores the data in the internal memory.   If the memory is limited, large sections might not be possible to edit.   Use the *Copy to File* and the <u>Paste from File</u> function to avoid using the internal memory as clipboard buffer.   After selecting the *Copy to File* function under the *Edit* menu, a file dialog box appears where the file name must be specified.

Pasting Audio Section from Files

The Windows clipboard stores the data in the internal memory.   If the memory is limited, large sections might not be possible to edit.   Use the <u>Copy to File</u> and the *Paste from File* function to avoid using the internal memory as clipboard buffer.   After selecting the *Paste to File* function under the *Edit* menu, a file dialog box appears where the file name must be specified.

Adjusting the Volume of an Audio Section

The volume of an audio section may be adjusted by selecting *Adjust Volume...* under the *Edit* menu.   A dialog box appears where the new volume in decibels may be set.

Removing the DC offset of an Audio Section

Some digital audio recording equipment offers such a good frequency range that they are able to record direct current.   However, when editing the recording a DC offset is not desirable.   Remove the DC offset by selecting the *Remove DC Offset* command under the *Edit* menu.

Marking the Entire Section

The *Mark All* function under the *Edit* menu marks the entire recording.   All process will only affect the marked section.

This function is also available on the toolbar when the <u>zoom mode</u> is deactivated.

Marking the Viewed Section

The *Mark View* function under the *Edit* menu marks the view section of the recording.   All process will only affect the marked section.

Marking the Previously Marked Section

The *Mark Previous* function under the *Edit* menu marks the previously marked section of the recording.   All process will only affect the marked section.

This function is also available on the toolbar when the <u>zoom mode</u> is deactivated.

Viewing the Entire Section

The *View All* function under the *View* menu shows the entire recording.   When working with large files, this function should be used with care because the redrawing times may be considerable.

                This function is also available on the toolbar when the <u>zoom mode</u> is active.

Viewing the Previously Viewed Section

The *View Previous* function under the *View* menu restores the last view.   A virtually unlimited number of views are remembered.

This function is also available on the toolbar when the <u>zoom mode</u> is active.

Viewing the Marked Section

The *View Marked Section* function under the *View* menu views the marked audio section.

Toggling the Zoom Mode

The result of dragging over an area in the graphic visualization of the recording depends on whether or not the zoom mode is active.   When the zoom mode is deactivated, the area will be marked with a gray area.   All effects will only apply to the marked section.   The viewed section, however, is defined independently of the marked section.   When the zoom mode is active, dragging over an area will result in this area being zoomed.

This function is also available on the toolbar.

Starting Recording

To start recording, select the *Start Recording* command under the *Sound* menu or press the record button on the toolbar.   If a recording is already made, a confirm dialog box appears. Note that undoing the record function is not possible.   The record process will continue until the <u>*Stop* command</u> under the *Sound* menu is selected or the stop button on the toolbar is pressed.

This function is also available on the toolbar.

Starting Playback

To start playing the recording, select the *Start Playing* command under the *Sound* menu or press the play button on the toolbar.   The playback process will continue until the *Stop command* under the *Sound* menu is selected or the stop button on the toolbar is pressed.

This function is also available on the toolbar.

Stop

The record and playback functions may be halted by selecting *Stop* under the *Sound* menu or pressing the stop button on the toolbar.   Also, all active process on the recording can be halted by doing this.

This function is also available on the toolbar.

Creating Playlists

The playlist can be used for fast editing of large audio files or for realtime launching of sounds.   Create a new playlist window by selecting the *New Playlist...* command under the *Sound* menu.   The playlist is linked to the active window at the time the playlist window is created.

See Also
——Using the Playlist

Opening Playlist Files

Open a previously made playlist by selecting the *Open Playlist...* command under the *Sound* menu.   The playlist is linked to the active window at the time the playlist window is opened. Make sure the playlist is linked to the appropriate audio file.

See Also
––Using the Playlist

Compressor Effect

The compressor effect reduces the dynamic range of the recording.   Volumes above a given level, the *threshold level*, are attenuated.   The degree of attenuation and the threshold level can be set.   To activate the compressor, select *Compressor...* under the *Effects* menu.   A dialog box will appear where the threshold level and the compression ratio may be set.   The available compression ratios are 1/2, 1/4, 1/8 and zero.

Echo Effect

The echo effect offers two input settings.   The echo time specifies the time delay between each interval, while the feedback volume specifies the volume attenuation since last interval.   To apply the echo effect, select *Echo...* from the *Effects* menu.

Reverb Effect

The reverb effect simulates the reverberation experienced in a concert hall or similar acoustical environments.   The reverb time can be specified in seconds, and the reverb level is set in percent.   Apply reverb by selecting *Reverb...* under the *Effects* menu.

Flanger Effect

Flanger is a totally artificial effect created using short time delays.   Flanger will occur when two sources playing the exactly same recording with a short time delay are mixed together. The result is that some frequencies are canceled, while others are amplified.   Changing the time delay between the two sources will result in other frequencies being canceled or amplified.   The input parameters are flanger modulation frequency and flanger depth.   A higher modulation frequency will result in faster changes in the tone quality.   Activate the flanger function by selecting *Flanger...* from the *Effect* menu.

Chorus Effect

Chorus adds warmth to recordings by using low frequent frequency and amplitude modulation.   The three input parameters are modulation depth, modulation frequency and effect volume.   Select *Chorus...* under the *Effects* menu to apply chorus.

Reversing an Audio Section

Selecting *Reverse* under the *Effects* menu, will process the marked section in such a manner that it will be played backwards.

External Effects

An external effect library standard has been defined in Acoustica.   This allows new effects to be created and used with Acoustica.   Select the *External Effect...* command under the *Effects* menu to activate this function.   A file dialog box appears where effect libraries may be selected.

Transposing an Audio Section

Changing the pitch of a section is done with the transpose function. The transpose interval can be set to any interval in the range of down one octave to up one octave. The fine tuning can be adjusted with a slider within the range of one semitone. It is recommended to use the lowpass filter option if high quality is desired. However, deactivating the filter will result in improved processing speed. Activate the transpose function by selecting *Transpose...* under the *Edit* menu.

Transposing will normally change the duration of the sound. This can however be avoided by using the enabling the Maintain duration option.

Time Stretching an Audio Section

Time stretching means altering the duration of an audio section without changing the pitch. The tool may be very useful when adding narration to a presentation. Select *Time Stretching...* under the *Effects* menu to stretch the marked section. Use the slider set the new duration and press the *OK* button.

Stereo Enhancement Effect

This function enhances the stereo picture by using cross channel delay.   The effect is a broader sound.   Delay time on each channel may be set as well as the feedback volume. Select *Enhance Stereo Effect...* under the *Effects* menu to enhance the stereo effect.

Fading Effects

To apply fade ins or fade outs, select *Fade...* under the *Effects* menu.   The fades can be either linear or non-linear.   The non-linear fade gives a more natural ending of the fading. On fade outs, linear fades may sound to fast in the last period.   However, when working with eight bit files, it may be desirable to reduce the duration of the last part of the fade to reduce noise.   The same is true for the beginning of fade ins.

Spectrum Analyzer

The spectrum analyzer shows an intensity versus frequency plot.   The spectrum cannot show evolution over a period of time, like the spectrogram.   However, the accuracy of which the intensity can be recognized is much better.   The window´s caption contains information about when the spectrum is taken.

The spectrum is a profile view of a column in the spectrogram view.   Since the spectrum normally is constantly evolving, the result of the spectrum analyzer is not representative for a section.   Therefore, use the spectrum only in conjunction with the spectrogram or the realtime spectrum analyzer during playback.

Spectrogram

Studying how each frequency's intensity develops over a period of time can be done with the spectrogram.   The *x*-axis represents the time, the *y*-axis the frequency components, while color represents the intensity of its corresponding frequency and location in time.   The highest frequency component is half the ~~sampling rate~~.   That is the highest frequency recordable.   The intensities of the color coding are shown in a color scale below the spectrogram.

Creating a spectrogram is done by selecting *Spectrogram* under the *Spectral* menu.   The spectrogram is useful when editing the sound.   If a recording does not sound quite right, the reason might be a bad frequency response in the storage medium or the recording equipment.   These errors might be found using the spectrogram.   Correcting them is done with the *parametric equalizer*.

Acquiring more accurate information about phenomena in the spectrogram can be done by clicking inside the spectrogram.   In the lower right corner of the window, the frequency, SMPTE time code and the intensity in decibels are displayed.

Parametric Equalizer

Acoustica features a powerful six band parametric equalizer. Unlike a graphic equalizer, a parametric equalizer allows the user to select the center frequency of the bands. The equalizer in Acoustica also has variable bandwidths on each band.
Activate the equalizer by selecting *Equalize* under the *Spectral* menu. A dialog box containing six sliders, representing each band will be displayed. Grouped together with each slider is an edit box where the center frequency may be assigned and a drop down list where the bandwidth may be selected.

The center frequency is specified in hertz. The sound characters of the different frequencies are best discovered through experimentation. The bandwidth may be specified in octave bands. One octave band equals the frequency range of one octave on the piano keyboard. The bandwidth is the same parameter as the Q-factor found in some analog equipment. A higher Q-factor represents a narrower bandwidth.

The equalizer settings may be stored for later use. This is done by pressing the *Save...* button. A file dialog box will be displayed. When a file name is specified and saved, reload the setting by pressing the *Load...* button and specify the correct file name. The default settings of the equalizer may be set by pressing the *Reset* button.

Device Settings

Window's multimedia system allows several different audio cards to be installed at the same time.   Defining what card to use can be done by selecting *Device Settings...* under the Options menu.   A dialog box appears where both input and output devices may be selected. The full names of the cards are displayed.

Setting Personal Preferences

The user may specify own preferences when selecting *Preferences...* under the *Options* menu.   The number of frames per second in the SMPTE time coding may be set.   Valid options are 24, 25, 30 and 100.   Altering the number of frames per second will affect the time ruler above the recording as well as all timers.   Specifying whether or not a spectrum analyzer is desirable on audio playback may also be done.

When opening a previously stored file, Acoustica creates a temporary file that is used for editing.   Thus, changes made will not affect the original file.   However, copying the file to a temporary file takes some time.   Therefore, it is possible to let Acoustica work directly on the opened file.   Note that when this is done, changes are final and there is no way to reload the recording.   Specifying whether or not Acoustica should copy the recording to a temporary file is done under the *Editing mode* group box in the *Preferences* dialog.

Normally, a time ruler is displayed above the wave display in the editing window.   However, the ruler requires some space and is not always needed.   Therefore, hiding the ruler can be done by unchecking the *Time ruler* checkbox in the *Preferences* dialog.

Directories

The path in which the temporary files are stored can be specified in the *Directories* dialog found under the *Options* menu.   A default directory in which sound files are placed may also be specified.   Acoustica will enter this path every time a file is to be opened or saved.

Spectrogram Options

Several parameters concerning the spectrogram can be set in the spectrogram options dialog box.   The maximum frequency that is viewed can be adjusted.   Also, the quality and color scheme of the spectrogram can be specified.

Cascading Windows

The Cascade command stacks all open edit windows.   Open windows are overlapped so that all are the same size and only fractions of underlying windows are visible.

Tiling Windows

The Tile command tiles your open windows.   This option arranges the windows so they cover the entire desktop without overlapping one another.

Arrange Icons

The Arrange Icons command rearranges any icons on the desktop.   Rearranged icons are evenly spaced, beginning at the lower left corner of the desktop.   The open files must be minimized or this command is disabled.

Closing All Windows

The Close All command closes all open windows on the desktop.   If the content of any open window is not saved, a dialog box will appear asking for the permission to save the content.