

Mid / Side Processing for Enhanced Stereo Effects

By Guillaume Jeulin

Blue Cat Audio

<http://www.bluecataudio.com>

Concept Origin: Mid/Side Recording

Mid/Side recording is a quite famous recording technique that is preferred in some cases to the traditional Left/Right recording. Looking for "mid side recording" in Google will give you many tutorials about this technique. We won't discuss it in details here, my goal is to explain how Mid/Side processing works and where it comes from.

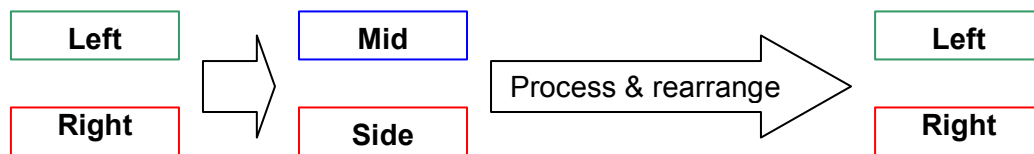
Anyway, as a result of your recording you end-up with the Mid / Side (M/S) channels instead of classic Left / Right (L/R) channels in your audio stream. The Mid channel is also often called "Mono" and Side "Stereo" (that's nice, it's the same letters!): the Mid channel contains the signal that is in the center of the stereo mix, and the Side channel contains the rest (everything that is on the sides of the mix):



(The triangles above represent the listener's head)

From Mid/Side Recording to Processing

The relationship between L/R and M/S channel can be computed so that you can transform any Mid/Side recording to standard listen able Left/Right stereo stream. The reverse operation is also possible, which means that you can artificially separate Mid/Side information from your usual L/R stereo tracks. That's what is done by our Mid/Side processing plug-ins.



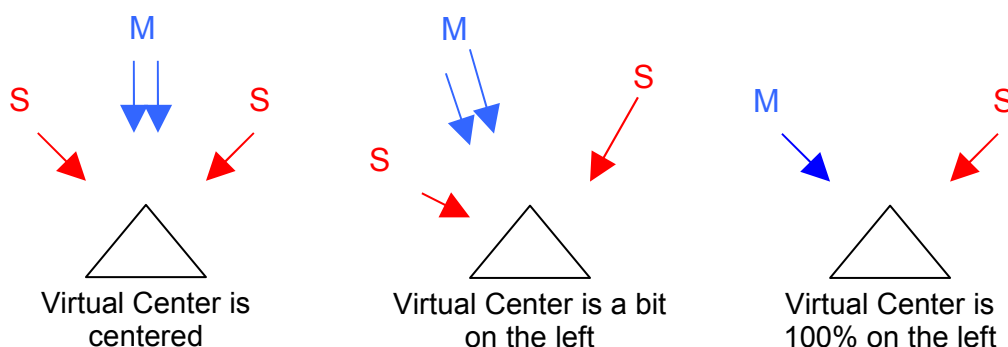
Processing separately the Mid/Side channels instead of Left/Right channels makes stereo widening very easy: you control the way you apply your effect on the Mono (Mid) and Stereo (Side) parts of the sound. The simplest mid side processing you can do is modify the gain on Mid/Side to enhance or reduce the stereo impression of your sound: boost Mid and Cut Sides will make your sound more 'Mono' and do it the other way will widen your sound: it will sound more 'Stereo'.



This principle can be applied to many effects. For example using a 'widening' Equalizer such as [Blue Cat's Widening Parametr'EQ](#) or [Blue Cat's Widening Liny EQ](#) enables you to choose which frequencies you want boost/cut on the sides or on the center of the stereo field. Let's say you want more bass in the middle, and more treble on the sides, just push 2 sliders!

Going further: choosing the 'Virtual Center' position

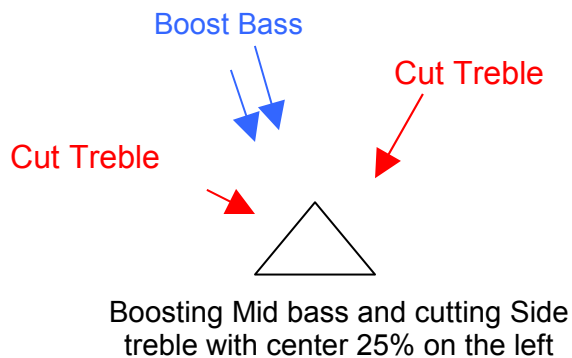
Mid/Side processing can be further enhanced with the choice of the virtual center of the Mid/Side channels. What does this actually mean? It means that you can decide where the virtual Mid Channel is in the stereo field when doing your M/S channels separation:



You can see above that when you move the virtual center 100% to the left or 100% to the right you end up with the traditional L/R stereo channels.

In the end what happens is that you can exactly choose where your effect takes place. As explained before you are able to process separately Mid and Side channels. Since you can now choose where they are in the stereo field, you can choose where the processing takes place.

Example: Boosting Bass for the Mid Channel with a 25% left virtual center position will boost the bass slightly on the Left only, and cutting treble on the Side will cut it on the right, and on the extreme left of the stereo field.



That's a very powerful tool to choose where you want to apply your effect and thus enhance the stereo rendering of your sounds. It can be applied to a final mix in a subtle way to apply the effect in a specific place, and also on a track for a given instrument to change the way it occupies the stereo field, without panning it completely.

Conclusion

Mid/Side processing is an easy-to-use technique to enhance the stereo perception of an audio track, and choosing the virtual center position then lets you enter the world of advanced audio effect positioning in the stereo field.

For more information about Blue Cat Audio's Mid/Side effects, please visit our website: <http://www.bluecataudio.com/>. Free demos are available.

