SPAT - Part 1: Your New Best Buddy For Mixing

By Peter Lawrence Alexander / March 29, 2012

One of the most difficult problems in mixing orchestral mock-ups, knowing how to spatially place instruments quickly and easily, has now been simplified with Ircam SPAT, a 32Bit downloadable audio plug-in that works with any library.

I want to thank Daryl Griffith and Piet de Ridder for their valuable insight on orchestral mixing and on SPAT. Piet went way out of his way to answer my questions and give his insights. This article has been enriched because of it.

One of the most difficult problems in mixing orchestral mock-ups, knowing how to spatially place instruments quickly and easily, has now been simplified with Ircam SPAT, a 32Bit downloadable audio plug-in that works with any library. Says the Ircam web site about SPAT, "SPAT is the most advanced and sophisticated tool for room acoustics simulation and localisation."

> In short, you can place instruments (live or sampled), vocalists, foley, et al, and design the space you want them heard in. Or, you can turn off the reverb portion and use your favorite reverb.

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To do this, there are two broad parts to SPAT.

The first part is an easy to learn tool that enables you place a sound anywhere stage left to right, and closer/farther away from the conductor. This aspect of SPAT enables you to spatially position libraries recorded in different rooms and different mic positions in such way that they line up to work more like a single section, or a whole orchestra.

The second part is a reduced version of Ircam's Verb, which is an algorithmic room acoustics and reverberation processor, which, as I mentioned, you can turn off. It's not necessary to use this aspect of SPAT, but if you do, you must follow this thinking about SPAT as explained to me by Piet de Ridder, a fellow composer/user of SPAT who has the habit of achieving excellent mixes of his work:

> *"The key to (understanding) SPAT is, I believe, not to approach it as you would any other reverb software. SPAT works entirely differently: it doesn't treat reverberation as something separate which you 'add' to a dry sound, but it always considers the combination 'source signal' plus 'room response' as one single phenomenon. It is, in my opinion, really essential that one is fully aware of this when starting to work with SPAT. SPAT is not another piece of reverb software (and it shouldn't be approached as such), it's a very complex simulator of what happens to sound in a certain user-definable space."*

You can setup SPAT for stereo all the way up to 7.1 surround sound, and even three channel theater (LCR) viewing. In fact, once installed SPAT reads your system and does a preliminary speaker setup for you.

Installation
Installation only takes a few minutes. You'll need an iLok key and to have your reg deposited to your iLok account. Once completed, download SPAT and follow the install instructions. It really just takes a few minutes.

Since it's 32Bit, Logic users should remember to first reset Logic for 32Bit and then open Logic. Once Logic sees it in 32Bit you can go back and reset Logic again for 64Bit. For the post-community, no probs in ProTools.

The PDF manual comes with four-color screen captures (see below for download). It's difficult reading in either Preview or Adobe Reader because the print is so small, and made more difficult to read if you print it out as a black and white document. So while it will definitely eat up the ink in your cartridges, the color print out is really optimum. Another option is to send the manual to your iPad.

Spatial Placement
For this first review, I'm sticking to what I see for many as a top problem/solution benefit of SPAT for composers doing their own MIDI mock-ups and mixes, which is spatial placement. For this review, I tested using SPAT to place the new Miroslav Vitous String Ensembles 2.01 into a seating arrangement of Violins 1, Violas, Cellos, Violins 2 and Basses (see graphic layout on next page).

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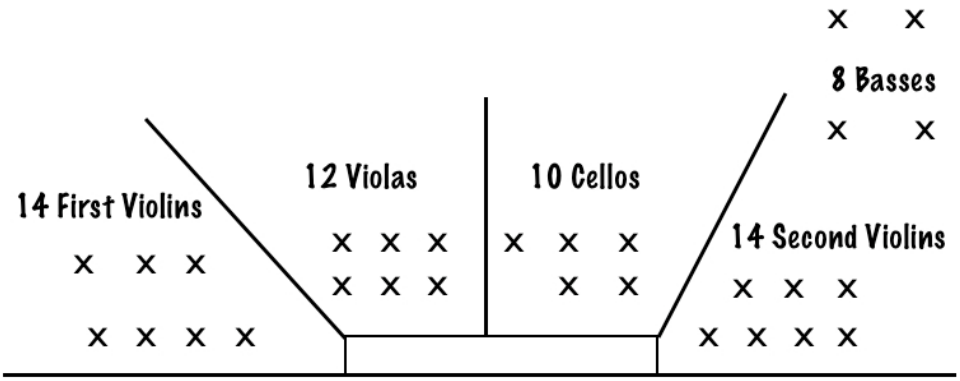
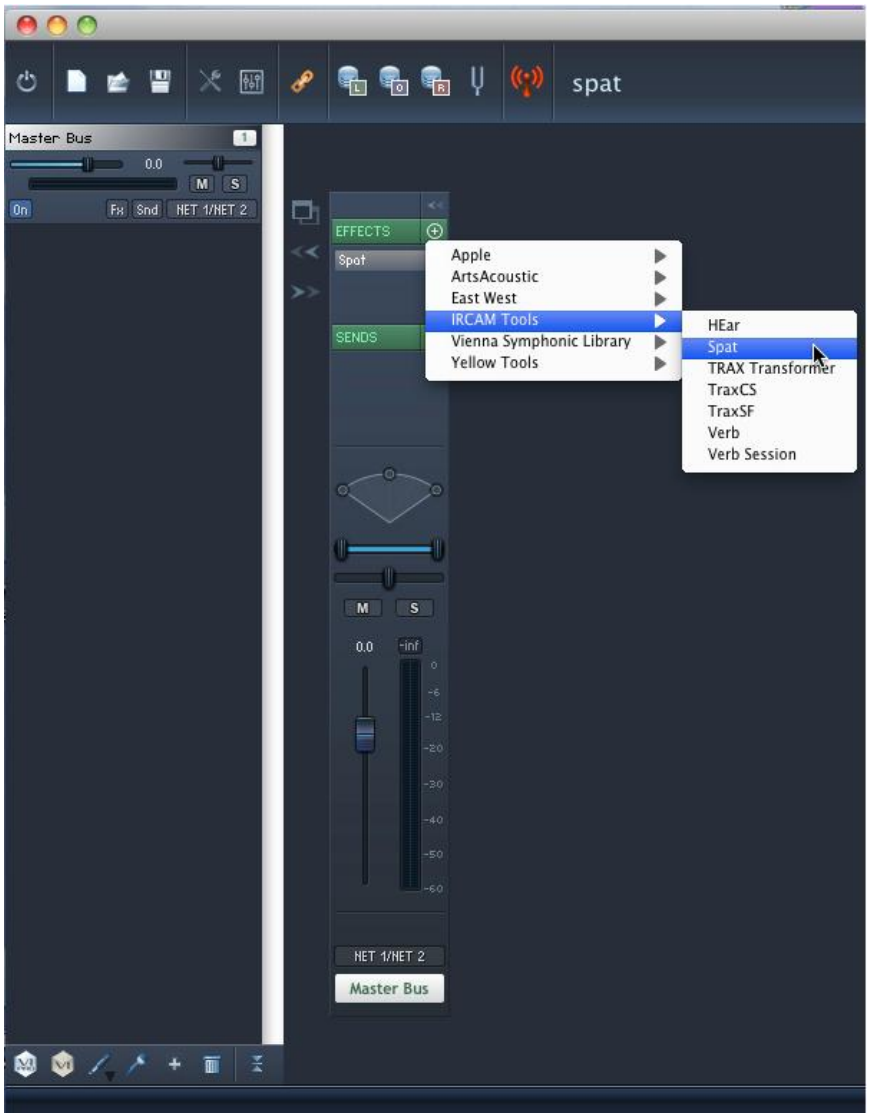


As a starting test, I inserted SPAT into VE Pro 4. The screen capture below shows that VE Pro recognizes the Ircam Tools plugin.



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This now gives composers several practical options with VE Pro or optionally, within the sequencer:

1. You can insert an articulation and SPAT on a single track with the reverb **on**.

2. You can insert an articulation and SPAT on a single track for spatial placement with the reverb **off**, allowing you to add reverb either as a send or within your sequencing program.

3. You can insert a section's worth of articulations in a single instance of VE Pro and use SPAT to spatially place an entire section either in VE Pro or in the sequencing program.

Since I now know that VE Pro recognizes Ircam Tools, I could continue my project right here. However, for this article, I'm doing it inside of Logic 9.1.6 just for simplicity and ease of screen capture.

So my next step is to insert Violins 1 into a single track along with SPAT. Below is a screen capture of SPAT in the "daylight" setting.

In the middle you see the outline of the top of a head direct in front of which are a pair of speakers. For me, I think of the head as being the conductor. Behind the speakers are the numbers 1 and 2 in yellow circles. The number 1 is highlighted in yellow. Coming out of the blueish circle you see Left, Right, Front, and Back. The numbers 1 and 2 mean this is a stereo source and 1 is the left channel while 2 is the right channel. Using either the mouse (by dragging) or controls in SPAT, you can position 1 and 2, here Violins 1, where you want them along with a custom stereo width!

1. You can set clearly separated sections so that each section has its own space.

2. You can slightly overlap sections so that there's a little "bleeding" from one section to the next.

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Below the chart you see the word, RADIATION. Below that you see you see Distance, Azimuth, and Yaw. Here's my simplified explanation:

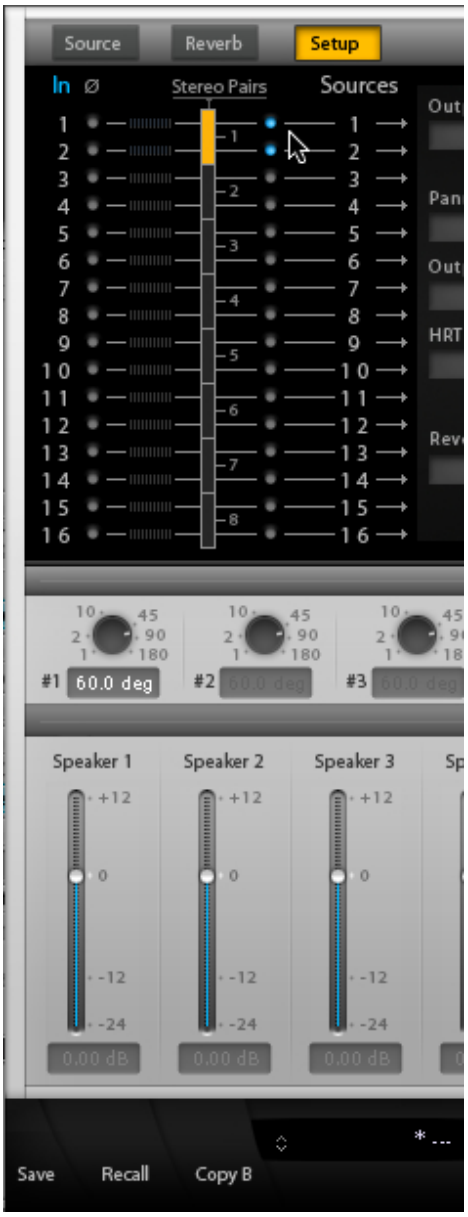
Azimuth = Stage Left to Right

Distance = Closer to the conductor or Away from the conductor.

You can set the stereo width manually, or you can do the following:

1. Click Reverb then Setup.

2. Click the vertical rectangle in the Stereo Pairs column, so that it turns yellow. This connects channels 1 and 2. Below that you'll see a set of numbers labeled 60.0 deg. This refers to the distance between the two sound sources. So now you have the option of setting stereo width manually or here.



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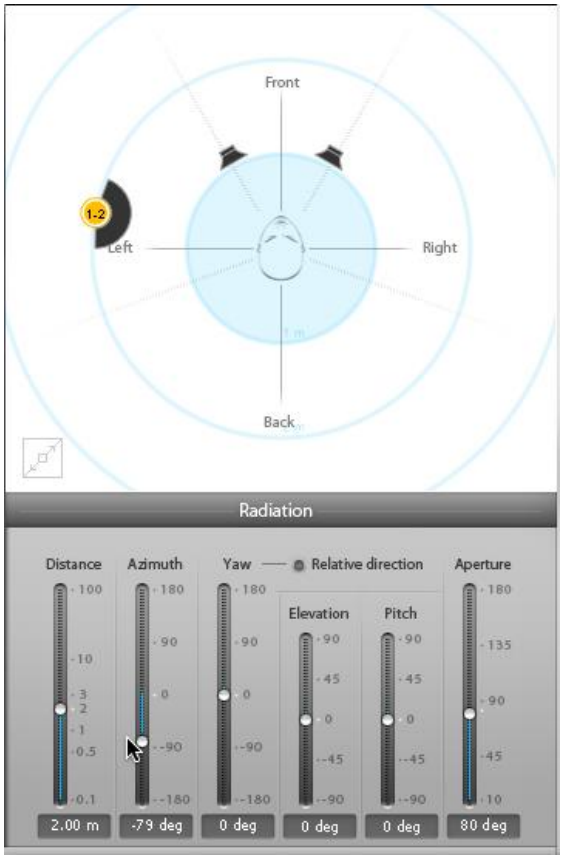
3. Now use the Azimuth slider to position Violins 1.



4. When I play the keyboard, SPAT confirms that Violins 1 are positioned to the left. Look at the Output Levels to the lower-right of the screen capture.

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5. Next, use Distance to position Violins closer to or away from the conductor. Again, closer to is more detail, away from is less detail.

What You Can Now Do
Borrowing from Russell Crowe in *Gladiator*, this is how you can begin making different libraries work, "as one."

You can also think of creating templates from a much different perspective, that of how a recorded ensemble sounds. You could find an album where you particularly like its sound and spatial placement of the orchestra. With SPAT you could work to emulate the positioning. With Distance, you're moving closer to or away from the conductor/listener. So if you pick a close mic setting that's too close, you can push it back. At the same time, if you've picked a sample library's mic setting that's further behind the conductor, you can bring that closer to the conductor or push it back even further.

Testing With LA Scoring Strings
My next experiment was in testing a library recorded "in place" to see how SPAT worked with it. Here I used LASS 1.5 Violins 1 Leg L.

Even though LASS is recorded "in place" I was still able to use SPAT to reposition it. Here my main test was moving it closer to and farther away from the conductor keeping to its pre-recorded pan positioning. So yes, SPAT works with libraries already pre-recorded in an orchestral seating position, which is also good news for engineers, too! So this can help position two different libraries recorded in two different places so that they work as a single section.

Next I had a real "aha" moment with SPAT. LASS has had a reputation as being "edgy" and not as warm as people would like owing to its detuning. Look back at the first screen shot to the left side and you'll see a section labeled *Perceptual Factors*. Underneath that is a fader called *Source Warmth*. Bringing up that fader really warmed LASS by removing some of its edginess.

Reverb On and Off
That you can turn SPAT'S reverb on and off to me is a good thing because to manage system resources better, using SPAT on dozens on tracks with the reverb *on* would really slow down even the heartiest CPU in a system loaded with RAM.

Also, there are those who prefer working with hardware units from Briscasti, Lexicon, or TC Works and prefer that approach to sound shaping.

That said, as a composer/mixer, I did a quick test of SPAT'S reverb with both Miroslav and LASS. Though not an engineer by any stretch of the word, I have gone through the task of testing individual libraries with different reverbs to see how they bring out a library's sound. Some reverbs definitely flatter and work better with some libraries than others.

Testing SPAT's default verb with MV SE 2.0, really brought out the MV strings quite a bit. To my ears, SPAT brought out the lushness and gave MV more airiness and "breathing" room aurally.

I then tested two of LASS's IRs created by Ernest Cholakis using Logic's *Space Designer*, one for the Early Reflections and one for the Tail. Then I disengaged them and turned SPAT's default reverb back on to compare.

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Ernest Cholakis doesn't just create cool IRs, he creates transformations of sound. By using SPAT to warm up LASS and then adding in Ernest's IRs, I think you might be hard pressed in recognizing this library as LASS. BTW, I mean this as a total compliment.

> *What this means to the composer who must mix is that you can create your own signature orchestral sound with SPAT that complements your signature scoring sound.*

Let us put aside academic fal-de-rah. Because of the new technology, we composers are not just entrepreneurs, we are also a new wave of orchestral recording artists, and therefore must approach our careers accordingly.

Reflections
It's now the morning after. I've got my coffee. It's a beautiful bright sunny breezy day out there.

So sitting alone with my thoughts, though I've barely scratched the surface of SPAT, how do I really feel about it and is it worth the bucks?

The first thing I have to consider, and I think you have to consider, is that SPAT isn't freeware. So it ain't cheap! This is a very serious sonic transformation tool on its own. Had I had this review/tutorial to start me off, I would have been productive at this level within 45-minutes.

So the good news is that you don't have to be master mixer to get a lot out of SPAT. You just need good solid easy to understand instruction to get you going and maximize your time.

Second, it works with Vienna Ensemble Pro. This needs more experimentation for spatially placing an entire section and using SPAT's reverb in a manner economical for your CPU.

Third, it works with every library, synth sounds, vocalists, foley, the whole magilla.

Fourth, it can be combined with any convolution or reverb, hardware or virtual.

Fifth, at day's end, it's an audio plugin that just works with every library. I insert it in the appropriate track or VE Pro instance, and it works.

I *like* that.

Admittedly, turning off SPAT's verb does defeat part of the program's purpose, but that is also another strength adding to its flexibility and not making me feel locked in to a system. This for me is another incentive to buy.

Given its MAP pricing, I would absolutely consider spending the extra $200 and getting the Ircam Tools Bundle where you get SPAT, the full version of Verb, and Trax. To put this into a buying context, getting the Ircam Tools bundle is like getting an Adobe bundle. But given the power of the full version of Verb alone, even if you never touch Trax, the extra two bills is worth the price.

That said, SPAT is not for every writer, especially if you're primarily working with just one library where everything is pre-panned for you.

But if you're like me, and you're using multiple libraries where you have to spatially place instruments, then SPAT's worth considering because of the speed with which you can get things done and the results

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thereof. If, for example, you've had difficulty fitting Sample Modeling brass into a mix, you won't with SPAT.

Now, one other delicious application: singers and soloists.

Let's suppose you write backing tracks for a singer, or create a work for a soloist, regardless of the style. Once the vocal track is recorded, you can now place the voice and "the virtual orchestra" together so that they blend as one. In fact, it doesn't have to be a singer. It could be a spoken word presentation like *Peter and The Wolf* or dialog.

In closing, I've read very carefully those posts where composers talk about how they achieved spatial placement in their mixes. Some EQ this, and use a reverb for that, while using Aunt Millie's pancake mix for something else.

With SPAT, you can just place it!

Conclusion
For this starting review, I've only touched on three faders. Even so, just knowing these three can make a tremendous difference in your mixing time and overall sound. And yes, you'll have to experiment. But with SPAT, what you put into it, yields great dividends. Check it out and see if it's right for you.

The SPAT Manual
Spat User Manual

This article was previously published at SonicControl.tv

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