

**S Y N C H R O | A R T S**

# **VocALign<sup>®</sup> Project 3 (AAX)**

**For Pro Tools<sup>®</sup> 11 & 12**

Compatible with Apple<sup>®</sup> Macintosh<sup>®</sup> and Microsoft<sup>®</sup> Windows<sup>®</sup> systems

**User's Manual**

**Manual Version 3.3**



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## **B) Important Notes**

This program is compatible with Pro Tools 11 and 12 (or higher) software (an AVID product).

VocALign Project 3 (AAX) for Pro Tools systems processes audio with sample rates up to 192 kHz.

In this manual, "VocALign Project 3 (AAX) for the Pro Tools System" will be referred to as "VocALign Project 3" or "VocALign Project"

## **Acknowledgements**

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

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## **C) 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.

## **D) 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:

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



## **E) Installation and Authorization**

### **System Requirements**

VocALign Project 3 AAX plug-ins will run with Mac and Windows OS systems that support Pro Tools 11 and 12.

### **Software Installation**

If you have not already done so, download VocALign Project 3 plug-ins from [www.synchroarts.com/downloads](http://www.synchroarts.com/downloads) and install it by following the instruction on the website.

### **Trial and Full Licenses**

VocALign Project can run in a **Trial Mode** but it will require an **iLok Trial license** which you can obtain from the [Synchro Arts website](http://www.synchroarts.com). Once you have obtained and installed the Trial license as described below, VocALign Project will run in a **fully functional** demonstration mode for the number of days stated in the information you receive with it.

VocALign Project licenses will authorize both Mac and Windows versions.

**If you already have a VocALign Project license installed on an iLok USB Key that is plugged into the computer running VocALign Project, you can skip the rest of this section on authorization.**



## Software authorization summary

VocAlign Project uses the iLok system described on [www.iLok.com](http://www.iLok.com) for authorization.

**IMPORTANT: Before you can run VocAlign Project, you must do all of the following (if you haven't already done so)**

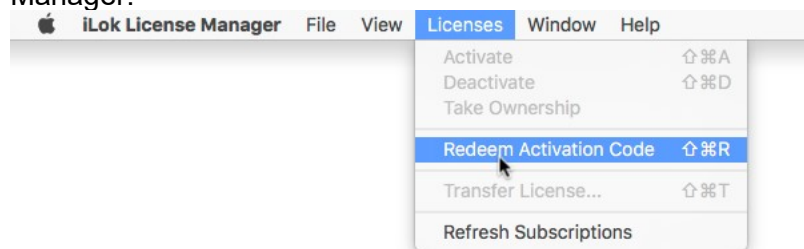
1. Create a free account on [www.iLok.com](http://www.iLok.com)
2. Go to [www.iLok.com](http://www.iLok.com), download and install the new **iLok License Manager** on your computer.
3. Run the iLok License Manager and sign in.
4. Synchro Arts normally supplies an iLok Activation code in the form:

**XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XXXX-XX**  
(where X's are numbers)

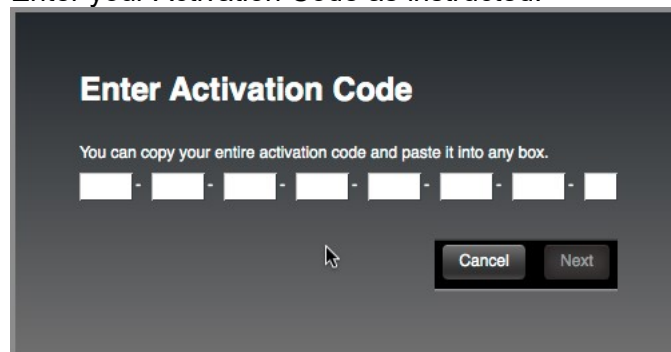
note that this code is NOT a licence but an **Activation Code** that you can redeem in the iLok License Manager to obtain your licence.

5. To redeem an **Activation Code**:

- Open the 'Redeem Activation Code' window in the iLok License Manager.

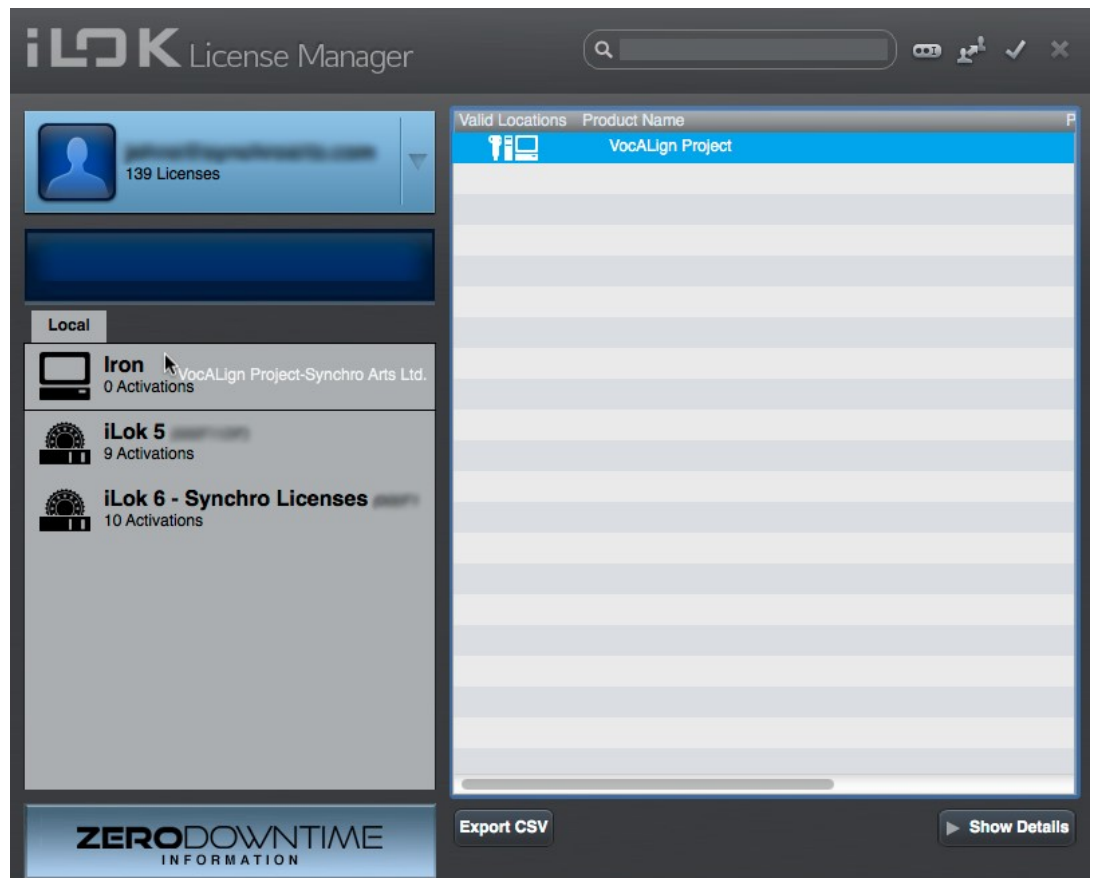


- Enter your Activation Code as instructed.



- If the code is recognized, you will get a VocAlign Project License in the iLok Manager

6. Drag the License to your Machine or iLok USB Key.



## **Optional – iLok USB Key**

### **How to authorize VocAlign software with your iLok Key**

iLok Keys can hold licenses for a number of protected software products. You can have licenses from Synchro Arts and other software vendors on the same iLok.

If you followed the above procedures correctly, and the iLok Key with the relevant license is inserted in the computer running VocAlign Project, it should run in an authorized mode by simply launching VocAlign Project.

### **Reauthorizing VocAlign Project if iLok is removed**

If you subsequently try to run VocAlign Project without the iLok inserted into your computer you will receive a warning message. Follow the instructions in the warning to reauthorize the software.

#### **WARNING:**

Do **not** remove the iLok from your computer while you are using VocAlign Project.

If the iLok is removed, VocALign Project will put up a message asking you to reinsert your iLok Key. If you do not re-insert the key, the program will output silence and also warn you that it is not licensed.

## **iLok Support**

For further information on iLok, go to [www.iLok.com](http://www.iLok.com).



## F) Quick Start Guide

To learn to use VocAlign Project 3 only takes a few minutes, but for getting the best results **we strongly recommend that you first try VocAlign Project 3 on the VocAlign Pro Tools Tutorial Session.**

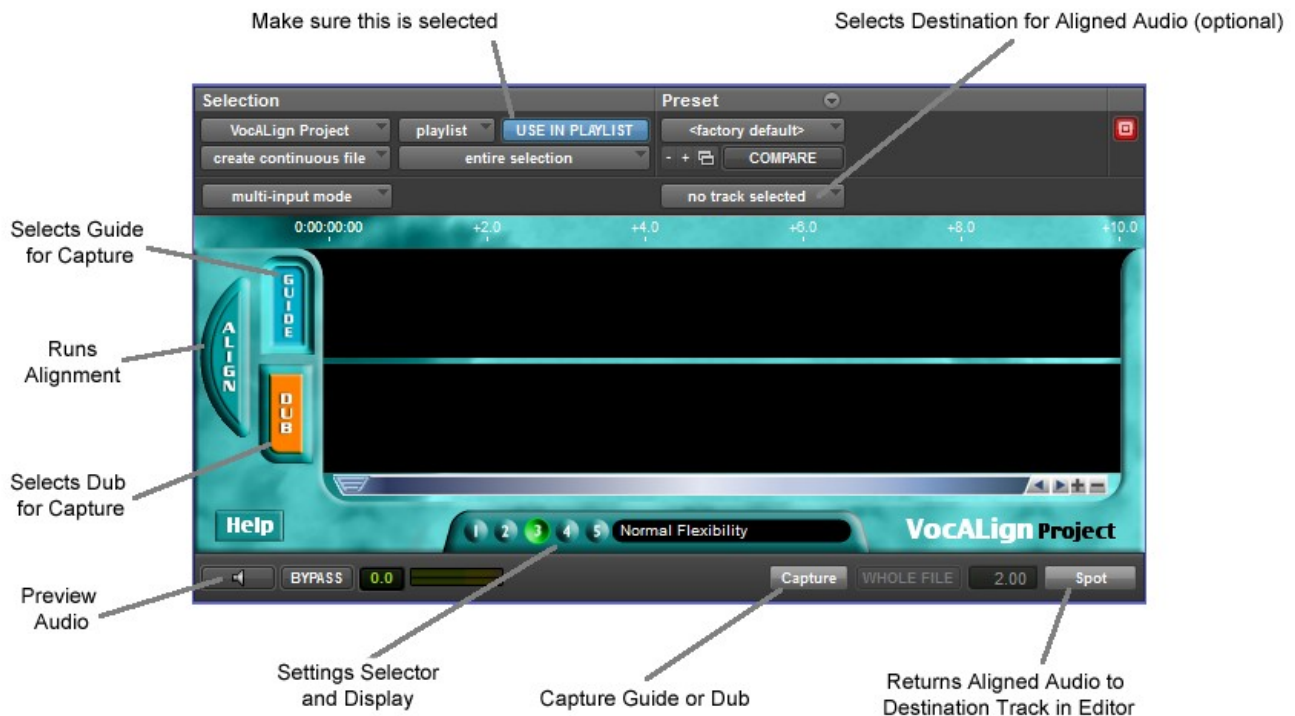
The "VocAlign Pro Tools Session" can be downloaded from:

**[www.synchroarts.com/downloads](http://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 3 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 3 Window:



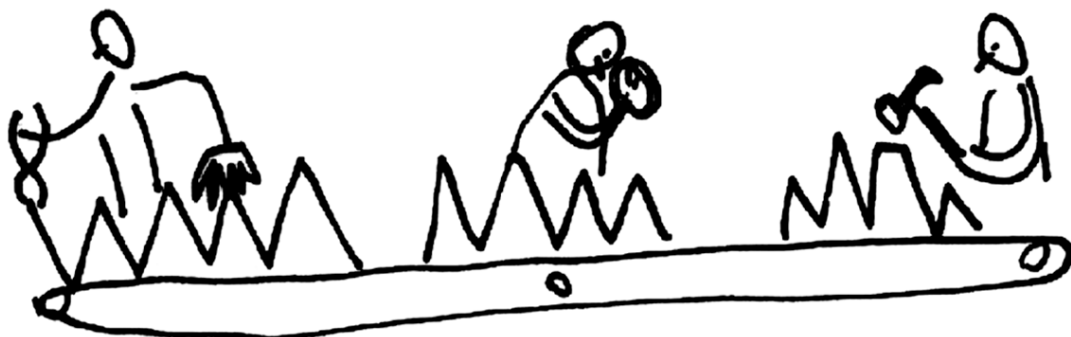
1. In Pro Tools, select the **VocAlign Project** Plug-in from the **AudioSuite** menu in the drop down **Other** folder.
2. Make sure "USE IN PLAYLIST" is selected
3. Select the *Guide* audio in Pro Tools (e.g. *Steve Guide 2* in the "VocAlign Tutorial PT" session)
4. In VocAlign Project, click the *Guide* 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. [Option] Press *Align* to generate an Aligned Dub trace that lets you visually check alignment. (Note: You do not need to do this step as the *Spot* button will also do the Alignment.)
9. Select a *destination track* for the Aligned audio. (e.g. select *Audio 3* for the "VocALign Tutorial PT" Session)
10. Press *Spot*. 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.**

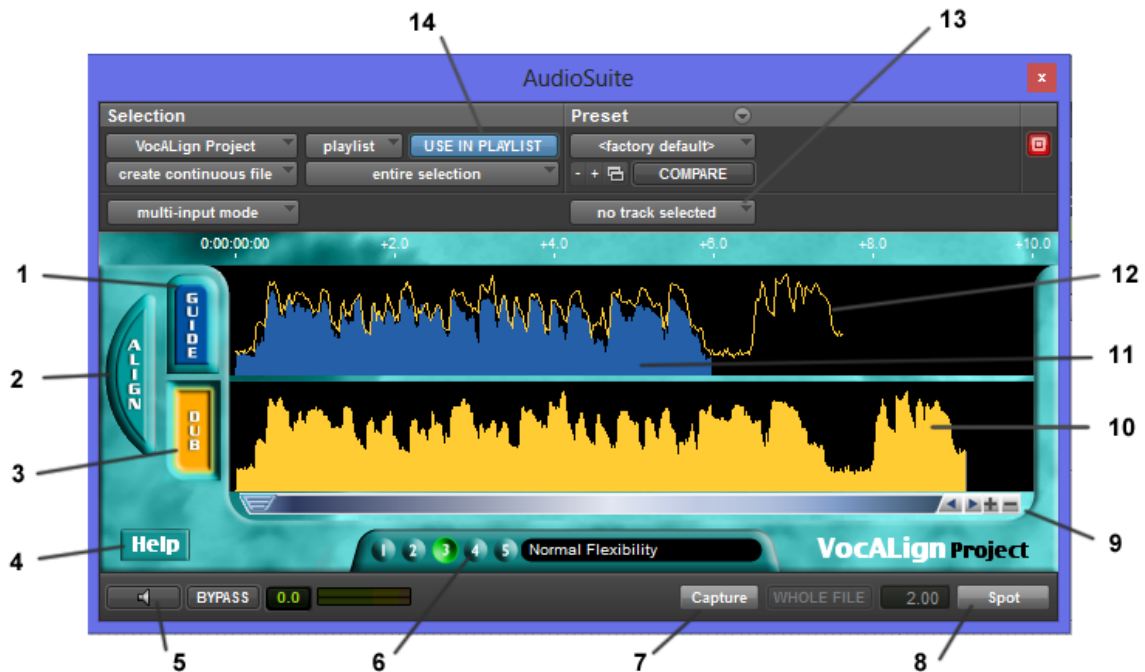
Consult the information in **Chapter "Troubleshooting"** if the audio you have aligned does not appear to be aligned properly.

**Chapter G** details how to get the most out of VocALign Project 3.



## G) 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) **Help Button:** Access to the Manual.
- 5) **Preview Button:** Click to audition the new *Aligned* audio.
- 6) **VocAlign Settings:** Control the way that VocAlign aligns the audio:
  - a) *Maximum Compression:* Tries to match the Guide by time compressing the aligned audio as much as possible
  - b) *Low Flexibility:* Alignment is not very flexible, sound quality may be best.
  - c) *Normal Flexibility (Default):* Standard VocAlign settings, works best in most cases
  - d) *High Flexibility:* Alignment is as flexible as possible
  - e) *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) **Spot Button:** Creates the *Aligned* audio and places it in the *destination track* in Pro Tools in sync with the *Guide* audio.

- 9) **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
- 10) **Dub Energy:** A profile of the energy of the *Dub* signal in time
- 11) **Guide Energy:** A profile of the energy of the *Guide* signal in time
- 12) **Aligned Audio Trace:** A representation of the energy of the new *Aligned* signal.
- 13) **Destination Track:** (Optional) Selects into which Pro Tools track the Aligned audio will be placed when *Spot* is pressed. Destinations can also be designated manually if the is set to “no track selected”. (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 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 audio.

- 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).

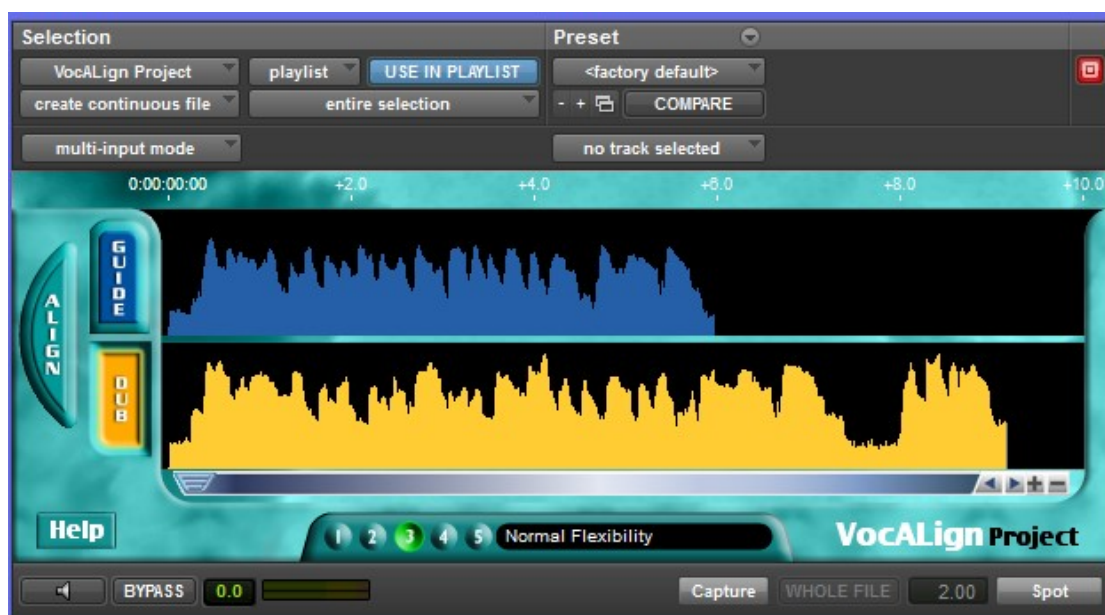
Note: In the current version of VocAlign Project 3, the selected audio must be shorter than 120 seconds and longer than 0.25 seconds.

- 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.

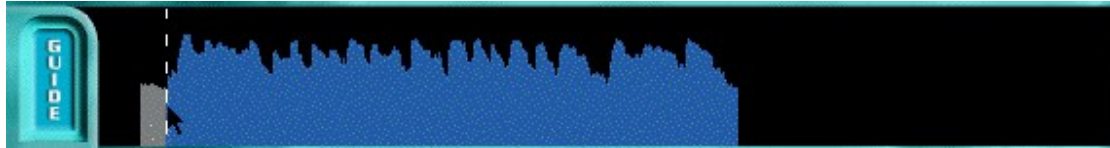
**HOT TIP: Try to capture *very slightly* more “background” audio before the Dub signal starts than you did for the Guide.**

- 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 a few 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 *Spot*.
- 13) 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.



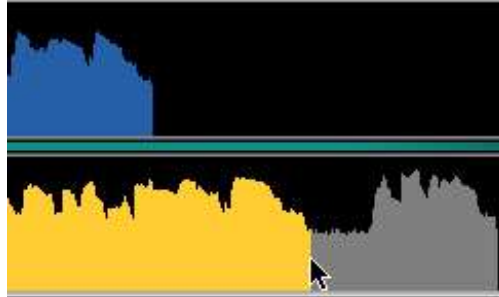
**Important: The *Dub* does not have to start at the time of the *Guide*. In other words, its timecode position is not used. The *Guide*'s timecode is important and so is the amount of "background" captured before the *Guide* and the *Dub*.**

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

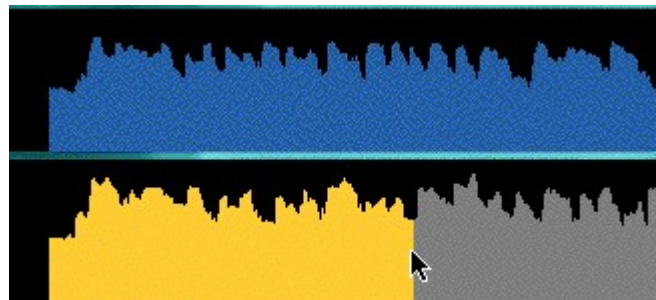
## **Altering the Selected Region**

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.

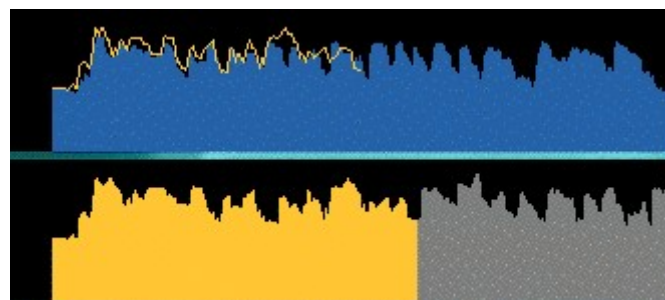
- 1) First, move the cursor to the end of the Dub filtered as shown below.



- 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 Spot.
- 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:



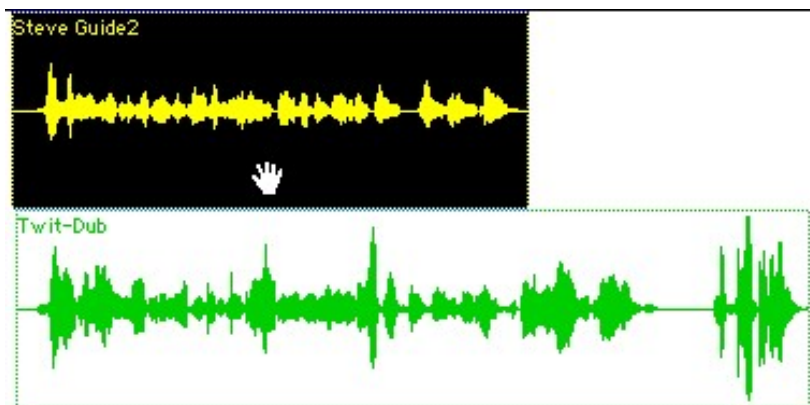
By holding down the mouse button, the Hand Icon will appear "closed" and the Dub audio or Filtered output display can be "dragged" back or forth to check the alignment visually. This has no effect on processing.

## Processing Signals with Different Lengths

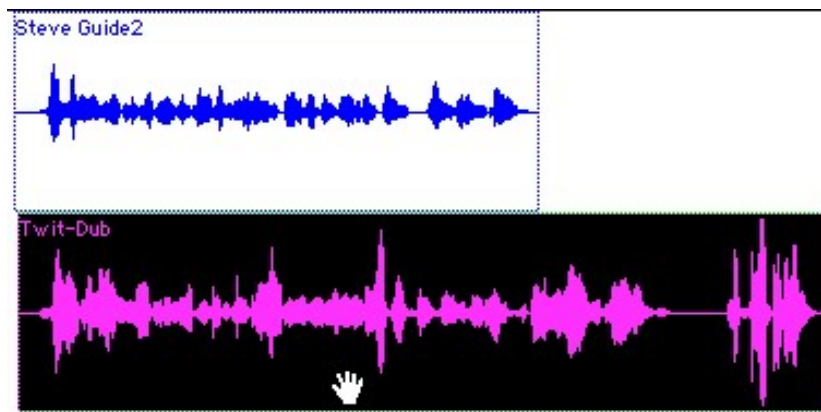
In general, it is common for either the Guide or Dub to be part of a much longer audio regions than the other is. In most cases, the Guide region is longer (being part of a long transfer), while the Dub is a shorter section.

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*.

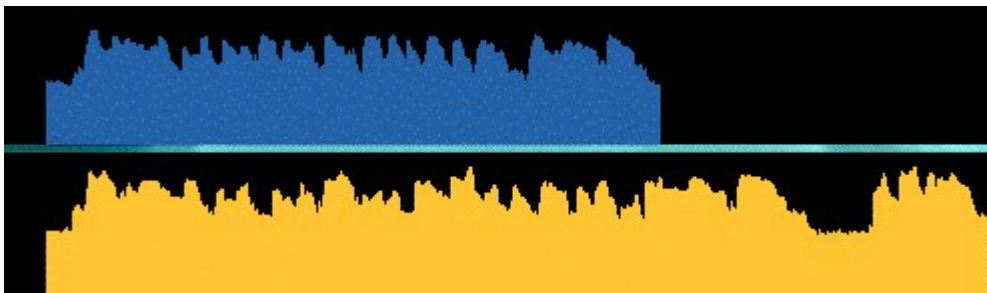


- 4) Next, highlight the entire *Dub* as shown below, and capture it into VocALign by clicking on the *Dub* button, and clicking on *Capture*.



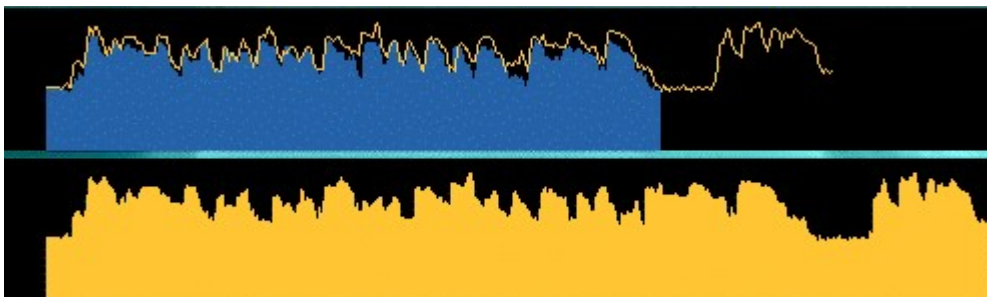
The user could chose to stop before the last part of the audio, but this example will show that when the highlighted Guide region stops, if there is more Dub selected to process, it will simply be added on after the alignment activity required by the Guide is completed.

- 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.

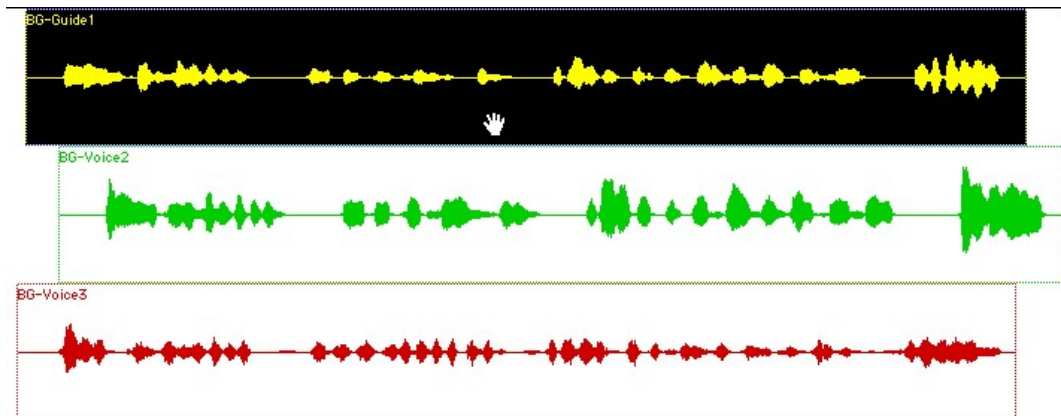
- 7) The user should ensure that the Setting shows Normal Flexibility and that the track "Audio 3" is selected as the destination track, and then click Spot. VocAlign should generate the Aligned audio and then "spot" it into Pro Tools.
- 8) Play the result in Pro Tools and note the amount of time compression 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 3 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 *Spot*. 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 3 *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 *Spot*. 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.

## H) 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™) 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 *Spot* 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.



## **I) 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.

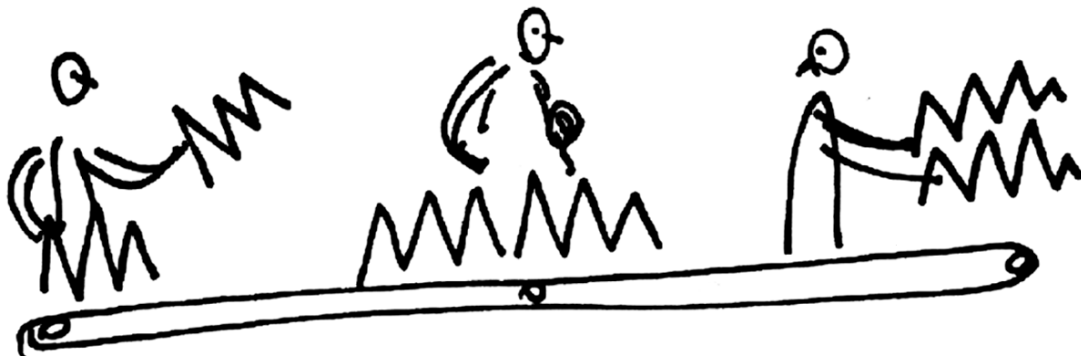
### **Destination Track set to “none”**

Normally, the VocALign Project 3 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 3 user can make use of it to speed-up the operations involved in using VocALign Project 3:

- 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 3
- 4) Select the Dub audio and send it to VocALign Project 3, making sure the Dub audio remains highlighted.
- 5) Once aligned, press “Spot” 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 3 and updated in Pro Tools. There is then no need for an additional track to receive the “aligned” audio.

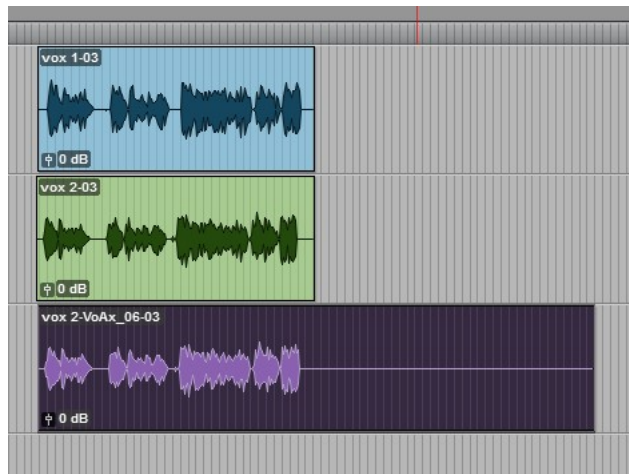


## J) Trouble-Shooting

Some commonly occurring problems are listed here:

### **Problem:**

*There is an issue in the current versions of Pro Tool 11 which can result in the length of the output audio created by VocALign being too long. The signal will be followed by an area of silence.*



### **Solution:**

To avoid this issue, do the following:

**VocALign Project** - Press the **Align** button before pressing **Spot**.

**We are working with Avid to fix this issue in later versions of Pro Tools.**

### **Problem:**

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

### **Solution:**

Make sure you have selected a destination track before pressing "Spot".

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.

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

