

# VocaLign® Project For the Digidesign® Pro Tools® System

Compatible with Apple® Macintosh® and Microsoft® Windows® systems

User's Manual

Manual Version 2.9.1



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# A) Important Notes

This program is compatible with Pro Tools 5.0 (or higher) software, a Digidesign product.

VocALign Project for the Digidesign Pro Tools system processes audio with sample rates up to 192 kHz.

In this manual, "VocALign Project, for the Digidesign Pro Tools System" will be referred to as "VocALign Project"

# **Acknowledgements**

Special thanks to the Digidesign staff for their continued support. Thanks also to Steve Cooke for providing all voices in the demonstration audio.

VocALign is developed and sold under license from Wordfit Limited.



# B) Introduction to VocALign

## What is VocALign?

VocALign is a process that lets audio editors make the timing of one audio signal match another automatically.

## How does VocALign work?

VocALign works by applying varying amounts of time stretching or compression to one signal (called the "dub") to make its energy peaks and troughs align in time with a "guide" signal. This alignment is fast and of the highest quality.

# What can VocALign do for me?

If you are a dialogue editor needing to lip-sync vocals, or a music editor needing to tighten-up lead or backing vocals, instrumental tracks, or a number of other alignment tasks, then VocALign is for you!

Consider the following examples:

## Working without VocALign:

A dubbing session, for film post production, or music production, begins with a guide track. Then the voice-over artist, singer, or musician will dub this as closely as possible.

Because humans are not machines, they will not be able to get exactly in time with the guide. This is generally not acceptable for lip-syncing, nor for double-tracking of vocals or instruments. Often, the next step is to loop-record the more tricky sections individually, but this can break-up the natural flow of the line. Lastly, the editor will use a digital audio editor to cut and nudge individual sections into time with the guide. The above process can take many hours for both the artist and the editor. Above all, the process sometimes creates a result that is inferior in quality.

# Working with VocALign:

The above process becomes a simple matter of getting the artist to concentrate on creating a great performance, and not worry about the fact that it may drift in and out of exact sync with a previous performance. VocALign can then be used to adjust the timing by automatically applying the required amount of varying time-stretching and compression to allow the dub to take on the same timing as the guide.

This saves studio time, saves artists time and improves the quality of your results. Most importantly, you allow your artists to produce their best performances, free from the rigidity normally associated with dubbing.

# C) Applications

VocALign was originally designed for Lip Syncing replacement dialogue for Film and Video post-production but it has been adapted to work successfully in all of the following applications:

- Syncing replacement dialogue in Post Production for Film and Video.
- Double-tracking vocal parts or instrumental parts
- Tightening backing singers with one another, or with the lead vocal
- Tightening backing instrumental tracks
- Sync'ing a drum machine audio-output to a real drummer (or vice versa)
- Giving a dubbed vocal the timing of a "live" vocal performance,
- Changing the voice or even sex of a singer or actor's performance.
- Replacing the vocals in a music video shoot with a production track, achieving perfect lip-sync.
- Foreign Language Dubbing



# D) Unlocking and Deactivation

Once installed, VocALign Project will initially run in a time-limited **trial** mode. Once your trial period is over, you will need to purchase the VocALign software in order to **unlock** for its continued use on your computer. If you have already purchased the software, you can unlock it at any time, ready for fully functioning use.

# **Unlocking the Software**

To unlock the software you will need an Internet connection, either on the computer on which you wish to run VocALign, or via a remote computer.

Please make sure you follow the on-screen instructions on how to unlock the software.

If access to an Internet connection is not possible, please contact Synchro Arts Limited during business hours: 1000-1800 GMT.

When you purchase software from Synchro Arts you will be supplied with a unique code called a **Product Key**. This Product Key is used to start the unlocking process on you computer.

You cannot use the same Product Key to unlock the software on more than one computer.

## **Deactivation of your License**

You can move your Product Key between computers by **deactivating** the license.

It is important that you deactivate your license before:

- Removing the software from your computer.
- Upgrading or re-installing your computer's operating system.

To deactivate the license you will need an Internet connection, either on the computer on which you wish to run VocALign, or via a remote computer.

If access to an Internet connection is not possible, please contact Synchro Arts Limited during business hours: 1000-1800 GMT.

To start deactivation, click the "VocALign" button in the bottom left corner of the VocALign Project plug-in window to open the "About" box, click "Deactivate" and follow the on-screen instructions.

This will then allow you to use your Product Key to unlock the software on another computer.

It is important to keep your Product Key safe as it may be needed if you upgrade your computer or wish to move the software to another computer.

Do not allow any one else to use you Product Key as this will prevent you from using your software.

# E) Quick Start Guide

To learn to use VocALign Project only takes a few minutes, but for getting the best results we strongly recommend that you first try VocALign Project on the "VocALign Tutorial PT" Session.

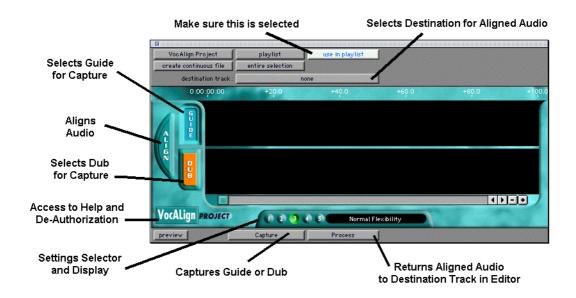
The "VocALign Tutorial PT" session can be found in the "Tutorial" folder on the install CD (if you have one), or can be downloaded from:

#### www.synchroarts.com/downloads

Next, open the "VocALign Tutorial PT" session in Pro Tools. (Alternatively have your own suitable session loaded.)

The operation of VocALign Project is simple: you select and capture your **Guide** and **Dub** audio, align the Dub to the timing of the Guide, and send the **Aligned** audio back to Pro Tools.

## The VocALign Project Window:



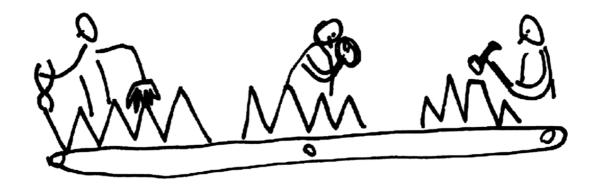
- 1. Select the **VocALign Project** Plug-in from the AudioSuite menu in Pro Tools.
- 2. Make sure "use in playlist" is selected
- 3. Select the *Guide* audio in Pro Tools (e.g. *Steve Guide* 2 in the "VocALign Tutorial PT" session)
- 4. In VocALign Project, click the *Guide* button or panel and then press *Capture*. The *Guide* audio energy profile will appear in the *Guide Panel*.
- 5. Select the *Dub* audio in your audio editor (*Twit-Dub* in the Example Session)
- 6. In VocALign Project, select the *Dub* panel and press *Capture*. The *Dub* audio energy profile will appear in the *Dub Panel*.
- 7. Make sure *Normal Flexibility* appears in the *Settings Window*. If it doesn't, press *Settings Selector "3"*.
- 8. Press *Align* to generate an Aligned Dub trace that lets you visually check alignment.
- 9. Select a *destination track* for the Aligned audio. (e.g. select *Audio 3* for the "VocALign Tutorial PT" Session

- 10. Press *Process*. The Aligned audio will be sent to the selected *destination track* in your audio editor.
- 11. In Pro Tools, play the *Guide* and *Aligned* audio regions with the *Dub* track muted. The *Aligned* audio will have its timing corrected to match the *Guide*.

Note - it is recommended that you DO NOT "Save" the Pro Tools' "VocALign Tutorial PT" session when exiting Pro Tools, so it can be used again.

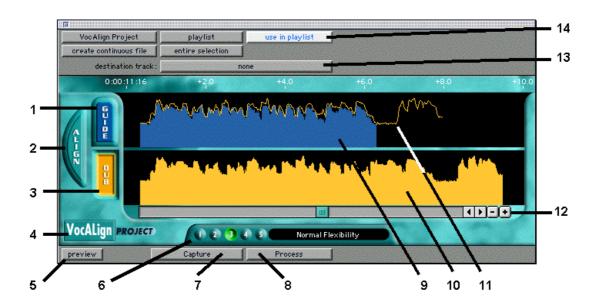
Consult the information in **Chapter G: "Troubleshooting"** if the audio you have aligned does not appear to be aligned properly.

Chapter F details how to get the most out of VocALign Project.



# F) Operational Guide

## **Screen and Controls**



# **Description of Controls:**

- 1) **Guide Button and Panel:** Click on this to select *Guide* for input from Pro Tools.
- 2) Align Button: Click this to generate the Aligned audio trace.
- 3) **Dub Button and Panel:** Click on this to select *Dub* for input from Pro Tools.
- 4) VocALign Button: Access to the Manual and De-authorisation screens.
- 5) **Preview Button:** Click to audition the new *Aligned* audio.
- 6) VocALign Settings: Control the way that VocALign aligns the audio:
  - 1) *Maximum Compression*: Tries to match the Guide by time compressing the aligned audio as much as possible
  - 2) Low Flexibility: Alignment is not very flexible, sound quality may be best.
  - 3) Normal Flexibility (Default): Standard VocALign settings, works best in most cases
  - 4) High Flexibility: Alignment is as flexible as possible
  - 5) *Maximum Expansion*: Tries to match the Guide by time-expanding the aligned audio as much as possible
- 7) **Capture Button:** Click to transfer the selected audio from Pro Tools to the *Guide* or *Dub* panels.
- 8) **Process Button:** Creates the *Aligned* audio and places it in the *destination track* in sync with the *Guide* audio.
- 9) Guide Energy: A profile of the energy of the Guide signal in time
- 10) **Dub Energy:** A profile of the energy of the *Dub* signal in time
- 11) **Aligned Audio Trace:** A representation of the energy of the new *Aligned* signal.
- 12) **Scaling and scrolling controls:** Click to adjust how VocALign displays the Guide and Dub energy signals.
  - Zoom in and out with the + and buttons
  - Scroll left and right with the < and > buttons
- 13) **Destination Track**: Selects into which Pro Tools track the Aligned audio will be placed when *Process* is pressed. It is advised that you always select a destination track. (See "Special Operations" later in this chapter.)
- 14) "Use In Playlist" button: It is advised that you always select this option

# **Normal Operation:**

- 1) In Pro Tools, open a session in which there is "Guide" (original) audio contained in a single Pro Tools Region on one track and a "Dub" (replacement or new) audio in a second track. Ensure that at least a third track is available and visible in Pro Tools to receive the processed.
- 2) Highlight the desired portion of the *Guide* audio region for processing.

This can be any given region or multiple regions. Your selection can begin and end in the middle of a region.

HOT TIP: Try to capture up to around 0.25 to 0.5 seconds of "background" or "leader" audio at the beginning of your *Guide* audio selection.

(This will assist the process to set the noise floor levels and generally allow better alignment at the start of the signal).

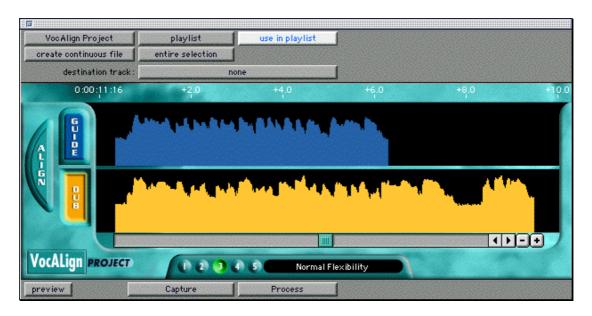
Note: In the current version of VocALign Project, the selected audio must be shorter than 120 seconds and longer than 0.25 seconds.

- 3) Select "VocALign Project" from the AudioSuite menu in Pro Tools. Click on the *Guide* button or panel, and then click the *Capture* button.
- 4) Using the Selector Tool in Pro Tools, highlight the desired portion of the Replacement audio region or Dub for processing.

Again, this can be any given region or multiple regions. Your selection can begin and end in the middle of a region.

HOT TIP: Try to capture *very slightly* more "background" audio before the Dub signal starts than you did for the Guide.

5) In VocALign Project, click on the *Dub* button or panel, and click the *Capture* button

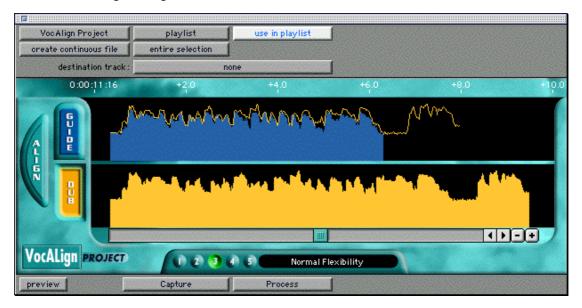


- 6) Examine the non-processed alignment shown in the energy profiles.
- 7) The user can optionally perform several operations on the audio waveform itself before processing. He can extend or shorten the selected regions by positioning the cursor (arrow) at either end of the audio selections:

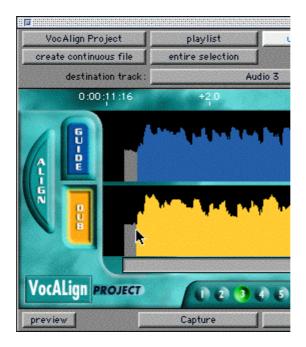


This indicates that by holding down the mouse button, the active region boundary can be moved right or left by moving the mouse left or right. This is an important operation for selecting the right amount of audio at the start and end of the signals.

- 8) In addition, the user can scroll the display with the scroll bars to examine the captured waveforms.
- 9) The *Scale* and + buttons can be used to zoom in or out of the waveform to see more (+) or less (-) detail in the display windows at one time.
- 10) Choose an appropriate setting (e.g. if the *Dub* is very long compared to the *Guide*, try "Maximum Compression", setting number 1.)
- 11) Click on *Align* and examine the results visually. The *preview* button allows you to hear the Aligned signal on its own.



- 12) If the alignment is satisfactory, select the *destination track* and press *Process*.
- If the alignment does not look satisfactory, there are two main options:
- a) Select another *Setting* (which will clear the aligned trace), press *Align* again, and examine the results.
- b) Adjust the "leader" audio before the start of the *Guide* audio to be roughly equivalent with the *Dub* "leader" being somewhat longer. See below.



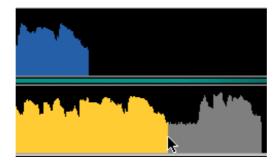
Important: The *Dub* does not have to start at the time of the *Guide*. In other words, its timecode position is not used. The *Guide's* timecode is important and so is the amount of "background" captured before the *Guide* and the *Dub*.

13) The user can re-capture the Guide or Dub individually at any time and replace any previous settings.

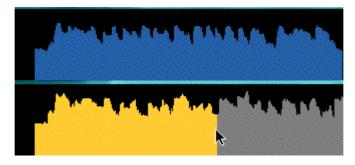
# **Altering the Selected Region**

We will next reduce the length of the Dub being processed without having to return to Pro Tools. You may wish to do this to align only the beginning part of the dub and leave the following part unaligned.

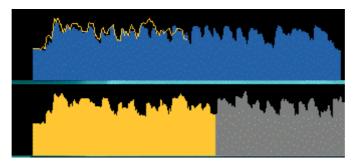
1) First, move the cursor to the end of the Dub filtered as shown below.



2) Next, hold down the mouse button, and a dotted line should appear. While holding down the mouse button, drag the line to the left and release it at the point shown in the next picture. (This does not need to be exactly the same point).



- 3) The above picture indicates that the selected Dub region for processing is now much shorter than the Guide selected region.
- 4) Click on Align and the following result should appear:



The Selected Dub audio has been aligned to the corresponding section of the Guide.

- 5) Pressing the *Preview* button will audition the Aligned audio.
- 6) Select "Audio 4" as the destination track, and click Process.
- 7) In Pro Tools, play the resulting track "Audio 4" with "Audio 1".

# **Moving the Dub Display for Inspection**

Before or after Alignment takes place, if mouse pointer is placed over the Dub energy display and the mouse button clicked, an Open Hand Icon will appear:



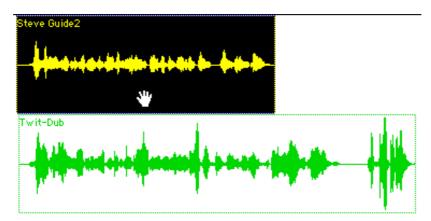
By holding down the mouse button, the Hand Icon will appear "closed" and the Dub audio or Filtered output display can be "dragged" back or forth to check the alignment visually. This has no effect on processing.

# **Processing Signals with Different Lengths**

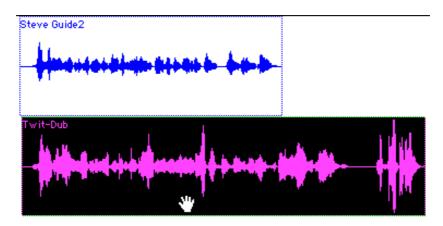
In general, it is common for either the Guide or Dub to be part of a much longer audio regions than the other is. In most cases, the Guide region is longer (being part of a long transfer), while the Dub is a shorter section.

In the second example in the Demo Session, however, we have a Dub that is much longer than the Guide, and even contains extra audio at the end of the region that is not in the Guide.

- 1) Open the *VocALign Tutorial PT* session. Make sure that the second set of audio regions is visible.
- 2) The Guide (*Steve Guide2*) and Dub (*Twit-Dub*) should be played together to hear how the Dub is not only much slower and longer than the Guide but it has extra audio at the end.
- 3) Highlight the *Guide* audio as shown below and *Capture* it in VocALign by clicking on the *Guide* button, and clicking on *Capture*.

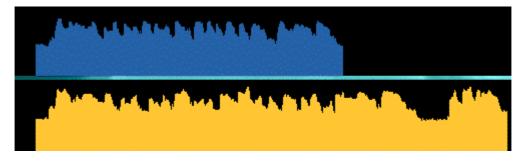


4) Next, highlight the entire *Dub* as shown below, and capture it into VocALign by clicking on the *Dub* button, and clicking on *Capture*.



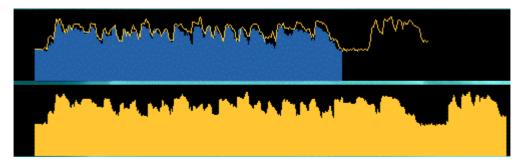
The user could chose to stop before the last part of the audio, but this example will show that when the highlighted Guide region stops, if there is more Dub selected to process, it will simply be added on after the alignment activity required by the Guide is completed.

5) The following should appear:-



Before processing, the user should try to determine which modulations in the Guide match with modulation in the Dub.

6) Next, click on the *Align* button and the resulting aligned (orange) trace over the *Guide* should appear as shown below:



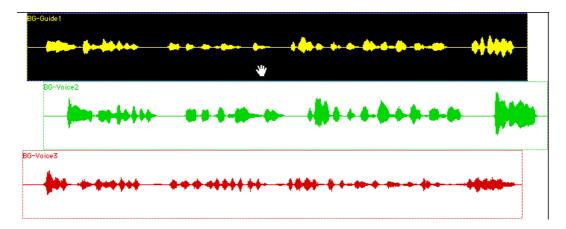
In this case, the *Dub* audio filter waveform is aligned up to the point where the *Guide* selected waveform (shown in blue) stops, and then the rest of the Dub filter waveform is joined on but without any modification.

- 7) The user should ensure that the *Setting* shows *Normal Flexibility* and that the track "Audio 3" is selected as the *destination track*, and then click *Process*. VocALign should generate the Aligned audio and then "spot" it into Pro Tools.
- 8) Play the result in Pro Tools and note the amount of time compression required to align these two signals and also note how the end of the Aligned Dub is unedited.

## **Aligning Multiple Takes**

One further useful feature of VocALign Project is that once a Guide or Dub is captured, you may recapture one of the signals without affecting the other. There are many advantages to this, and in this last Example, we will use this feature to align three different vocal tracks.

1) Return to the Pro Tools *VocALign Tutorial PT* session and locate the three regions shown below and highlight the audio within the region *"BG-Guide1"* in track "Audio 1" as shown. Capture this as the *Guide*.



You should also play these three tracks together to hear how they are aligned in this session.

Next, carry out the following steps carefully:

2) In Pro Tools, highlight and capture the *BG-Voice2* region as shown below as the *Dub*.



- 3) Align this using *Normal Flexibility*, examine the sync and if it looks correct, set the destination track to "Audio 4" and click *Process*. The edited region should appear in Pro Tools track "Audio 4".
- 4) Next, highlight and capture the *BG-Voice3* region as shown below as the *Dub*.
- 5) Change the VocALign Project *Setting* to *Low Flexibility* (setting number 2). This is to minimize the amount of editing on this voice.
- 6) Next, click *Align* and examine the alignment. Set the *destination track* to "Audio 5" and click *Process*. The edited region should appear in Pro Tools track "Audio 5".
- 7) In Pro Tools, mute tracks "Audio 2" and "Audio 3", and play tracks "Audio 1", "Audio 4" and "Audio 5" together. They should be tightly synchronized.

# **Foreign Dialogue Synchronization**

#### **Summary**

This section discusses the problems that arise in foreign language dialogue replacement (dubbing) and how and when VocALign can be used to assist this process.

#### Overview

The quality of lip synch that can be achieved in Foreign Dialogue Replacement (often called Dubbing, Doublage, etc.) depends on many factors including:-

- The quality of the translation.
- The accuracy of the timing of the new dialogue recording.
- The ability of the editor to modify the new dialogue.

VocALign will attempt to align one set of audio modulations to another, no matter what the audio signals are. Therefore, it can be used to align the modulations of recorded dialogue in one language to recorded dialogue in another language.

Thus, when there is an audio Guide Track that is in good synch with the lip movements in the picture, VocALign can generally be used to improve the accuracy of the lip sync of the replacement foreign dialogue.

Sometimes, unfortunately, the Guide Track will not be in close sync with the picture. This can occur if the Guide Track is itself already badly dubbed or in a different language from the original location recording.

In this case, even if VocALign matches the new audio modulations to the Guide, they will be out of sync, just as the Guide is. An experienced editor must align the audio by ear and eye in this case, and VocALign is not likely to be of much assistance.

Also, the Guide track used for dubbing can sometimes contain music and effects. This makes the job for VocALign harder, but not impossible, since it must "ignore" the music and effects in the Guide Track and match only to the dialogue.

Lastly, the translation may demand that the two audio signals are vastly incompatible and result could never be totally satisfactory. In this case, the best result sometimes comes from making the two audio signals start together and, if possible, end together. VocALign or the use of linear time compression or expansion products (such as Synchro Arts TimeMod<sup>TM</sup>) can often help in this case, too.

#### **Suggested Operations**

Advice: Dialogue Editors should be very familiar with the use of VocALign on dialogue replacement in the same language before attempting to use it for foreign dialogue replacement.

The following tips are suggestions and not rules, so the user should not only try these techniques, but also experiment further. Every line of dialogue is likely to need individual attention.

#### When to use VocALign

If the Guide Track dialogue is in sync with the picture, and the replacement foreign dialogue has been translated and recorded to achieve good lip sync, then VocALign should be able to improve the quality of lip sync.

#### Break the dialogue into appropriate length sections.

The user must remember that VocALign is deliberately restricted to stretching a part of a signal by a factor of 2.0 (100% expansion) and compressing it by a factor of 1/2 (50% compression). If VocALign is trying to expand or compress a gap in the speech, and it has used up its allowance, it may try to expand or compress the neighbouring speech.

This means, for example, that if gaps in the new and replacement dialogue appear in different places or are of very different durations, after modifying the gap region, VocALign might also have to expand or compress the replacement speech signal near the gap, to best align the modulations. This may lead to unwanted effects. In this case, the user should break the signal into sections that can be individually treated.

### Sync up only the beginning of a line

To get only the beginning of a new line of dialogue to sync up with the Guide, use the "latching" technique described earlier. This means only selecting perhaps a second at the start of the guide that VocALign will try to sync the dub start to, and the entire replacement line for the dub.

#### Minimize the amount of VocALign's Time Compression and Expansion

If VocALign is making too many timing modifications and creating unnatural sounding speech, try using the "Low Flexibility" setting.

#### To align only the start and end of the replacement audio

Use a Linear Time Compression/Expansion utility (such as TimeMod™ available with VocALign Pro and ToolBelt from Synchro Arts) to get the new dialogue to the same length. Then use VocALign to fine tune it.

#### Use combinations of original and VocALigned output

By using the *Process* feature of VocALign in conjunction with the Copy functions of Pro Tools, a mixture of VocALign output and the original signal is sometimes the best way to achieve a balance between synchronized and natural sounding speech.

# **Special Operations:**

#### "Latching"

To align just the start of the Dub with the Guide (and leave the rest of the Dub unprocessed), capture only 0.25 to 1.0 second of the Guide and capture the Dub as normal.

#### Reverb tails

To stop the end of a Dub from being stretched to wrongly "fit" to a noisy or reverberant Guide, stop the captured end of the Guide 0.25 to 1.0 second before the Guide signal of interest ends and capture the Dub as normal.

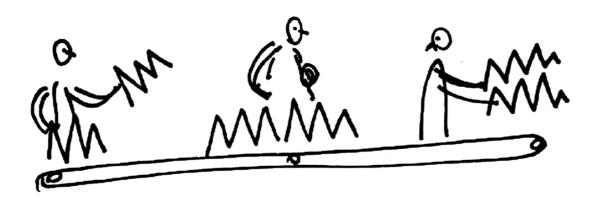
#### **Destination Track set to "none"**

Normally, the VocALign Project user is advised to always select a "destination track" in the plug-in.

However, if the destination track is set to "none" and aligned audio is "processed", it will be returned to Pro Tools in sync with the original guide audio, and on a track where the cursor is present. Once aware of this fact, the VocALign Project user can make use of it to speed-up the operations involved in using VocALign Project:

- 1) Make sure "use in playlist" is selected
- 2) Ensure that the Dub audio is close to the Guide audio in the Pro Tools timeline.
- 3) Select the Guide audio and send it, as normal, to VocALign Project
- 4) Select the Dub audio and send it to VocALign Project, making sure the Dub audio remains highlighted.
- 5) Once aligned, press "Process" with "destination track" set to "none". The aligned audio will be sent to the track where the Dub was taken from.

In this way, dub audio can be aligned by VocALign Project and updated in Pro Tools. There is then no need for an additional track to receive the "aligned" audio.



# G) Trouble-Shooting

Some commonly occurring problems are listed here:

#### **Problem:**

"VocALign Project does not appear in the AudioSuite menu."

#### Solution:

**Mac users:** Check that the file "VocALign Audiosuite" has been copied to the Plug-Ins folder within the DAE folder in your "System Folder".

Windows users: Check that the files "VocALign.dpm" and

"VocALign.dpm.rsr" have been copied to the Plug-Ins folder within the DAE folder.

#### **Problem:**

"The aligned audio appears in an incorrect destination track."

#### Solution:

Make sure you have selected a destination track before pressing "Process". If "none" is the selected destination track, the aligned audio will appear in the currently selected track, in sync with the Guide.

If you have renamed Pro Tools tracks whilst the plug-in window is open, the drop-down destination track list will not reflect those changes until the plug-in window is closed and opened again.

#### **Problem:**

"No aligned audio appears in the audio editor".

#### **Solution:**

Make sure you have selected "use in playlist" in the VocALign Project window.

#### **Problem:**

"While previewing audio from VocALign Project, the following messages are displayed in Pro Tools: "DAE error -7456 was encountered" followed by "Previewing has been aborted".

#### Solution:

This is actually a bug in Pro Tools 5.0 and 5.0.1, and does not affect the processed audio. It was been fixed in Pro Tools 5.1

Further help and advice can be found on the Synchro Arts website at http://www.SynchroArts.com/support

