fixed medium delivery
vs.
real-time diffusion performance

by S. Wyatt

Some composers feel <u>direct</u> <u>playback</u> of the recorded work without any performed diffusion, <u>offers</u> <u>the</u> <u>closest</u> <u>version</u> <u>of</u> <u>what</u> <u>was</u> <u>composed</u> and realized in the studio by the composer.

Many are concerned that their work with <u>its</u> <u>predetermined</u> <u>spaces,</u> <u>balances</u> <u>and</u> <u>dynamics</u> <u>may</u> <u>be</u> <u>destroyed</u> <u>by</u> <u>the</u> <u>diffuser</u> <u>or</u> <u>projectionist,</u> and that diffusion/projection would nullify the composed spaces therefore ruining the composer's arduous efforts, and <u>thus,</u> <u>ruining</u> <u>the</u> <u>composition.</u>

Proponents of multi-channel diffusion often argue that a two loudspeaker system within a concert hall offers only a minute part of the audience a sense of those composed spaces and predetermined balances and dynamics with that small portion of the audience being in the sweet spot of the system. All other members of the audience will not hear the intended balance and stereophonic images that were designed, controlled and mixed within the studio due to how the two loudspeakers interact with the large hall.

The sense is that performance of <u>electroacoustic</u> <u>music</u> <u>in</u> <u>large</u> <u>spaces</u> <u>should</u> <u>utilize</u> <u>the</u> <u>characteristics</u> <u>of</u> <u>the</u> <u>performance</u> <u>space</u> <u>as</u> <u>part</u> <u>of</u> <u>the</u> <u>listening</u> <u>experience.</u> Through analysis, familiarity and understanding of the work, an <u>informed</u> <u>and</u> <u>experienced</u> <u>composer/diffusor/projectionist</u> <u>can</u> <u>present</u> <u>the</u> <u>diffused</u> <u>work</u> <u>as</u> <u>a</u> <u>continuation</u> <u>of</u> <u>the</u> <u>composer's</u> <u>musical</u> <u>intent</u> in such a way to significantly expand the listening experience of that work

diffusion (localization and simulation of stereo images) of stereo images
vs.
diffusion (localization and simulation of point sources) of mono point sources

Two main approaches seem to be in the forefront:

- the <u>presentation</u> <u>of</u> <u>stereophonic</u> <u>sources</u> <u>channeled</u> <u>to</u> <u>one</u> <u>or</u> <u>more</u> <u>stereo</u> <u>pairs</u> <u>of</u> <u>loudspeakers</u>—<u>always</u> <u>presenting</u> <u>one</u> <u>or</u> <u>more</u> <u>stereo</u> <u>images</u> <u>to</u> <u>an</u> <u>audience</u> and thus moving stereo images within the performance space,

and the other,

- involving <u>multi-channel</u> <u>panning</u> <u>of</u> <u>a</u> <u>monophonic</u> <u>source</u> <u>or</u> <u>sources</u> within the performance space.

One of the significant problems for presenting stereo recordings of electroacoustic music in a concert hall is the common <u>inability</u> <u>to</u> <u>maintain</u> <u>phase</u> <u>coherence</u> <u>of</u> <u>the</u> <u>stereo</u> <u>image</u> <u>for</u> <u>all</u> <u>audience</u> <u>members</u>. Since the playing of a stereo recording in a large hall <u>will</u> <u>not</u> <u>be</u> <u>heard</u> <u>equally</u> <u>by</u> <u>everyone</u> <u>in</u> <u>the</u> <u>audience</u> <u>due</u> <u>to</u> <u>their</u> <u>seating</u> <u>location</u> in proximity to the sweet spot of the sound system, more stereo pairs of loudspeakers would need to be part of the diffusion system in an effort to present a larger percentage of the audience with a more accurate presentation of the stereo image.

The live panning of monophonic point sources within a multi-channel system, where the concern for maintaining phase coherence is not a problem, is <u>accomplished</u> <u>by</u> <u>straight</u> <u>ahead</u> <u>panning</u> of <u>point</u> <u>sources</u> <u>from</u> <u>one</u> <u>loudspeaker</u> <u>location</u> <u>to</u> <u>another.</u> <u>While</u> <u>this</u> <u>may</u> <u>be</u> <u>more</u> <u>easily</u> <u>perceived</u> <u>by</u> <u>an</u> <u>audience</u> <u>as</u> <u>spatial</u> <u>activity,</u> <u>what</u> <u>is</u> <u>lost</u> <u>with</u> <u>such</u> <u>a</u> <u>presentation</u> <u>is</u> <u>the</u> <u>effectiveness</u> <u>of</u> <u>a</u> <u>stereophonic</u> <u>image.</u>